

ภาคผนวก ค

ใบรับรองผลการตรวจวิเคราะห์

ภาคผนวก ค-1

คุณภาพอากาศ



Analysis / Test Report



TESTING
No.0009

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok
Thailand 10900
P/O : สัญญาเลขที่รฟท.จ.650089
Project Name :
Project Location :

Lot ID: 22141037
Date Received : Nov 28, 2022
Date Reported : Dec 07, 2022
Report Number : 2496960-1

Page 1 of 3

Sample Number 22141037-1
Sampled Date Nov 24, 2022
Sample Description Air Quality
Location สถานีที่ 1 บริเวณทางรถไฟชานเมือง (GPS 47P 0666344, 1526532)
Date Analysis Commenced Dec 02, 2022
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure 758 mmHg
Atmospheric Temperature 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	24/11/22 - 25/11/22	mg/m ³	-	0.005	0.016	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	24/11/22 - 25/11/22	mg/m ³	-	0.005	0.026	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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

Saranya C.

Saranya Chalermthamrong
Scientist (4)

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Analysis / Test Report



TESTING
No.0009

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Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok
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Project Name :
Project Location :

Lot ID: 22141037
Date Received : Nov 28, 2022
Date Reported : Dec 07, 2022
Report Number : 2496960-1

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Sample Number 22141037-2
Sampled Date Nov 25, 2022
Sample Description Air Quality
Location สถานีที่ 1 บริเวณทางรถไฟชานเมือง (GPS 47P 0666344, 1526532)
Date Analysis Commenced Dec 02, 2022
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure 758 mmHg
Atmospheric Temperature 29.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	25/11/22 - 26/11/22	mg/m ³	-	0.005	0.015	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	25/11/22 - 26/11/22	mg/m ³	-	0.005	0.027	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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Lot ID: 22141037
Date Received : Nov 28, 2022
Date Reported : Dec 07, 2022
Report Number : 2496960-1

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Sample Number 22141037-3
Sampled Date Nov 26, 2022
Sample Description Air Quality
Location สถานีที่ 1 บริเวณถนนพหลโยธิน (GPS 47P 0666344, 1526532)
Date Analysis Commenced Dec 02, 2022
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure 758 mmHg
Atmospheric Temperature 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	26/11/22 - 27/11/22	mg/m ³	-	0.005	0.027	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	26/11/22 - 27/11/22	mg/m ³	-	0.005	0.041	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
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TESTING
No.0009

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

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Sample Number 22121097-4
Sampled Date Oct 06, 2022
Sample Description Air Quality
Location สถานีที่ 2 บริเวณถนนพหลโยธิน กม.11 (GPS 47P 0667277, 1528806)
Date Analysis Commenced Oct 26, 2022
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure 758 mmHg
Atmospheric Temperature 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	06/10/22 - 07/10/22	mg/m ³	-	0.005	0.022	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	06/10/22 - 07/10/22	mg/m ³	-	0.005	0.038	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
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P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

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Sample Number	22121097-5
Sampled Date	Oct 07, 2022
Sample Description	Air Quality
Location	สถานีที่ 2 บริเวณถนนรถไฟ กม.11 (GPS 47P 0667277, 1528806)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	07/10/22 - 08/10/22	mg/m ³	-	0.005	0.020	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	07/10/22 - 08/10/22	mg/m ³	-	0.005	0.039	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
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Project Name :
Project Location :

Lot ID: 22121097
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Date Reported : Nov 02, 2022
Report Number : 2451226-1

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Sample Number	22121097-6
Sampled Date	Oct 08, 2022
Sample Description	Air Quality
Location	สถานีที่ 2 บริเวณถนนรถไฟ กม.11 (GPS 47P 0667277, 1528806)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	08/10/22 - 09/10/22	mg/m ³	-	0.005	0.017	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	08/10/22 - 09/10/22	mg/m ³	-	0.005	0.036	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
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P/O :
Project Name :
Project Location :

Lot ID: 22121097
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Date Reported : Nov 02, 2022
Report Number : 2451226-1

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Sample Number	22121097-7
Sampled Date	Oct 06, 2022
Sample Description	Air Quality
Location	สถานีที่ 3 บริเวณวัดเสมียนนารี (GPS 47P 0668209, 1530561)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	06/10/22 - 07/10/22	mg/m ³	-	0.005	0.025	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	06/10/22 - 07/10/22	mg/m ³	-	0.005	0.042	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
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TESTING
No.0009

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P/O :
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Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
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Sample Number	22121097-8
Sampled Date	Oct 07, 2022
Sample Description	Air Quality
Location	สถานีที่ 3 บริเวณวัดเสมียนนารี (GPS 47P 0668209, 1530561)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	07/10/22 - 08/10/22	mg/m ³	-	0.005	0.027	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	07/10/22 - 08/10/22	mg/m ³	-	0.005	0.052	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
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Sample Number	22121097-9
Sampled Date	Oct 08, 2022
Sample Description	Air Quality
Location	สถานีที่ 3 บริเวณวัดเสมียนนารี (GPS 47P 0668209, 1530561)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	08/10/22 - 09/10/22	mg/m ³	-	0.005	0.023	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	08/10/22 - 09/10/22	mg/m ³	-	0.005	0.042	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
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Sample Number	22121097-10
Sampled Date	Oct 06, 2022
Sample Description	Air Quality
Location	สถานีที่ 4 บริเวณโรงเรียนอนุบาลจันทบุรี (GPS 47P 0668994, 1532102)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	06/10/22 - 07/10/22	mg/m ³	-	0.005	0.025	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	06/10/22 - 07/10/22	mg/m ³	-	0.005	0.034	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

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TESTING
No.0009

Lot ID: 22121097

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Sample Number	22121097-11
Sampled Date	Oct 07, 2022
Sample Description	Air Quality
Location	สถานีที่ 4 บริเวณโรงเขี่ยขนอนมาลาจนเสกษณ์ (GPS 47P 0668994, 1532102)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	07/10/22 - 08/10/22	mg/m ³	-	0.005	0.028	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	07/10/22 - 08/10/22	mg/m ³	-	0.005	0.040	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
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Sampled By : Teeravut Sukdee

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Approved by

Saranya C.

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P/O :
Project Name :
Project Location :



TESTING
No.0009

Lot ID: 22121097

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Sample Number	22121097-12
Sampled Date	Oct 08, 2022
Sample Description	Air Quality
Location	สถานีที่ 4 บริเวณโรงเขี่ยขนอนมาลาจนเสกษณ์ (GPS 47P 0668994, 1532102)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	08/10/22 - 09/10/22	mg/m ³	-	0.005	0.024	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	08/10/22 - 09/10/22	mg/m ³	-	0.005	0.035	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

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P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
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Sample Number	22121097-13
Sampled Date	Oct 06, 2022
Sample Description	Air Quality
Location	สถานีที่ 5 บริเวณโรงเรียนบางเขน (GPS 47P 0669429, 1532940)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	06/10/22 - 07/10/22	mg/m ³	-	0.005	0.026	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	06/10/22 - 07/10/22	mg/m ³	-	0.005	0.042	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

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Lot ID: 22121097
Date Received : Oct 24, 2022
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Sample Number	22121097-14
Sampled Date	Oct 07, 2022
Sample Description	Air Quality
Location	สถานีที่ 5 บริเวณโรงเรียนบางเขน (GPS 47P 0669429, 1532940)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	07/10/22 - 08/10/22	mg/m ³	-	0.005	0.020	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	07/10/22 - 08/10/22	mg/m ³	-	0.005	0.042	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
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Sample Number	22121097-15
Sampled Date	Oct 08, 2022
Sample Description	Air Quality
Location	สถานีที่ 5 บริเวณโรงเรียนบางเขน (GPS 47P 0669429, 1532940)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	08/10/22 - 09/10/22	mg/m ³	-	0.005	0.023	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	08/10/22 - 09/10/22	mg/m ³	-	0.005	0.041	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

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Lot ID: 22121097
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Sample Number	22121097-16
Sampled Date	Oct 14, 2022
Sample Description	Air Quality
Location	สถานีที่ 6 บริเวณตลาดหลักสี่ (GPS 47P 0670745, 1505414)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	14/10/22 - 15/10/22	mg/m ³	-	0.005	0.201	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	14/10/22 - 15/10/22	mg/m ³	-	0.005	0.223	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

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Lot ID: 22121097

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Sample Number	22121097-17
Sampled Date	Oct 15, 2022
Sample Description	Air Quality
Location	สถานี 6 บริเวณตลาดหลักสี่ (GPS 47P 0670745, 1505414)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	28.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	15/10/22 - 16/10/22	mg/m ³	-	0.005	0.067	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	15/10/22 - 16/10/22	mg/m ³	-	0.005	0.146	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

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Sample Number	22121097-18
Sampled Date	Oct 16, 2022
Sample Description	Air Quality
Location	สถานี 6 บริเวณตลาดหลักสี่ (GPS 47P 0670745, 1505414)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	26.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	16/10/22 - 17/10/22	mg/m ³	-	0.005	0.073	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	16/10/22 - 17/10/22	mg/m ³	-	0.005	0.148	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

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Sample Number	22121097-19
Sampled Date	Oct 20, 2022
Sample Description	Air Quality
Location	สถานีที่ 7 บริเวณชุมชนการเคหะสองห้อง (GPS 47P 0671694, 1537166)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	20/10/22 - 21/10/22	mg/m ³	-	0.005	0.060	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	20/10/22 - 21/10/22	mg/m ³	-	0.005	0.080	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

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Sample Number	22121097-20
Sampled Date	Oct 21, 2022
Sample Description	Air Quality
Location	สถานีที่ 7 บริเวณชุมชนการเคหะสองห้อง (GPS 47P 0671694, 1537166)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	21/10/22 - 22/10/22	mg/m ³	-	0.005	0.065	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	21/10/22 - 22/10/22	mg/m ³	-	0.005	0.081	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

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Sample Number	22121097-21
Sampled Date	Oct 22, 2022
Sample Description	Air Quality
Location	สถานีที่ 7 บริเวณขบวนรถโดยสารหัวฝั่ง (GPS 47P 0671694, 1537166)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	22/10/22 - 23/10/22	mg/m ³	-	0.005	0.043	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	22/10/22 - 23/10/22	mg/m ³	-	0.005	0.054	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

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19476-21/ EMAIL



Analysis / Test Report



TESTING
No.0009

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

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Sample Number	22121097-22
Sampled Date	Oct 14, 2022
Sample Description	Air Quality
Location	สถานีที่ 8 บริเวณวัดดอนเมือง (GPS 47P 0672925, 1539730)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	14/10/22 - 15/10/22	mg/m ³	-	0.005	0.040	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	14/10/22 - 15/10/22	mg/m ³	-	0.005	0.078	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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Approved by

Saranya C.

Saranya Chalermthamrong
Scientist (4)

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Analysis / Test Report



TESTING
No.0009

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

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Sample Number	22121097-23
Sampled Date	Oct 15, 2022
Sample Description	Air Quality
Location	สถานีที่ 8 บริเวณวัดดอนเมือง (GPS 47P 0672925, 1539730)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	38.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	15/10/22 - 16/10/22	mg/m ³	-	0.005	0.021	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	15/10/22 - 16/10/22	mg/m ³	-	0.005	0.041	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

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Sample Number	22121097-24
Sampled Date	Oct 16, 2022
Sample Description	Air Quality
Location	สถานีที่ 8 บริเวณวัดดอนเมือง (GPS 47P 0672925, 1539730)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	26.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	16/10/22 - 17/10/22	mg/m ³	-	0.005	0.029	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	16/10/22 - 17/10/22	mg/m ³	-	0.005	0.066	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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Project Name :
Project Location :



TESTING
No.0009

Lot ID: 22121097

Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
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Sample Number	22121097-25
Sampled Date	Oct 14, 2022
Sample Description	Air Quality
Location	สถานีที่ 9 บริเวณทางเข้าประตู (GPS 47P 0673431, 1544718)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	14/10/22 - 15/10/22	mg/m ³	-	0.005	0.042	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	14/10/22 - 15/10/22	mg/m ³	-	0.005	0.080	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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Project Location :



TESTING
No.0009

Lot ID: 22121097

Date Received : Oct 24, 2022
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Sample Number	22121097-26
Sampled Date	Oct 15, 2022
Sample Description	Air Quality
Location	สถานีที่ 9 บริเวณทางเข้าประตู (GPS 47P 0673431, 1544718)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	28.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	15/10/22 - 16/10/22	mg/m ³	-	0.005	0.018	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	15/10/22 - 16/10/22	mg/m ³	-	0.005	0.034	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
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TESTING
No.0009

Lot ID: 22121097

Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

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Sample Number	22121097-27
Sampled Date	Oct 16, 2022
Sample Description	Air Quality
Location	สถานีที่ 9 บริเวณทางเข้าประตูรั้ว (GPS 47P 0673431, 1544718)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	26.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	16/10/22 - 17/10/22	mg/m ³	-	0.005	0.035	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	16/10/22 - 17/10/22	mg/m ³	-	0.005	0.073	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
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Sampled By : Teeravut Sukdee

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P/O :
Project Name :
Project Location :



TESTING
No.0009

Lot ID: 22121097

Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

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Sample Number	22121097-28
Sampled Date	Oct 14, 2022
Sample Description	Air Quality
Location	สถานีที่ 10 บริเวณโรงเรียนรัตนโกสินทร์ รังสิต (GPS 47P 0673310, 1547277)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	14/10/22 - 15/10/22	mg/m ³	-	0.005	0.043	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	14/10/22 - 15/10/22	mg/m ³	-	0.005	0.074	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
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Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

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Sample Number	22121097-29
Sampled Date	Oct 15, 2022
Sample Description	Air Quality
Location	สถานีที่ 10 บริเวณโรงเรียนรัตนโกสินทร์ รังสิต (GPS 47P 0673310, 1547277)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	28.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	15/10/22 - 16/10/22	mg/m ³	-	0.005	0.020	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	15/10/22 - 16/10/22	mg/m ³	-	0.005	0.030	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
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P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
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Sample Number	22121097-30
Sampled Date	Oct 16, 2022
Sample Description	Air Quality
Location	สถานีที่ 10 บริเวณโรงเรียนรัตนโกสินทร์ รังสิต (GPS 47P 0673310, 1547277)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	26.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	16/10/22 - 17/10/22	mg/m ³	-	0.005	0.034	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	16/10/22 - 17/10/22	mg/m ³	-	0.005	0.056	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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Approved by

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Saranya Chalermthamrong
Scientist (4)

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P/O : สัญญาเลขที่รฟท.จ.650089

Project Name :

Project Location :

Lot ID: 22139150

Date Received : Nov 16, 2022

Date Reported : Nov 23, 2022

Report Number: 2493597-1

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Sample Description	Air Quality				
Location	สถานีที่ 11 บริเวณหมู่บ้านโสมเพลส (GPS 47P 0672972, 1547425)				
Date Analysis Commenced	Nov 17, 2022				
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag				

Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Particulate Matter (PM-10) (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
22139150-4	Nov 10 - Nov 11, 2022	0.076	0.046	758	32
22139150-5	Nov 11 - Nov 12, 2022	0.093	0.045	758	32
22139150-6	Nov 12 - Nov 13, 2022	0.071	0.044	758	32
Guideline		0.33	0.12	-	-

Reference Method

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

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

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

Sampled By : Teeravut Sukdee

Remark :

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Approved by

Sararat Mongkonjirawut
Supervisor

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Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121097

Date Received : Oct 24, 2022

Date Reported : Nov 02, 2022

Report Number : 2451226-1

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Sample Number	22121097-34				
Sampled Date	Oct 20, 2022				
Sample Description	Air Quality				
Location	สถานีที่ 12 บริเวณอาคารพักอาศัยบนโทรสกาย ประชานิย (GPS 47P 0665944, 1528587)				
Date Analysis Commenced	Oct 26, 2022				
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag				
Barometric Pressure	758 mmHg				
Atmospheric Temperature	30.0 °C				

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	20/10/22 - 21/10/22	mg/m3	-	0.005	0.042	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	20/10/22 - 21/10/22	mg/m3	-	0.005	0.066	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :

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

Sampled By : Teeravut Sukdee

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Approved by

Saranya Chalermtamrong
Scientist (4)

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Analysis / Test Report



TESTING
No.0009

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

Page 29 of 36

Sample Number	22121097-35
Sampled Date	Oct 21, 2022
Sample Description	Air Quality
Location	สถานีที่ 12 บริเวณอาคารฟักค้ายเนโทรสกาย ประชาชน (GPS 47P 0665944, 1528587)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	21/10/22 - 22/10/22	mg/m ³	-	0.005	0.040	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	21/10/22 - 22/10/22	mg/m ³	-	0.005	0.073	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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Approved by

Saranya C.

Saranya Chalermthamrong
Scientist (4)

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Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

Page 30 of 36

Sample Number	22121097-36
Sampled Date	Oct 22, 2022
Sample Description	Air Quality
Location	สถานีที่ 12 บริเวณอาคารฟักค้ายเนโทรสกาย ประชาชน (GPS 47P 0665944, 1528587)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	22/10/22 - 23/10/22	mg/m ³	-	0.005	0.027	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	22/10/22 - 23/10/22	mg/m ³	-	0.005	0.043	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

Page 31 of 36

Sample Number	22121097-37
Sampled Date	Oct 20, 2022
Sample Description	Air Quality
Location	สถานีที่ 13 บริเวณขบวนสีน้เงิน (GPS 47P 0659717, 1525104)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	20/10/22 - 21/10/22	mg/m ³	-	0.005	0.046	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	20/10/22 - 21/10/22	mg/m ³	-	0.005	0.095	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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TESTING
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Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

Page 32 of 36

Sample Number	22121097-38
Sampled Date	Oct 21, 2022
Sample Description	Air Quality
Location	สถานีที่ 13 บริเวณขบวนสีน้เงิน (GPS 47P 0659717, 1525104)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	21/10/22 - 22/10/22	mg/m ³	-	0.005	0.047	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	21/10/22 - 22/10/22	mg/m ³	-	0.005	0.093	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

Page 33 of 36

Sample Number	22121097-39
Sampled Date	Oct 22, 2022
Sample Description	Air Quality
Location	สถานีที่ 13 บริเวณขบวนสีน้เงิน (GPS 47P 0659717, 1525104)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	22/10/22 - 23/10/22	mg/m ³	-	0.005	0.033	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	22/10/22 - 23/10/22	mg/m ³	-	0.005	0.055	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

Page 34 of 36

Sample Number	22121097-40
Sampled Date	Oct 20, 2022
Sample Description	Air Quality
Location	สถานีที่ 14 บริเวณถนนฉิมพลี (GPS 47P 0655246, 1524406)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	20/10/22 - 21/10/22	mg/m ³	-	0.005	0.049	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	20/10/22 - 21/10/22	mg/m ³	-	0.005	0.067	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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Analysis / Test Report



TESTING
No.0009

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

Page 35 of 36

Sample Number	22121097-41
Sampled Date	Oct 21, 2022
Sample Description	Air Quality
Location	สถานีที่ 14 บริเวณถนนจันทน์ (GPS 47P 0655246, 1524406)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	21/10/22 - 22/10/22	mg/m ³	-	0.005	0.037	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	21/10/22 - 22/10/22	mg/m ³	-	0.005	0.062	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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Saranya C.

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Scientist (4)

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Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121097
Date Received : Oct 24, 2022
Date Reported : Nov 02, 2022
Report Number : 2451226-1

Page 36 of 36

Sample Number	22121097-42
Sampled Date	Oct 22, 2022
Sample Description	Air Quality
Location	สถานีที่ 14 บริเวณถนนจันทน์ (GPS 47P 0655246, 1524406)
Date Analysis Commenced	Oct 26, 2022
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag
Barometric Pressure	758 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Particulate matter as PM 10	22/10/22 - 23/10/22	mg/m ³	-	0.005	0.031	0.12	US EPA 40 CFR Part 50, Appendix J	NEB No.24 Bangkok	
Total Suspended Particulate	22/10/22 - 23/10/22	mg/m ³	-	0.005	0.044	0.33	US EPA 40 CFR Part 50, Appendix B	NEB No.24 Bangkok	

Guideline :
NEB No.24 : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004
Sampled By : Teeravut Sukdee

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Saranya C.

Saranya Chalermthamrong
Scientist (4)

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Thailand 10900

P/O : สัญญาเลขที่รฟท.จ.650089

Project Name :

Project Location :

Lot ID: 22141035

Date Received : Nov 28, 2022

Date Reported : Dec 03, 2022

Report Number: 2496957-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 1 บริเวณ บขส.ปิ่นเกล้าไทย (GPS 47P 0666344, 1526532)						
Parameter	Nitrogen dioxide (ppm)						
Measurement Date	Nov 24, 2022 - Nov 27, 2022						
Measurement by	Teeravut Sukdee						
Time	22141035-1 Nov 24, 2022	22141035-2 Nov 25, 2022	22141035-3 Nov 26, 2022	-	-	-	-
10:00 AM - 11:00 AM	0.012	0.020	0.015	-	-	-	-
11:00 AM - 12:00 PM	0.011	0.023	0.018	-	-	-	-
12:00 PM - 01:00 PM	0.012	0.020	0.015	-	-	-	-
01:00 PM - 02:00 PM	0.010	0.019	0.013	-	-	-	-
02:00 PM - 03:00 PM	0.011	0.019	0.014	-	-	-	-
03:00 PM - 04:00 PM	0.010	0.024	0.017	-	-	-	-
04:00 PM - 05:00 PM	0.010	0.025	0.014	-	-	-	-
05:00 PM - 06:00 PM	0.015	0.027	0.016	-	-	-	-
06:00 PM - 07:00 PM	0.016	0.023	0.016	-	-	-	-
07:00 PM - 08:00 PM	0.013	0.019	0.014	-	-	-	-
08:00 PM - 09:00 PM	0.014	0.020	0.014	-	-	-	-
09:00 PM - 10:00 PM	0.016	0.022	0.012	-	-	-	-
10:00 PM - 11:00 PM	0.017	0.022	0.009	-	-	-	-
11:00 PM - 12:00 AM	0.018	0.024	0.009	-	-	-	-
12:00 AM - 01:00 AM	0.017	0.017	0.014	-	-	-	-
01:00 AM - 02:00 AM	0.015	0.011	0.016	-	-	-	-
02:00 AM - 03:00 AM	0.014	0.012	0.023	-	-	-	-
03:00 AM - 04:00 AM	0.019	0.014	0.021	-	-	-	-
04:00 AM - 05:00 AM	0.020	0.013	0.018	-	-	-	-
05:00 AM - 06:00 AM	0.016	0.010	0.022	-	-	-	-
06:00 AM - 07:00 AM	0.021	0.011	0.021	-	-	-	-
07:00 AM - 08:00 AM	0.023	0.009	0.016	-	-	-	-
08:00 AM - 09:00 AM	0.024	0.010	0.015	-	-	-	-
09:00 AM - 10:00 AM	0.020	0.014	0.012	-	-	-	-
Average	0.016	0.018	0.016	-	-	-	-
1hr - Maximum	0.024	0.027	0.023	-	-	-	-
Standard 1hr - Average	0.170	0.170	0.170	-	-	-	-

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

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

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Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121096

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477757-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 2 บริเวณนิคมรถไฟ กม.11 (GPS 47P 0667277, 1528806)						
Parameter	Nitrogen dioxide (ppm)						
Measurement Date	Oct 06, 2022 - Oct 09, 2022						
Measurement by	Teeravut Sukdee						
Time	22121096-4 Oct 06, 2022	22121096-5 Oct 07, 2022	22121096-6 Oct 08, 2022	-	-	-	-
09:00 AM - 10:00 AM	0.005	0.005	0.005	-	-	-	-
10:00 AM - 11:00 AM	0.005	0.005	0.005	-	-	-	-
11:00 AM - 12:00 PM	0.005	0.005	0.005	-	-	-	-
12:00 PM - 01:00 PM	0.005	0.005	0.005	-	-	-	-
01:00 PM - 02:00 PM	0.005	0.005	0.005	-	-	-	-
02:00 PM - 03:00 PM	0.005	0.005	0.005	-	-	-	-
03:00 PM - 04:00 PM	0.005	0.005	0.005	-	-	-	-
04:00 PM - 05:00 PM	0.005	0.005	0.005	-	-	-	-
05:00 PM - 06:00 PM	0.005	0.005	0.005	-	-	-	-
06:00 PM - 07:00 PM	0.005	0.005	0.005	-	-	-	-
07:00 PM - 08:00 PM	0.005	0.005	0.005	-	-	-	-
08:00 PM - 09:00 PM	0.005	0.005	0.005	-	-	-	-
09:00 PM - 10:00 PM	0.005	0.005	0.005	-	-	-	-
10:00 PM - 11:00 PM	0.005	0.005	0.005	-	-	-	-
11:00 PM - 12:00 AM	0.005	0.005	0.005	-	-	-	-
12:00 AM - 01:00 AM	0.005	0.005	0.005	-	-	-	-
01:00 AM - 02:00 AM	0.005	0.005	0.005	-	-	-	-
02:00 AM - 03:00 AM	0.005	0.005	0.005	-	-	-	-
03:00 AM - 04:00 AM	0.005	0.005	0.005	-	-	-	-
04:00 AM - 05:00 AM	0.005	0.005	0.005	-	-	-	-
05:00 AM - 06:00 AM	0.005	0.005	0.005	-	-	-	-
06:00 AM - 07:00 AM	0.005	0.005	0.005	-	-	-	-
07:00 AM - 08:00 AM	0.005	0.005	0.005	-	-	-	-
08:00 AM - 09:00 AM	0.005	0.004	0.005	-	-	-	-
Average	0.005	0.005	0.005	-	-	-	-
1hr - Maximum	0.005	0.005	0.005	-	-	-	-
Standard 1hr - Average	0.170	0.170	0.170	-	-	-	-

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

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

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S:\Reports_Air SOxNOx.rpt (4:10PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121096

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 247775-N

Page 1 of 1

Sample Description	Air (quality						
Location	สถานีที่ 6 บริเวณวัดเสมียนนารี (GPS 47P 0)) - 209, 15605) 1x						
Parameter	nitrogen dioxide (ppm)						
Measurement Date	Oct 0), 2022 NOct 09, 2022						
Measurement by	Teeravut Sukdee						
Time	2212109)N	2212109)N	2212109)N	N	N	N	N
	Oct 0), 2022	Oct 07, 2022	Oct 0-, 2022	N	N	N	N
10:00 A3 N11:00 A3	0.061	0.06)	0.027	N	N	N	N
11:00 A3 N12:00 P3	0.060	0.06)	0.02)	N	N	N	N
12:00 P3 N01:00 P3	0.060	0.069	0.025	N	N	N	N
01:00 P3 N02:00 P3	0.06-	0.069	0.025	N	N	N	N
02:00 P3 N06:00 P3	0.060	0.017	0.025	N	N	N	N
06:00 P3 N04:00 P3	0.020	0.069	0.026	N	N	N	N
04:00 P3 N05:00 P3	0.020	0.042	0.029	N	N	N	N
05:00 P3 N0):00 P3	0.019	0.067	0.02)	N	N	N	N
0):00 P3 N07:00 P3	0.019	0.06)	0.02)	N	N	N	N
07:00 P3 N0-:00 P3	0.061	0.06)	0.02)	N	N	N	N
0-:00 P3 N09:00 P3	0.024	0.06)	0.025	N	N	N	N
09:00 P3 N10:00 P3	0.025	0.065	0.025	N	N	N	N
10:00 P3 N11:00 P3	0.02-	0.064	0.024	N	N	N	N
11:00 P3 N12:00 A3	0.060	0.062	0.024	N	N	N	N
12:00 A3 N01:00 A3	0.061	0.046	0.024	N	N	N	N
01:00 A3 N02:00 A3	0.066	0.027	0.054	N	N	N	N
02:00 A3 N06:00 A3	0.065	0.02-	0.029	N	N	N	N
06:00 A3 N04:00 A3	0.05)	0.027	0.027	N	N	N	N
04:00 A3 N05:00 A3	0.029	0.027	0.027	N	N	N	N
05:00 A3 N0):00 A3	0.021	0.02)	0.02)	N	N	N	N
0):00 A3 N07:00 A3	0.06-	0.02)	0.025	N	N	N	N
07:00 A3 N0-:00 A3	0.065	0.025	0.024	N	N	N	N
0-:00 A3 N09:00 A3	0.065	0.025	0.024	N	N	N	N
09:00 A3 N10:00 A3	0.06)	0.029	0.026	N	N	N	N
Average	0.060	0.062	0.027	N	N	N	N
1hr N3 aMum	0.05)	0.046	0.054	N	N	N	N
Standard 1hr NAverage	0.170	0.170	0.170	N	N	N	N

Standard : botification of the bational Environment Board bo. 66, 2009 B.E. 2552x

Reference 3 ethod : US EPA3 ethod Part 50 App. F 8Chemiluminescex

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121096

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477759-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 4 บริเวณโรงเรียนอนุบาลฉะเชิงเทรา (GPS 47P 0556994, 18) 2102x						
Parameter	Nitrogen dioxide (ppm)						
Measurement Date	Oct 05, 2022 - Oct 10, 2022						
Measurement by	Teeravut Sukdee						
Time	22121095-10	22121095-11	22121095-12	-	-	-	-
	Oct 05, 2022	Oct 06, 2022	Oct 09, 2022	-	-	-	-
11:00 A3 - 12:00 P3	0.005	0.022	0.01)	-	-	-	-
12:00 P3 - 01:00 P3	0.020	0.024	0.018	-	-	-	-
01:00 P3 - 02:00 P3	0.012	0.0)8	0.0)1	-	-	-	-
02:00 P3 - 0):00 P3	0.01)	0.0)8	0.0)7	-	-	-	-
0):00 P3 - 04:00 P3	0.017	0.029	0.0)0	-	-	-	-
04:00 P3 - 08:00 P3	0.018	0.020	0.02)	-	-	-	-
08:00 P3 - 05:00 P3	0.017	0.020	0.022	-	-	-	-
05:00 P3 - 07:00 P3	0.022	0.016	0.025	-	-	-	-
07:00 P3 - 06:00 P3	0.022	0.015	0.027	-	-	-	-
06:00 P3 - 09:00 P3	0.022	0.015	0.029	-	-	-	-
09:00 P3 - 10:00 P3	0.016	0.015	0.02)	-	-	-	-
10:00 P3 - 11:00 P3	0.01)	0.014	0.016	-	-	-	-
11:00 P3 - 12:00 A3	0.01)	0.01)	0.015	-	-	-	-
12:00 A3 - 01:00 A3	0.018	0.012	0.012	-	-	-	-
01:00 A3 - 02:00 A3	0.015	0.011	0.010	-	-	-	-
02:00 A3 - 0):00 A3	0.017	0.010	0.009	-	-	-	-
0):00 A3 - 04:00 A3	0.017	0.009	0.011	-	-	-	-
04:00 A3 - 08:00 A3	0.018	0.006	0.011	-	-	-	-
08:00 A3 - 05:00 A3	0.015	0.006	0.009	-	-	-	-
05:00 A3 - 07:00 A3	0.015	0.006	0.006	-	-	-	-
07:00 A3 - 06:00 A3	0.017	0.006	0.012	-	-	-	-
06:00 A3 - 09:00 A3	0.017	0.006	0.012	-	-	-	-
09:00 A3 - 10:00 A3	0.015	0.006	0.01)	-	-	-	-
10:00 A3 - 11:00 A3	0.015	0.011	0.010	-	-	-	-
Average	0.015	0.015	0.016	-	-	-	-
1hr - 3 aMum	0.022	0.0)8	0.0)7	-	-	-	-
Standard 1hr - Average	0.170	0.170	0.170	-	-	-	-

Standard : Notification of the National Environment Board No.)) , 2009 (B.E. 2882x

Reference 3 ethod : US EPA3 ethod Part 80 App. F (Chemiluminescex

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Analysis / Test Report

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Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121096
Date Received : Oct 24, 2022
Date Reported : Oct 29, 2022
Report Number: 247775-1

Page 1 of 1

Sample Description	Air (quality							
Location	สถานีที่ 6 บริเวณโรงเรียนบางเขน 8GPS 47P 0559429, 16) 2940x							
Parameter	Nitrogen dioxide (ppm)							
Measurement Date	Oct 05, 2022 NOct 09, 2022							
Measurement by	Teeravut Sukdee							
Time	22121095N)	22121095N4	22121095N6	N	N	N	N	N
12:00 P3 N01:00 P3	0.00-	0.010	0.00-	N	N	N	N	N
01:00 P3 N02:00 P3	0.005	0.010	0.00-	N	N	N	N	N
02:00 P3 N03:00 P3	0.007	0.011	0.009	N	N	N	N	N
03:00 P3 N04:00 P3	0.007	0.00-	0.00-	N	N	N	N	N
04:00 P3 N05:00 P3	0.006	0.007	0.009	N	N	N	N	N
05:00 P3 N06:00 P3	0.005	0.00-	0.009	N	N	N	N	N
06:00 P3 N07:00 P3	0.00-	0.007	0.010	N	N	N	N	N
07:00 P3 N08:00 P3	0.00-	0.005	0.010	N	N	N	N	N
08:00 P3 N09:00 P3	0.00-	0.005	0.009	N	N	N	N	N
09:00 P3 N10:00 P3	0.007	0.006	0.007	N	N	N	N	N
10:00 P3 N11:00 P3	0.005	0.004	0.007	N	N	N	N	N
11:00 P3 N12:00 A3	0.005	0.004	0.006	N	N	N	N	N
12:00 A3 N01:00 A3	0.005	0.004	0.005	N	N	N	N	N
01:00 A3 N02:00 A3	0.005	0.004	0.004	N	N	N	N	N
02:00 A3 N03:00 A3	0.005	0.004	0.004	N	N	N	N	N
03:00 A3 N04:00 A3	0.005	0.004	0.004	N	N	N	N	N
04:00 A3 N05:00 A3	0.005	0.004	0.004	N	N	N	N	N
05:00 A3 N06:00 A3	0.005	0.004	0.004	N	N	N	N	N
06:00 A3 N07:00 A3	0.005	0.004	0.004	N	N	N	N	N
07:00 A3 N08:00 A3	0.007	0.004	0.006	N	N	N	N	N
08:00 A3 N09:00 A3	0.007	0.005	0.006	N	N	N	N	N
09:00 A3 N10:00 A3	0.007	0.006	0.005	N	N	N	N	N
10:00 A3 N11:00 A3	0.00-	0.005	0.005	N	N	N	N	N
11:00 A3 N12:00 P3	0.011	0.007	0.006	N	N	N	N	N
Average	0.007	0.005	0.005	N	N	N	N	N
1hr N3 aMum	0.011	0.011	0.010	N	N	N	N	N
Standard 1hr NAverage	0.170	0.170	0.170	N	N	N	N	N

Standard : Notification of the National Environment Board No. 33, 2009 (B.E. 2662).
Reference Method : US EPA Method Part 60 App. F (Chemiluminescence)

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Analysis / Test Report

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Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121096
Date Received : Oct 24, 2022
Date Reported : Oct 29, 2022
Report Number: 247775-1

Page 1 of 1

Sample Description	Air Quality							
Location	สถานีที่ 5 บริเวณตลาดหลักสี่ (GPS 47P 0570746, 16064148							
Parameter	Nitrogen dioxide (ppm)							
Measurement Date	Oct 14, 2022 - Oct 17, 2022							
Measurement by	Teeravut Sukdee							
Time	22121095-15	22121095-17	22121095-1x	-	-	-	-	-
09:00 AM - 10:00 AM	0.010	0.040	0.024	-	-	-	-	-
10:00 AM - 11:00 AM	0.012	0.044	0.023	-	-	-	-	-
11:00 AM - 12:00 PM	0.011	0.049	0.025	-	-	-	-	-
12:00 PM - 01:00 PM	0.013	0.043	0.034	-	-	-	-	-
01:00 PM - 02:00 PM	0.012	0.037	0.033	-	-	-	-	-
02:00 PM - 03:00 PM	0.012	0.033	0.033	-	-	-	-	-
03:00 PM - 04:00 PM	0.022	0.037	0.02x	-	-	-	-	-
04:00 PM - 05:00 PM	0.022	0.040	0.036	-	-	-	-	-
05:00 PM - 06:00 PM	0.024	0.039	0.033	-	-	-	-	-
06:00 PM - 07:00 PM	0.035	0.030	0.02x	-	-	-	-	-
07:00 PM - 08:00 PM	0.041	0.024	0.026	-	-	-	-	-
08:00 PM - 09:00 PM	0.03x	0.024	0.024	-	-	-	-	-
09:00 PM - 10:00 PM	0.035	0.022	0.017	-	-	-	-	-
10:00 PM - 11:00 PM	0.033	0.016	0.016	-	-	-	-	-
11:00 PM - 12:00 AM	0.036	0.015	0.012	-	-	-	-	-
12:00 AM - 01:00 AM	0.027	0.016	0.010	-	-	-	-	-
01:00 AM - 02:00 AM	0.027	0.016	0.010	-	-	-	-	-
02:00 AM - 03:00 AM	0.031	0.016	0.009	-	-	-	-	-
03:00 AM - 04:00 AM	0.025	0.015	0.00x	-	-	-	-	-
04:00 AM - 05:00 AM	0.023	0.014	0.010	-	-	-	-	-
05:00 AM - 06:00 AM	0.030	0.022	0.012	-	-	-	-	-
06:00 AM - 07:00 AM	0.030	0.023	0.015	-	-	-	-	-
07:00 AM - 08:00 AM	0.031	0.020	0.015	-	-	-	-	-
08:00 AM - 09:00 AM	0.034	0.022	0.021	-	-	-	-	-
Average	0.025	0.027	0.021	-	-	-	-	-
1hr - Maximum	0.041	0.049	0.036	-	-	-	-	-
Standard 1hr - Average	0.170	0.170	0.170	-	-	-	-	-

Standard : Notification of the National Environment Board No. 33, 2009 (B.E. 2662).
Reference Method : US EPA Method Part 60 App. F (Chemiluminescence)

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121096

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477755-1

Page 1 of 1

Sample Description Air Quality
Location สถานีที่ 7 บริเวณขบวนรถเคหะหลวงสองห้อง (GPS 47P 0571594, 1687155)
Parameter Nitrogen dioxide (ppm)
Measurement Date Oct 20, 2022 - Oct 28, 2022
Measurement by Teeravut Sukdee

Time	22121095-19 Oct 20, 2022	22121095-20 Oct 21, 2022	22121095-21 Oct 22, 2022	-	-	-	-
01:00 PM - 02:00 PM	0.024	0.045	0.089	-	-	-	-
02:00 PM - 08:00 PM	0.022	0.015	0.041	-	-	-	-
08:00 PM - 04:00 PM	0.021	0.014	0.048	-	-	-	-
04:00 PM - 06:00 PM	0.020	0.013	0.041	-	-	-	-
06:00 PM - 05:00 PM	0.021	0.081	0.044	-	-	-	-
05:00 PM - 07:00 PM	0.021	0.024	0.016	-	-	-	-
07:00 PM - 03:00 PM	0.021	0.022	0.016	-	-	-	-
03:00 PM - 09:00 PM	0.022	0.020	0.028	-	-	-	-
09:00 PM - 10:00 PM	0.023	0.024	0.080	-	-	-	-
10:00 PM - 11:00 PM	0.027	0.026	0.024	-	-	-	-
11:00 PM - 12:00 AM	0.025	0.021	0.025	-	-	-	-
12:00 AM - 01:00 AM	0.027	0.021	0.017	-	-	-	-
01:00 AM - 02:00 AM	0.021	0.021	0.003	-	-	-	-
02:00 AM - 08:00 AM	0.019	0.020	0.009	-	-	-	-
08:00 AM - 04:00 AM	0.022	0.017	0.011	-	-	-	-
04:00 AM - 06:00 AM	0.019	0.012	0.012	-	-	-	-
06:00 AM - 05:00 AM	0.020	0.014	0.012	-	-	-	-
05:00 AM - 07:00 AM	0.083	0.018	0.012	-	-	-	-
07:00 AM - 03:00 AM	0.089	0.014	0.010	-	-	-	-
03:00 AM - 09:00 AM	0.013	0.014	0.014	-	-	-	-
09:00 AM - 10:00 AM	0.028	0.016	0.016	-	-	-	-
10:00 AM - 11:00 AM	0.082	0.021	0.020	-	-	-	-
11:00 AM - 12:00 PM	0.040	0.022	0.019	-	-	-	-
12:00 PM - 01:00 PM	0.040	0.088	0.081	-	-	-	-
Average	0.025	0.021	0.022	-	-	-	-
1hr - Maximum	0.040	0.045	0.044	-	-	-	-
Standard 1hr - Average	0.170	0.170	0.170	-	-	-	-

Standard : Notification of the National Environment Board No. 88, 2009 (B.E. 2662).

Reference Method : US EPA Method Part 60 App. F (Chemiluminescence)

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121096

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477755-N

Page 1 of 1

Sample Description Air (uality)
Location สถานีที่ 6 บริเวณวัดดอนเมือง 8GPS 47P 057292-, 1-)97)0x
Parameter Nitrogen dioxide (ppm)
Measurement Date Oct 14, 2022 NOct 17, 2022
Measurement by Teeravut Sukdee

Time	22121095N2 Oct 14, 2022	22121095N2 Oct 1-, 2022	22121095N4 Oct 15, 2022	N	N	N	N
10:00 A3 N11:00 A3	0.005	0.006	0.009	N	N	N	N
11:00 A3 N12:00 P3	0.009	0.007	0.006	N	N	N	N
12:00 P3 N01:00 P3	0.010	0.005	0.006	N	N	N	N
01:00 P3 N02:00 P3	0.006	0.005	0.007	N	N	N	N
02:00 P3 N03:00 P3	0.009	0.009	0.007	N	N	N	N
03:00 P3 N04:00 P3	0.006	0.005	0.007	N	N	N	N
04:00 P3 N05:00 P3	0.007	0.005	0.009	N	N	N	N
05:00 P3 N06:00 P3	0.007	0.007	0.006	N	N	N	N
06:00 P3 N07:00 P3	0.010	0.005	0.010	N	N	N	N
07:00 P3 N08:00 P3	0.006	0.005	0.006	N	N	N	N
08:00 P3 N09:00 P3	0.007	0.005	0.007	N	N	N	N
09:00 P3 N10:00 P3	0.006	0.005	0.005	N	N	N	N
10:00 P3 N11:00 P3	0.006	0.005	0.006	N	N	N	N
11:00 P3 N12:00 A3	0.007	0.009	0.007	N	N	N	N
12:00 A3 N01:00 A3	0.006	0.011	0.010	N	N	N	N
01:00 A3 N02:00 A3	0.007	0.011	0.010	N	N	N	N
02:00 A3 N03:00 A3	0.009	0.010	0.009	N	N	N	N
03:00 A3 N04:00 A3	0.009	0.009	0.007	N	N	N	N
04:00 A3 N05:00 A3	0.006	0.006	0.006	N	N	N	N
05:00 A3 N06:00 A3	0.007	0.012	0.005	N	N	N	N
06:00 A3 N07:00 A3	0.007	0.007	0.007	N	N	N	N
07:00 A3 N08:00 A3	0.005	0.007	0.006	N	N	N	N
08:00 A3 N09:00 A3	0.009	0.005	0.006	N	N	N	N
09:00 A3 N10:00 A3	0.009	0.007	0.011	N	N	N	N
Average	0.006	0.006	0.006	N	N	N	N
1hr N3 aMnum	0.010	0.012	0.011	N	N	N	N
Standard 1hr NAverage	0.170	0.170	0.170	N	N	N	N

Standard : Notification of the National Environment Board No. 88, 2009 (B.E. 2662).

Reference Method : US EPA Method Part 60 App. F (Chemiluminescence)

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121096
Date Received : Oct 24, 2022
Date Reported : Oct 29, 2022
Report Number: 2477754-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 9 บริเวณหมู่บ้านปรีชา (GPS 47P 0576461, 184471)x						
Parameter	Nitrogen dioxide (ppm)						
Measurement Date	Oct 14, 2022 - Oct 17, 2022						
Measurement by	Teeravut Sukdee						
Time	22121095-28 Oct 14, 2022	22121095-25 Oct 18, 2022	22121095-27 Oct 15, 2022	-	-	-	-
11:00 A3 - 12:00 P3	0.007	0.017	0.016	-	-	-	-
12:00 P3 - 01:00 P3	0.008	0.011	0.011	-	-	-	-
01:00 P3 - 02:00 P3	0.008	0.000	0.012	-	-	-	-
02:00 P3 - 06:00 P3	0.005	0.000	0.010	-	-	-	-
06:00 P3 - 04:00 P3	0.005	0.009	0.016	-	-	-	-
04:00 P3 - 08:00 P3	0.007	0.010	0.019	-	-	-	-
08:00 P3 - 05:00 P3	0.007	0.012	0.020	-	-	-	-
05:00 P3 - 07:00 P3	0.012	0.011	0.022	-	-	-	-
07:00 P3 - 09:00 P3	0.015	0.018	0.010	-	-	-	-
09:00 P3 - 10:00 P3	0.026	0.018	0.015	-	-	-	-
10:00 P3 - 11:00 P3	0.020	0.018	0.010	-	-	-	-
11:00 P3 - 12:00 A3	0.010	0.012	0.016	-	-	-	-
12:00 A3 - 01:00 A3	0.015	0.012	0.011	-	-	-	-
01:00 A3 - 02:00 A3	0.012	0.011	0.010	-	-	-	-
02:00 A3 - 06:00 A3	0.014	0.011	0.009	-	-	-	-
06:00 A3 - 04:00 A3	0.019	0.016	0.000	-	-	-	-
04:00 A3 - 08:00 A3	0.017	0.009	0.000	-	-	-	-
08:00 A3 - 05:00 A3	0.014	0.009	0.000	-	-	-	-
05:00 A3 - 07:00 A3	0.015	0.012	0.012	-	-	-	-
07:00 A3 - 09:00 A3	0.019	0.011	0.012	-	-	-	-
09:00 A3 - 10:00 A3	0.024	0.012	0.016	-	-	-	-
10:00 A3 - 11:00 A3	0.028	0.012	0.015	-	-	-	-
Average	0.027	0.016	0.022	-	-	-	-
1hr - 3aMum	0.026	0.014	0.024	-	-	-	-
Standard 1hr - Average	0.018	0.012	0.014	-	-	-	-

Standard : Notification of the National Environment Board No. 66, 2009 (B.E. 2882x)
Reference 3 ethod : US EPA3 ethod Part 80 App. F (Chemiluminescence)

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121096
Date Received : Oct 24, 2022
Date Reported : Oct 29, 2022
Report Number: 247775- N

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 10 บริเวณโรงเรียนรัตนโกสินทร์ รังสิต GPS 47P 057--10, 1847277)						
Parameter	Nitrogen dioxide (ppm)						
Measurement Date	Oct 14, 2022 NOct 17, 2022						
Measurement by	Teeravut Sukdee						
Time	22121095N28M Oct 14, 2022	22121095N29 Oct 18, 2022	22121095N0 Oct 15, 2022	N	N	N	N
12:00 P3 N01:00 P3	0.01M	0.01M	0.01-	N	N	N	N
01:00 P3 N02:00 P3	0.019	0.01M	0.01-	N	N	N	N
02:00 P3 N03:00 P3	0.019	0.01M	0.012	N	N	N	N
03:00 P3 N04:00 P3	0.019	0.01M	0.01M	N	N	N	N
04:00 P3 N08:00 P3	0.019	0.017	0.02-	N	N	N	N
08:00 P3 N05:00 P3	0.019	0.017	0.020	N	N	N	N
05:00 P3 N07:00 P3	0.019	0.017	0.024	N	N	N	N
07:00 P3 N0M00 P3	0.019	0.017	0.019	N	N	N	N
0M00 P3 N09:00 P3	0.019	0.017	0.017	N	N	N	N
09:00 P3 N10:00 P3	0.01M	0.015	0.017	N	N	N	N
10:00 P3 N11:00 P3	0.01M	0.015	0.01-	N	N	N	N
11:00 P3 N12:00 A3	0.01M	0.018	0.012	N	N	N	N
12:00 A3 N01:00 A3	0.01M	0.018	0.014	N	N	N	N
01:00 A3 N02:00 A3	0.017	0.018	0.01-	N	N	N	N
02:00 A3 N03:00 A3	0.017	0.018	0.012	N	N	N	N
03:00 A3 N04:00 A3	0.017	0.018	0.012	N	N	N	N
04:00 A3 N08:00 A3	0.017	0.018	0.01-	N	N	N	N
08:00 A3 N05:00 A3	0.017	0.018	0.01-	N	N	N	N
05:00 A3 N07:00 A3	0.017	0.018	0.01-	N	N	N	N
07:00 A3 N0M00 A3	0.017	0.018	0.014	N	N	N	N
0M00 A3 N09:00 A3	0.01M	0.018	0.019	N	N	N	N
09:00 A3 N10:00 A3	0.01M	0.018	0.022	N	N	N	N
10:00 A3 N11:00 A3	0.01M	0.018	0.027	N	N	N	N
11:00 A3 N12:00 P3	0.01M	0.018	0.027	N	N	N	N
Average	0.01M	0.015	0.017	N	N	N	N
1hr N3 aximum	0.019	0.01M	0.027	N	N	N	N
Standard 1hr NAverage	0.170	0.170	0.170	N	N	N	N

Standard : Notification of the National Environment Board No. 66, 2009 (B.E. 2882).
Reference 3 ethod : US EPA3 ethod Part 80 App. F (Chemiluminescence)

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O : สัญญาเลขที่รฟท.จ.650089

Project Name :

Project Location :

Lot ID: 22133462

Date Received : Nov 16, 2022

Date Reported : Nov 21, 2022

Report Number: 2497717-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 11 บริเวณถนนพหลโยธินเพลส (GPS 47P 0672972, 1547425)						
Parameter	Nitrogen dioxide (ppm)						
Measurement Date	Nov 10, 2022 - Nov 13, 2022						
Measurement by	Teeravut Sukdee						
Time	22133462-4 Nov 10, 2022	22133462-5 Nov 11, 2022	22133462-6 Nov 12, 2022	-	-	-	-
10:00 AM - 11:00 AM	0.007	0.016	0.016	-	-	-	-
11:00 AM - 12:00 PM	0.007	0.014	0.011	-	-	-	-
12:00 PM - 01:00 PM	0.014	0.011	0.010	-	-	-	-
01:00 PM - 02:00 PM	0.010	0.013	0.008	-	-	-	-
02:00 PM - 03:00 PM	0.009	0.009	0.010	-	-	-	-
03:00 PM - 04:00 PM	0.009	0.010	0.007	-	-	-	-
04:00 PM - 05:00 PM	0.009	0.008	0.006	-	-	-	-
05:00 PM - 06:00 PM	0.008	0.008	0.006	-	-	-	-
06:00 PM - 07:00 PM	0.010	0.013	0.010	-	-	-	-
07:00 PM - 08:00 PM	0.014	0.018	0.009	-	-	-	-
08:00 PM - 09:00 PM	0.015	0.026	0.011	-	-	-	-
09:00 PM - 10:00 PM	0.015	0.024	0.013	-	-	-	-
10:00 PM - 11:00 PM	0.014	0.024	0.016	-	-	-	-
11:00 PM - 12:00 AM	0.013	0.022	0.010	-	-	-	-
12:00 AM - 01:00 AM	0.010	0.012	0.012	-	-	-	-
01:00 AM - 02:00 AM	0.009	0.009	0.010	-	-	-	-
02:00 AM - 03:00 AM	0.010	0.009	0.008	-	-	-	-
03:00 AM - 04:00 AM	0.009	0.009	0.008	-	-	-	-
04:00 AM - 05:00 AM	0.008	0.008	0.011	-	-	-	-
05:00 AM - 06:00 AM	0.008	0.009	0.013	-	-	-	-
06:00 AM - 07:00 AM	0.009	0.011	0.016	-	-	-	-
07:00 AM - 08:00 AM	0.012	0.013	0.015	-	-	-	-
08:00 AM - 09:00 AM	0.013	0.015	0.017	-	-	-	-
09:00 AM - 10:00 AM	0.015	0.017	0.018	-	-	-	-
Average	0.011	0.014	0.011	-	-	-	-
1hr - Maximum	0.015	0.026	0.018	-	-	-	-
Standard 1hr - Average	0.170	0.170	0.170	-	-	-	-

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

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

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121096

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477751-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 12 บริเวณอาคารพิทักษ์นิเทศวิทยุ ประชาชน (GPS 47P 0556944, 1628687)						
Parameter	Nitrogen dioxide (ppm)						
Measurement Date	Oct 20, 2022 - Oct 24, 2022						
Measurement by	Teeravut Sukdee						
Time	22121095-M4 Oct 20, 2022	22121095-M6 Oct 21, 2022	22121095-M6 Oct 22, 2022	-	-	-	-
12:00 P3 - 01:00 P3	0.040	0.0M6	0.028	-	-	-	-
01:00 P3 - 02:00 P3	0.047	0.0M6	0.025	-	-	-	-
02:00 P3 - 03:00 P3	0.06M	0.0M7	0.024	-	-	-	-
03:00 P3 - 04:00 P3	0.062	0.0M6	0.029	-	-	-	-
04:00 P3 - 05:00 P3	0.049	0.0M6	0.0MM	-	-	-	-
05:00 P3 - 06:00 P3	0.060	0.0M2	0.0M7	-	-	-	-
06:00 P3 - 07:00 P3	0.049	0.0M1	0.0MM	-	-	-	-
07:00 P3 - 08:00 P3	0.046	0.028	0.029	-	-	-	-
08:00 P3 - 09:00 P3	0.041	0.027	0.022	-	-	-	-
09:00 P3 - 10:00 P3	0.0M8	0.024	0.016	-	-	-	-
10:00 P3 - 11:00 P3	0.0M1	0.02M	0.015	-	-	-	-
11:00 P3 - 12:00 A3	0.0M0	0.02M	0.014	-	-	-	-
12:00 A3 - 01:00 A3	0.0M0	0.022	0.014	-	-	-	-
01:00 A3 - 02:00 A3	0.029	0.019	0.01M	-	-	-	-
02:00 A3 - 03:00 A3	0.0M0	0.018	0.012	-	-	-	-
03:00 A3 - 04:00 A3	0.0MM	0.017	0.012	-	-	-	-
04:00 A3 - 05:00 A3	0.0MM	0.015	0.012	-	-	-	-
05:00 A3 - 06:00 A3	0.0M1	0.016	0.014	-	-	-	-
06:00 A3 - 07:00 A3	0.0M4	0.016	0.014	-	-	-	-
07:00 A3 - 08:00 A3	0.0M5	0.018	0.016	-	-	-	-
08:00 A3 - 09:00 A3	0.0M6	0.022	0.01M	-	-	-	-
09:00 A3 - 10:00 A3	0.0M2	0.022	0.012	-	-	-	-
10:00 A3 - 11:00 A3	0.0M0	0.025	0.01M	-	-	-	-
11:00 A3 - 12:00 P3	0.0M6	0.028	0.015	-	-	-	-
Average	0.0M6	0.026	0.020	-	-	-	-
1hr - Maximum	0.06M	0.0M7	0.0M7	-	-	-	-
Standard 1hr - Average	0.170	0.170	0.170	-	-	-	-

Standard : Notification of the National Environment Board No. 1M, 2009 (B.E. 2662).

Reference Method : US EPA3 ethod Part 60 App. F (Chemiluminescence)

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121096

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477750-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 1(บริเวณขบวนรถ 6GPS 47P 0589717, 1828104)						
Parameter	Nitrogen dioxide (ppm)						
Measurement Date	Oct 20, 2022 - Oct 21, 2022						
Measurement by	Teeravut Sukdee						
Time	22121095-(7 Oct 20, 2022	22121095-(M Oct 21, 2022	22121095-(9 Oct 22, 2022	-	-	-	-
11:00 A3 - 12:00 P3	0.012	0.02M	0.029	-	-	-	-
12:00 P3 - 01:00 P3	0.011	0.0(0	0.025	-	-	-	-
01:00 P3 - 02:00 P3	0.010	0.02M	0.020	-	-	-	-
02:00 P3 - 0(:00 P3	0.020	0.0(7	0.01M	-	-	-	-
0(:00 P3 - 04:00 P3	0.015	0.028	0.017	-	-	-	-
04:00 P3 - 08:00 P3	0.019	0.0(2	0.019	-	-	-	-
08:00 P3 - 05:00 P3	0.01M	0.04M	0.014	-	-	-	-
05:00 P3 - 07:00 P3	0.01(	0.054	0.019	-	-	-	-
07:00 P3 - 0M00 P3	0.01M	0.081	0.04M	-	-	-	-
0M00 P3 - 09:00 P3	0.022	0.081	0.080	-	-	-	-
09:00 P3 - 10:00 P3	0.048	0.048	0.082	-	-	-	-
10:00 P3 - 11:00 P3	0.049	0.045	0.040	-	-	-	-
11:00 P3 - 12:00 A3	0.040	0.0(M	0.0(0	-	-	-	-
12:00 A3 - 01:00 A3	0.0(1	0.0(2	0.022	-	-	-	-
01:00 A3 - 02:00 A3	0.0(1	0.0(2	0.015	-	-	-	-
02:00 A3 - 0(:00 A3	0.012	0.0(0	0.015	-	-	-	-
0(:00 A3 - 04:00 A3	0.010	0.020	0.012	-	-	-	-
04:00 A3 - 08:00 A3	0.009	0.01M	0.014	-	-	-	-
08:00 A3 - 05:00 A3	0.011	0.018	0.014	-	-	-	-
05:00 A3 - 07:00 A3	0.011	0.017	0.01(-	-	-	-
07:00 A3 - 0M00 A3	0.024	0.019	0.014	-	-	-	-
0M00 A3 - 09:00 A3	0.041	0.02(	0.01M	-	-	-	-
09:00 A3 - 10:00 A3	0.04M	0.0(0	0.01M	-	-	-	-
10:00 A3 - 11:00 A3	0.040	0.0(1	0.020	-	-	-	-
Average	0.02(	0.0(	0.02(-	-	-	-
1hr - 3 aximum	0.049	0.054	0.082	-	-	-	-
Standard 1hr - Average	0.170	0.170	0.170	-	-	-	-

Standard : Notification of the National Environment Board No. ((, 2009 B.E. 2882).

Reference 3 ethod : US EPA3 ethod Part 80 App. F 6Chemiluminescence)

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121096

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477759-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 14 บริเวณถนนจันทน์ (GPS 47P 0655246, 15244068)						
Parameter	Nitrogen dioxide (ppm)						
Measurement Date	Oct 20, 2022 - Oct 21, 2022						
Measurement by	Teeravut Sukdee						
Time	22121096-40 Oct 20, 2022	22121096-41 Oct 21, 2022	22121096-42 Oct 22, 2022	-	-	-	-
10:00 AM - 11:00 AM	0.007	0.021	0.003	-	-	-	-
11:00 AM - 12:00 PM	0.006	0.017	0.010	-	-	-	-
12:00 PM - 01:00 PM	0.010	0.012	0.010	-	-	-	-
01:00 PM - 02:00 PM	0.009	0.01x	0.007	-	-	-	-
02:00 PM - 0x:00 PM	0.003	0.014	0.003	-	-	-	-
0x:00 PM - 04:00 PM	0.003	0.014	0.009	-	-	-	-
04:00 PM - 05:00 PM	0.009	0.015	0.010	-	-	-	-
05:00 PM - 06:00 PM	0.010	0.014	0.010	-	-	-	-
06:00 PM - 07:00 PM	0.012	0.015	0.022	-	-	-	-
07:00 PM - 03:00 PM	0.017	0.016	0.025	-	-	-	-
03:00 PM - 09:00 PM	0.017	0.013	0.022	-	-	-	-
09:00 PM - 10:00 PM	0.013	0.013	0.02x	-	-	-	-
10:00 PM - 11:00 PM	0.022	0.021	0.021	-	-	-	-
11:00 PM - 12:00 AM	0.020	0.016	0.014	-	-	-	-
12:00 AM - 01:00 AM	0.019	0.014	0.009	-	-	-	-
01:00 AM - 02:00 AM	0.013	0.011	0.010	-	-	-	-
02:00 AM - 0x:00 AM	0.009	0.014	0.007	-	-	-	-
0x:00 AM - 04:00 AM	0.003	0.01x	0.007	-	-	-	-
04:00 AM - 05:00 AM	0.007	0.003	0.003	-	-	-	-
05:00 AM - 06:00 AM	0.003	0.007	0.009	-	-	-	-
06:00 AM - 07:00 AM	0.010	0.007	0.007	-	-	-	-
07:00 AM - 03:00 AM	0.014	0.003	0.009	-	-	-	-
03:00 AM - 09:00 AM	0.017	0.003	0.009	-	-	-	-
09:00 AM - 10:00 AM	0.019	0.003	0.003	-	-	-	-
Average	0.01x	0.01x	0.012	-	-	-	-
1hr - Ma)imum	0.022	0.021	0.025	-	-	-	-
Standard 1hr - Average	0.170	0.170	0.170	-	-	-	-

Standard : Notification of the National Environment Board No. xx, 2009 (B.E. 25528.

Reference Method : US EPAMethod Part 50 App. F (Chemiluminescence8

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O : สัญญาเลขที่รฟท.จ.650089

Project Name :

Project Location :

Lot ID: 22141032

Date Received : Nov 28, 2022

Date Reported : Dec 03, 2022

Report Number: 2496955-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 1 บริเวณ บขส.ปิ่นเกล้าไทย (GPS 47P 0666344, 1526532)						
Parameter	Carbon monoxide (ppm)						
Measurement Date	Nov 24, 2022 - Nov 27, 2022						
Measurement by	Teeravut Sukdee						
	22141032-1	22141032-2	22141032-3	-	-	-	-
Time	Nov 24, 2022	Nov 25, 2022	Nov 26, 2022	-	-	-	-
10:00 AM - 11:00 AM	0.5	0.5	0.4	-	-	-	-
11:00 AM - 12:00 PM	0.5	0.5	0.5	-	-	-	-
12:00 PM - 01:00 PM	0.5	0.5	0.5	-	-	-	-
01:00 PM - 02:00 PM	0.5	0.5	0.5	-	-	-	-
02:00 PM - 03:00 PM	0.5	0.5	0.5	-	-	-	-
03:00 PM - 04:00 PM	0.5	0.4	0.5	-	-	-	-
04:00 PM - 05:00 PM	0.5	0.4	0.5	-	-	-	-
05:00 PM - 06:00 PM	0.5	0.5	0.6	-	-	-	-
06:00 PM - 07:00 PM	0.5	0.6	0.6	-	-	-	-
07:00 PM - 08:00 PM	0.5	0.4	0.6	-	-	-	-
08:00 PM - 09:00 PM	0.5	0.4	0.6	-	-	-	-
09:00 PM - 10:00 PM	0.5	0.5	0.6	-	-	-	-
10:00 PM - 11:00 PM	0.5	0.4	0.5	-	-	-	-
11:00 PM - 12:00 AM	0.5	0.5	0.5	-	-	-	-
12:00 AM - 01:00 AM	0.6	0.6	0.5	-	-	-	-
01:00 AM - 02:00 AM	0.6	0.6	0.6	-	-	-	-
02:00 AM - 03:00 AM	0.6	0.6	0.6	-	-	-	-
03:00 AM - 04:00 AM	0.6	0.6	0.7	-	-	-	-
04:00 AM - 05:00 AM	0.6	0.6	0.7	-	-	-	-
05:00 AM - 06:00 AM	0.7	0.6	0.8	-	-	-	-
06:00 AM - 07:00 AM	0.8	0.6	0.6	-	-	-	-
07:00 AM - 08:00 AM	0.6	0.6	0.6	-	-	-	-
08:00 AM - 09:00 AM	0.6	0.5	0.6	-	-	-	-
09:00 AM - 10:00 AM	0.2	0.5	0.6	-	-	-	-
Average	0.5	0.5	0.6	-	-	-	-
1hr - Maximum	0.8	0.6	0.8	-	-	-	-
Standard 1hr - Average	30	30	30	-	-	-	-

Standard : Notification of the National Environmental Board. No.10, 1995 (B.E.2538).

Reference Method : EPA 40 CFR Part 50Appendix C

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Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121091

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477714-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 2 บริเวณนิคมรถไฟ กม.11 (GPS 47P 0667277, 1528806)						
Parameter	Carbon monoxide (ppm)						
Measurement Date	Oct 06, 2022 - Oct 09, 2022						
Measurement by	Teeravut Sukdee						
	22121091-4	22121091-5	22121091-6	-	-	-	-
Time	Oct 06, 2022	Oct 07, 2022	Oct 08, 2022	-	-	-	-
09:00 AM - 10:00 AM	1.7	0.2	0.2	-	-	-	-
10:00 AM - 11:00 AM	1.2	0.1	0.2	-	-	-	-
11:00 AM - 12:00 PM	0.6	0.1	0.2	-	-	-	-
12:00 PM - 01:00 PM	0.5	0.2	0.1	-	-	-	-
01:00 PM - 02:00 PM	0.3	0.2	0.1	-	-	-	-
02:00 PM - 03:00 PM	0.3	0.2	0.2	-	-	-	-
03:00 PM - 04:00 PM	0.3	0.2	0.2	-	-	-	-
04:00 PM - 05:00 PM	0.3	0.1	0.2	-	-	-	-
05:00 PM - 06:00 PM	0.3	0.1	0.2	-	-	-	-
06:00 PM - 07:00 PM	0.4	0.2	0.1	-	-	-	-
07:00 PM - 08:00 PM	0.6	0.2	0.2	-	-	-	-
08:00 PM - 09:00 PM	0.6	0.3	0.2	-	-	-	-
09:00 PM - 10:00 PM	0.5	0.5	0.2	-	-	-	-
10:00 PM - 11:00 PM	0.3	0.7	0.2	-	-	-	-
11:00 PM - 12:00 AM	0.3	1.0	0.2	-	-	-	-
12:00 AM - 01:00 AM	0.4	0.6	0.2	-	-	-	-
01:00 AM - 02:00 AM	0.4	0.5	0.2	-	-	-	-
02:00 AM - 03:00 AM	0.3	0.5	0.2	-	-	-	-
03:00 AM - 04:00 AM	0.3	0.4	0.2	-	-	-	-
04:00 AM - 05:00 AM	0.3	0.3	0.2	-	-	-	-
05:00 AM - 06:00 AM	0.3	0.2	0.2	-	-	-	-
06:00 AM - 07:00 AM	0.5	0.2	0.1	-	-	-	-
07:00 AM - 08:00 AM	0.6	0.2	0.5	-	-	-	-
08:00 AM - 09:00 AM	0.6	0.2	0.1	-	-	-	-
Average	0.5	0.3	0.2	-	-	-	-
1hr - Maximum	1.7	1.0	0.5	-	-	-	-
Standard 1hr - Average	30	30	30	-	-	-	-

Standard : Notification of the National Environmental Board. No.10, 1995 (B.E.2538).

Reference Method : EPA 40 CFR Part 50Appendix C

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121091

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477720-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ (บริเวณวัดเสนาสนาจี GPS 47P 0558209, 1)(0)51x						
Parameter	Carbon monoMde ppmx						
Measurement Date	Oct 05, 2022 - Oct 09, 2022						
Measurement by	Teeravut Sukdee						
Time	22121091-7 Oct 05, 2022	22121091-8 Oct 07, 2022	22121091-9 Oct 08, 2022	-	-	-	-
10:00 A3 - 11:00 A3	1.9	2.1	2.)	-	-	-	-
11:00 A3 - 12:00 P3	1.9	2.2	2.)	-	-	-	-
12:00 P3 - 01:00 P3	2.0	2.2	2.)	-	-	-	-
01:00 P3 - 02:00 P3	2.0	2.2	2.)	-	-	-	-
02:00 P3 - 03:00 P3	2.0	2.)	2.)	-	-	-	-
03:00 P3 - 04:00 P3	2.1	2.)	2.4	-	-	-	-
04:00 P3 - 05:00 P3	2.1	2.)	2.4	-	-	-	-
05:00 P3 - 06:00 P3	2.1	2.4	2.)	-	-	-	-
06:00 P3 - 07:00 P3	2.1	2.4	2.)	-	-	-	-
07:00 P3 - 08:00 P3	2.0	2.4	2.5	-	-	-	-
08:00 P3 - 09:00 P3	2.0	2.4	2.5	-	-	-	-
09:00 P3 - 10:00 P3	2.0	2.4	2.5	-	-	-	-
10:00 P3 - 11:00 P3	2.0	2.)	2.5	-	-	-	-
11:00 P3 - 12:00 A3	2.0	2.)	2.)	-	-	-	-
12:00 A3 - 01:00 A3	2.1	2.4	2.)	-	-	-	-
01:00 A3 - 02:00 A3	2.1	2.)	2.5	-	-	-	-
02:00 A3 - 03:00 A3	2.2	2.)	2.5	-	-	-	-
03:00 A3 - 04:00 A3	2.2	2.)	2.8	-	-	-	-
04:00 A3 - 05:00 A3	2.2	2.)	2.8	-	-	-	-
05:00 A3 - 06:00 A3	2.2	2.4	2.7	-	-	-	-
06:00 A3 - 07:00 A3	2.1	2.4	2.7	-	-	-	-
07:00 A3 - 08:00 A3	2.1	2.4	2.7	-	-	-	-
08:00 A3 - 09:00 A3	2.1	2.)	2.7	-	-	-	-
09:00 A3 - 10:00 A3	2.1	2.)	2.7	-	-	-	-
Average	2.1	2.4	2.5	-	-	-	-
1hr - 3aMum	2.2	2.)	2.8	-	-	-	-
Standard 1hr - Average	(0	(0	(0	-	-	-	-

Standard : Notification of the National Environmental Board. No.10, 199) (B.E.2) (8x.

Reference 3 ethod : EPA 40 CFR Part)0AppendiMC

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Analysis / Test Report

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Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121091

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477726-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 4 บริเวณโรงเรียนอนุบาลจันทบุรี (GPS 47P 0668994, 1532102)						
Parameter	Carbon monoxide (ppm)						
Measurement Date	Oct 06, 2022 - Oct 09, 2022						
Measurement by	Teeravut Sukdee						
Time	22121091-10 Oct 06, 2022	22121091-11 Oct 07, 2022	22121091-12 Oct 08, 2022	-	-	-	-
11:00 AM - 12:00 PM	0.8	0.4	0.2	-	-	-	-
12:00 PM - 01:00 PM	0.3	0.4	0.2	-	-	-	-
01:00 PM - 02:00 PM	<0.1	0.6	0.3	-	-	-	-
02:00 PM - 03:00 PM	<0.1	0.5	0.2	-	-	-	-
03:00 PM - 04:00 PM	0.2	0.4	0.3	-	-	-	-
04:00 PM - 05:00 PM	0.1	0.7	0.3	-	-	-	-
05:00 PM - 06:00 PM	0.2	1.0	0.3	-	-	-	-
06:00 PM - 07:00 PM	0.4	0.7	0.5	-	-	-	-
07:00 PM - 08:00 PM	0.6	0.5	0.7	-	-	-	-
08:00 PM - 09:00 PM	0.8	0.8	0.8	-	-	-	-
09:00 PM - 10:00 PM	0.7	0.8	0.4	-	-	-	-
10:00 PM - 11:00 PM	0.3	0.7	0.3	-	-	-	-
11:00 PM - 12:00 AM	0.4	0.7	0.3	-	-	-	-
12:00 AM - 01:00 AM	0.5	0.7	0.2	-	-	-	-
01:00 AM - 02:00 AM	0.5	0.6	0.3	-	-	-	-
02:00 AM - 03:00 AM	0.4	0.6	0.2	-	-	-	-
03:00 AM - 04:00 AM	0.4	0.5	0.3	-	-	-	-
04:00 AM - 05:00 AM	0.4	0.5	0.4	-	-	-	-
05:00 AM - 06:00 AM	0.5	0.5	0.5	-	-	-	-
06:00 AM - 07:00 AM	0.6	0.5	0.6	-	-	-	-
07:00 AM - 08:00 AM	0.6	0.5	0.7	-	-	-	-
08:00 AM - 09:00 AM	0.4	0.3	0.5	-	-	-	-
09:00 AM - 10:00 AM	0.3	0.2	0.4	-	-	-	-
10:00 AM - 11:00 AM	0.2	0.2	0.4	-	-	-	-
Average	0.4	0.6	0.4	-	-	-	-
1hr - Maximum	0.8	1.0	0.8	-	-	-	-
Standard 1hr - Average	30	30	30	-	-	-	-

Standard : Notification of the National Environmental Board. No.10, 1995 (B.E.2538).

Reference Method : EPA 40 CFR Part 50Appendix C

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121091
Date Received : Oct 24, 2022
Date Reported : Oct 29, 2022
Report bumQer: 247772-N

Page 1 of 1

Sample Description	Air (uality						
Location	สถานีที่ 6 บริเวณโรงเรียนบางเขน SGPS 47P 0889429, 16) 2940x						
Parameter	CarQon monoMde 5ppmx						
Measurement Date	Oct 08, 2022 NOct 09, 2022						
Measurement by	Teeravut Sukdee						
Time	22121091N1	22121091N4	22121091N6	N	N	N	N
	Oct 08, 2022	Oct 07, 2022	Oct 0-, 2022	N	N	N	N
12:00 P3 N01:00 P3	0.4	1.0	0.9	N	N	N	N
01:00 P3 N02:00 P3	0.-	0.9	0.9	N	N	N	N
02:00 P3 N03:00 P3	0.-	1.0	0.-	N	N	N	N
03:00 P3 N04:00 P3	1.1	1.0	0.9	N	N	N	N
04:00 P3 N05:00 P3	0.-	1.1	1.0	N	N	N	N
05:00 P3 N06:00 P3	0.7	1.1	1.0	N	N	N	N
06:00 P3 N07:00 P3	0.9	1.0	1.1	N	N	N	N
07:00 P3 N08:00 P3	1.2	1.0	1.4	N	N	N	N
08:00 P3 N09:00 P3	1.)	1.2	1.0	N	N	N	N
09:00 P3 N10:00 P3	0.9	1.2	0.9	N	N	N	N
10:00 P3 N11:00 P3	0.7	1.2	0.-	N	N	N	N
11:00 P3 N12:00 A3	0.-	1.1	0.7	N	N	N	N
12:00 A3 N01:00 A3	0.9	1.2	0.8	N	N	N	N
01:00 A3 N02:00 A3	0.9	1.1	0.7	N	N	N	N
02:00 A3 N03:00 A3	0.9	1.0	0.7	N	N	N	N
03:00 A3 N04:00 A3	0.-	1.0	0.-	N	N	N	N
04:00 A3 N05:00 A3	0.-	1.0	0.9	N	N	N	N
05:00 A3 N06:00 A3	1.0	1.0	1.0	N	N	N	N
06:00 A3 N07:00 A3	1.2	1.1	1.0	N	N	N	N
07:00 A3 N08:00 A3	1.)	1.0	1.1	N	N	N	N
08:00 A3 N09:00 A3	1.0	0.-	1.0	N	N	N	N
09:00 A3 N10:00 A3	0.-	0.7	0.-	N	N	N	N
10:00 A3 N11:00 A3	0.-	0.-	0.9	N	N	N	N
11:00 A3 N12:00 P3	1.0	0.9	0.9	N	N	N	N
Average	0.9	1.0	0.9	N	N	N	N
1hr N3 aMum	1.)	1.2	1.4	N	N	N	N
Standard 1hr NAverage	)0	)0	)0	N	N	N	N

Standard : botification of the bational Environmental Board. bo.10, 1996 B.E.26) - x.
Reference 3 ethod : EPA 40 CFR Part 60AppendiMC

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121091
Date Received : Oct 24, 2022
Date Reported : Oct 29, 2022
Report bumQer: 24777-0N

Page 1 of 1

Sample Description	Air (uality						
Location	สถานีที่ 6 บริเวณตลาดหลักสี่ SGPS 47P 0670748, 1808414)						
Parameter	CarQon monoxide 5ppm)						
Measurement Date	Oct 14, 2022 NOct 17, 2022						
Measurement by	Teeravut Sukdee						
Time	22121091N6	22121091N7	22121091NM	N	N	N	N
	Oct 14, 2022	Oct 18, 2022	Oct 16, 2022	N	N	N	N
09:00 A3 N10:00 A3	0.9	1.2	0.M	N	N	N	N
10:00 A3 N11:00 A3	0.M	1.1	0.M	N	N	N	N
11:00 A3 N12:00 P3	1.0	1.2	0.9	N	N	N	N
12:00 P3 N01:00 P3	1.1	1.0	0.9	N	N	N	N
01:00 P3 N02:00 P3	1.0	1.0	0.9	N	N	N	N
02:00 P3 N03:00 P3	0.9	1.0	0.9	N	N	N	N
03:00 P3 N04:00 P3	0.9	1.0	1.0	N	N	N	N
04:00 P3 N05:00 P3	1.1	1.2	1.1	N	N	N	N
05:00 P3 N06:00 P3	1.-	1.-	1.0	N	N	N	N
06:00 P3 N07:00 P3	1.-	1.0	1.0	N	N	N	N
07:00 P3 N08:00 P3	1.4	0.M	0.9	N	N	N	N
08:00 P3 N09:00 P3	1.4	0.M	0.9	N	N	N	N
09:00 P3 N10:00 P3	1.2	0.7	0.M	N	N	N	N
10:00 P3 N11:00 P3	1.2	0.7	0.M	N	N	N	N
11:00 P3 N12:00 A3	1.0	0.7	0.7	N	N	N	N
12:00 A3 N01:00 A3	0.9	0.7	0.7	N	N	N	N
01:00 A3 N02:00 A3	0.M	0.6	0.7	N	N	N	N
02:00 A3 N03:00 A3	0.9	0.6	0.7	N	N	N	N
03:00 A3 N04:00 A3	0.M	0.7	0.7	N	N	N	N
04:00 A3 N05:00 A3	0.9	0.7	0.7	N	N	N	N
05:00 A3 N06:00 A3	1.1	0.M	0.M	N	N	N	N
06:00 A3 N07:00 A3	1.4	0.9	1.1	N	N	N	N
07:00 A3 N08:00 A3	1.8	0.M	1.1	N	N	N	N
08:00 A3 N09:00 A3	1.4	0.M	1.2	N	N	N	N
Average	1.1	0.9	0.9	N	N	N	N
1hr N3 aximum	1.8	1.-	1.2	N	N	N	N
Standard 1hr NAverage	-0	-0	-0	N	N	N	N

Standard : botification of the bational Environmental Board. bo.10, 1998 B.E.28- M).
Reference 3 ethod : EPA 40 CFR Part 80Appendix C

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Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121091

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 24777-N

Page 1 of 1

Sample Description Air (quality)
Location สถานีที่ 7 บริเวณขบวนรถเคหะหลวงสองห้อง 6GPS 47P 0571594, 18- 7155)
Parameter Carbon monoxide (ppm)
Measurement Date Oct 20, 2022 Noct 2-, 2022
Measurement by Teeravut Sukdee

Time	22121091N9 Oct 20, 2022	22121091N0 Oct 21, 2022	22121091N1 Oct 22, 2022	N	N	N	N
01:00 PM N02:00 PM	0.5	0.5	0.5	N	N	N	N
02:00 PM N0-:00 PM	0.5	0-	0.8	N	N	N	N
0-:00 PM N04:00 PM	0.7	0.4	0.5	N	N	N	N
04:00 PM N08:00 PM	0.7	0.4	0.5	N	N	N	N
08:00 PM N05:00 PM	0.5	0.8	0.5	N	N	N	N
05:00 PM N07:00 PM	0.7	0.8	0-	N	N	N	N
07:00 PM N03:00 PM	1.0	0.8	0.8	N	N	N	N
03:00 PM N09:00 PM	1.0	0.8	0.7	N	N	N	N
09:00 PM N10:00 PM	0.5	0.5	0.5	N	N	N	N
10:00 PM N11:00 PM	0.8	0.5	0.5	N	N	N	N
11:00 PM N12:00 AM	0.5	0.8	0.8	N	N	N	N
12:00 AM N01:00 AM	0.5	0.8	0-	N	N	N	N
01:00 AM N02:00 AM	0.5	0.8	0.4	N	N	N	N
02:00 AM N0-:00 AM	0.8	0.8	0.4	N	N	N	N
0-:00 AM N04:00 AM	0.4	0.4	0.4	N	N	N	N
04:00 AM N08:00 AM	0.4	0.4	0-	N	N	N	N
08:00 AM N05:00 AM	0.4	0.4	0-	N	N	N	N
05:00 AM N07:00 AM	0.8	0.4	0-	N	N	N	N
07:00 AM N03:00 AM	1.2	0.5	0.4	N	N	N	N
03:00 AM N09:00 AM	0.8	0.5	0.8	N	N	N	N
09:00 AM N10:00 AM	0.8	0.5	0.8	N	N	N	N
10:00 AM N11:00 AM	0.5	0.5	0.8	N	N	N	N
11:00 AM N12:00 PM	0.5	0.5	0.4	N	N	N	N
12:00 PM N01:00 PM	0.5	0.5	0.8	N	N	N	N
Average	0.5	0.8	0.8	N	N	N	N
1hr NMaximum	1.2	0.5	0.7	N	N	N	N
Standard 1hr NAverage	-0	-0	-0	N	N	N	N

Standard : Notification of the National Environmental Board. No.10, 1998 (E.28-3).

Reference Method : EPA 40 CFR Part 80Appendix C

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Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121091

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 24777-N

Page 1 of 1

Sample Description Air Quality
Location สถานีที่ 5 บริเวณวัดดอนเมือง 8GPS 47P 0) 7292N, 1N-97-0x
Parameter Carbon monoxide (ppm)
Measurement Date Oct 14, 2022 to Oct 17, 2022
Measurement by Teeravut Sukdee

Time	22121091b22 Oct 14, 2022	22121091b2- Oct 14, 2022	22121091b24 Oct 15, 2022	b	b	b	b
10:00 A3 b11:00 A3	2.5	-1	-1	b	b	b	b
11:00 A3 b12:00 P3	2.9	-1	-0	b	b	b	b
12:00 P3 b01:00 P3	2.9	-0	-0	b	b	b	b
01:00 P3 b02:00 P3	1.9	-0	-0	b	b	b	b
02:00 P3 b0-:00 P3	-0	-0	-0	b	b	b	b
0-:00 P3 b04:00 P3	-0	-0	-0	b	b	b	b
04:00 P3 b0N:00 P3	-0	-1	-1	b	b	b	b
0N:00 P3 b0):00 P3	-0	-1	-N	b	b	b	b
0):00 P3 b07:00 P3	-1	-0	-2	b	b	b	b
07:00 P3 b05:00 P3	-2	-1	-2	b	b	b	b
05:00 P3 b09:00 P3	-1	-0	-2	b	b	b	b
09:00 P3 b10:00 P3	-1	-0	-0	b	b	b	b
10:00 P3 b11:00 P3	-1	2.9	-0	b	b	b	b
11:00 P3 b12:00 A3	-0	2.9	-0	b	b	b	b
12:00 A3 b01:00 A3	-0	2.9	-0	b	b	b	b
01:00 A3 b02:00 A3	-0	2.9	-0	b	b	b	b
02:00 A3 b0-:00 A3	-0	2.9	-0	b	b	b	b
0-:00 A3 b04:00 A3	-0	2.9	-0	b	b	b	b
04:00 A3 b0N:00 A3	-0	2.9	-0	b	b	b	b
0N:00 A3 b0):00 A3	-1	2.9	-0	b	b	b	b
0):00 A3 b07:00 A3	-1	2.9	-2	b	b	b	b
07:00 A3 b05:00 A3	-1	-0	-2	b	b	b	b
05:00 A3 b09:00 A3	-1	-0	-1	b	b	b	b
09:00 A3 b10:00 A3	-1	-0	-1	b	b	b	b
Average	-0	-0	-1	b	b	b	b
1hr b3 aMmum	-1	-1	-N	b	b	b	b
Standard 1hr bAverage	-0	-0	-0	b	b	b	b

Standard : Notification of the National Environmental Board. No.10, 199N (E.2N-5x).

Reference Method : EPA 40 CFR Part 80Appendix C

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Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121091

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bumQer: 24777-7M

Page 1 of 1

Sample Description	Air (uality						
Location	สถานีที่ 9 บริเวณหมู่บ้านปรีชา GPS 47P 057-4-1, 184471)x						
Parameter	CarQon monoMde ppmx						
Measurement Date	Oct 14, 2022 NOct 17, 2022						
Measurement by	Teeravut Sukdee						
Time	22121091N88 Oct 14, 2022	22121091N85 Oct 18, 2022	22121091N87 Oct 15, 2022	N	N	N	N
11:00 A3 N12:00 P3	0.4	0.2	0.2	N	N	N	N
12:00 P3 N01:00 P3	0.4	0.2	0.-	N	N	N	N
01:00 P3 N02:00 P3	0.8	0.2	0.-	N	N	N	N
02:00 P3 N0- :00 P3	0.-	0.2	0.2	N	N	N	N
0- :00 P3 N04:00 P3	0.4	0.2	0.-	N	N	N	N
04:00 P3 N08:00 P3	0.-	0.-	0.-	N	N	N	N
08:00 P3 N05:00 P3	0.2	0.2	0.4	N	N	N	N
05:00 P3 N07:00 P3	0.-	0.2	0.4	N	N	N	N
07:00 P3 N0) :00 P3	0.4	0.2	0.4	N	N	N	N
0) :00 P3 N09:00 P3	0.5	0.2	0.4	N	N	N	N
09:00 P3 N10:00 P3	0.8	0.2	0.-	N	N	N	N
10:00 P3 N11:00 P3	0.4	0.2	0.-	N	N	N	N
11:00 P3 N12:00 A3	0.-	0.2	0.2	N	N	N	N
12:00 A3 N01:00 A3	0.-	0.2	0.-	N	N	N	N
01:00 A3 N02:00 A3	0.4	0.2	0.2	N	N	N	N
02:00 A3 N0- :00 A3	0.5	0.2	0.2	N	N	N	N
0- :00 A3 N04:00 A3	0.5	0.2	0.2	N	N	N	N
04:00 A3 N08:00 A3	0.4	0.2	0.-	N	N	N	N
08:00 A3 N05:00 A3	0.4	0.2	0.-	N	N	N	N
05:00 A3 N07:00 A3	0.4	0.2	0.4	N	N	N	N
07:00 A3 N0) :00 A3	0.4	0.2	0.4	N	N	N	N
0) :00 A3 N09:00 A3	0.4	0.2	0.4	N	N	N	N
09:00 A3 N10:00 A3	0.-	0.-	0.4	N	N	N	N
10:00 A3 N11:00 A3	0.-	0.-	0.4	N	N	N	N
Average	0.4	0.2	0.-	N	N	N	N
1hr N3 aMum	0.5	0.-	0.4	N	N	N	N
Standard 1hr NAverage	-0	-0	-0	N	N	N	N

Standard : botification of the bational Environmental Board. bo.10, 1998 B.E.28-)x.

Reference 3 ethod : EPA 40 CFR Part 80AppendiMC

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Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121091

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bumQer: 24777-9M

Page 1 of 1

Sample Description	Air (uality						
Location	สถานีที่ 10 บริเวณโรงเรียนรัตนโกสินทร์ รังสิต GPS 47P 057--10, 1847277)						
Parameter	CarQon monoxide (ppm)						
Measurement Date	Oct 14, 2022 NOct 17, 2022						
Measurement by	Teeravut Sukdee						
Time	22121091N8M Oct 14, 2022	22121091N89 Oct 18, 2022	22121091N0 Oct 15, 2022	N	N	N	N
12:00 P3 N01:00 P3	0.8	0.M	0.4	N	N	N	N
01:00 P3 N02:00 P3	0.8	0.M	0.8	N	N	N	N
02:00 P3 N0- :00 P3	0.4	0.M	0.8	N	N	N	N
0- :00 P3 N04:00 P3	0.4	0.M	0.8	N	N	N	N
04:00 P3 N08:00 P3	0.4	0.M	0.9	N	N	N	N
08:00 P3 N05:00 P3	0.4	0.M	0.9	N	N	N	N
05:00 P3 N07:00 P3	0.4	1.0	0.M	N	N	N	N
07:00 P3 N0M00 P3	0.2	1.0	0.-	N	N	N	N
0M00 P3 N09:00 P3	0.5	0.9	0.4	N	N	N	N
09:00 P3 N10:00 P3	0.M	0.9	0.8	N	N	N	N
10:00 P3 N11:00 P3	0.5	0.9	0.8	N	N	N	N
11:00 P3 N12:00 A3	0.8	0.9	0.8	N	N	N	N
12:00 A3 N01:00 A3	0.7	1.0	0.9	N	N	N	N
01:00 A3 N02:00 A3	0.M	0.9	0.9	N	N	N	N
02:00 A3 N0- :00 A3	0.M	0.M	0.9	N	N	N	N
0- :00 A3 N04:00 A3	0.M	0.M	0.M	N	N	N	N
04:00 A3 N08:00 A3	0.M	0.7	0.M	N	N	N	N
08:00 A3 N05:00 A3	0.M	0.7	0.7	N	N	N	N
05:00 A3 N07:00 A3	0.M	0.8	0.7	N	N	N	N
07:00 A3 N0M00 A3	0.M	0.8	0.7	N	N	N	N
0M00 A3 N09:00 A3	0.9	0.4	0.5	N	N	N	N
09:00 A3 N10:00 A3	0.9	0.5	0.5	N	N	N	N
10:00 A3 N11:00 A3	0.9	0.7	0.8	N	N	N	N
11:00 A3 N12:00 P3	0.M	0.7	0.8	N	N	N	N
Average	0.5	0.M	0.5	N	N	N	N
1hr N3 aximum	0.9	1.0	0.9	N	N	N	N
Standard 1hr NAverage	-0	-0	-0	N	N	N	N

Standard : botification of the bational Environmental Board. bo.10, 1998 B.E.28-M).

Reference 3 ethod : EPA 40 CFR Part 80Appendix C

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Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O : สัญญาเลขที่รฟท.จ.650089

Project Name :

Project Location :

Lot ID: 22133461

Date Received : Nov 16, 2022

Date Reported : Nov 21, 2022

Report Number: 2497716-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 11 บริเวณหมู่บ้านโสมเพลส (GPS 47P 0672972, 1547425)						
Parameter	Carbon monoxide (ppm)						
Measurement Date	Nov 10, 2022 - Nov 13, 2022						
Measurement by	Teeravut Sukdee						
Time	22133461-4 Nov 10, 2022	22133461-5 Nov 11, 2022	22133461-6 Nov 12, 2022	-	-	-	-
10:00 AM - 11:00 AM	0.6	0.8	0.7	-	-	-	-
11:00 AM - 12:00 PM	0.6	0.7	0.7	-	-	-	-
12:00 PM - 01:00 PM	0.6	0.7	0.6	-	-	-	-
01:00 PM - 02:00 PM	0.6	0.7	0.6	-	-	-	-
02:00 PM - 03:00 PM	0.6	0.6	0.6	-	-	-	-
03:00 PM - 04:00 PM	0.6	0.6	0.7	-	-	-	-
04:00 PM - 05:00 PM	0.6	0.6	0.6	-	-	-	-
05:00 PM - 06:00 PM	0.7	0.6	0.6	-	-	-	-
06:00 PM - 07:00 PM	0.7	0.6	0.6	-	-	-	-
07:00 PM - 08:00 PM	0.7	0.7	0.9	-	-	-	-
08:00 PM - 09:00 PM	0.8	0.8	0.7	-	-	-	-
09:00 PM - 10:00 PM	0.8	0.9	0.7	-	-	-	-
10:00 PM - 11:00 PM	0.8	0.9	0.7	-	-	-	-
11:00 PM - 12:00 AM	0.8	0.9	0.8	-	-	-	-
12:00 AM - 01:00 AM	0.8	0.8	0.8	-	-	-	-
01:00 AM - 02:00 AM	0.7	0.8	0.8	-	-	-	-
02:00 AM - 03:00 AM	0.7	0.8	0.7	-	-	-	-
03:00 AM - 04:00 AM	0.7	0.8	0.7	-	-	-	-
04:00 AM - 05:00 AM	0.7	0.7	0.7	-	-	-	-
05:00 AM - 06:00 AM	0.7	0.7	0.7	-	-	-	-
06:00 AM - 07:00 AM	0.7	0.7	0.7	-	-	-	-
07:00 AM - 08:00 AM	0.7	0.7	0.8	-	-	-	-
08:00 AM - 09:00 AM	0.8	0.8	0.8	-	-	-	-
09:00 AM - 10:00 AM	0.8	0.8	0.8	-	-	-	-
Average	0.7	0.7	0.7	-	-	-	-
1hr - Maximum	0.8	0.9	0.9	-	-	-	-
Standard 1hr - Average	30	30	30	-	-	-	-

Standard : Notification of the National Environmental Board. No.10, 1995 (B.E.2538).

Reference Method : EPA 40 CFR Part 50Appendix C

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121091

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477742-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 12 บริเวณอาคารพัฒนาศึกษาวิทยาสถาฯ ประชาชน (GPS 47P 0665944, 1528587)						
Parameter	Carbon monoxide (ppm)						
Measurement Date	Oct 20, 2022 - Oct 2M 2022						
Measurement by	Teeravut Sukdee						
Time	22121091-M4 Oct 20, 2022	22121091-M6 Oct 21, 2022	22121091-M6 Oct 22, 2022	-	-	-	-
12:00 P3 - 01:00 P3	0.5	0.4	0.4	-	-	-	-
01:00 P3 - 02:00 P3	0.5	0.4	0.4	-	-	-	-
02:00 P3 - 0M00 P3	0.4	0.4	0.4	-	-	-	-
0M00 P3 - 04:00 P3	0.5	0.4	0.4	-	-	-	-
04:00 P3 - 05:00 P3	0.5	0.4	0.4	-	-	-	-
05:00 P3 - 06:00 P3	0.5	0.5	0.5	-	-	-	-
06:00 P3 - 07:00 P3	0.5	0.5	0.5	-	-	-	-
07:00 P3 - 08:00 P3	0.4	0.5	0.5	-	-	-	-
08:00 P3 - 09:00 P3	0.4	0.5	0.5	-	-	-	-
09:00 P3 - 10:00 P3	0.4	0.5	0.5	-	-	-	-
10:00 P3 - 11:00 P3	0.4	0.5	0.5	-	-	-	-
11:00 P3 - 12:00 A3	0.4	0.5	0.5	-	-	-	-
12:00 A3 - 01:00 A3	0.4	0.5	0.5	-	-	-	-
01:00 A3 - 02:00 A3	0.4	0.4	0.5	-	-	-	-
02:00 A3 - 0M00 A3	0.4	0.4	0.4	-	-	-	-
0M00 A3 - 04:00 A3	0.4	0.4	0.4	-	-	-	-
04:00 A3 - 05:00 A3	0.5	0.5	0.4	-	-	-	-
05:00 A3 - 06:00 A3	0.5	0.5	0.5	-	-	-	-
06:00 A3 - 07:00 A3	0.5	0.6	0.5	-	-	-	-
07:00 A3 - 08:00 A3	0.6	0.6	0.5	-	-	-	-
08:00 A3 - 09:00 A3	0.6	0.5	0.5	-	-	-	-
09:00 A3 - 10:00 A3	0.6	0.5	0.5	-	-	-	-
10:00 A3 - 11:00 A3	0.5	0.4	0.4	-	-	-	-
11:00 A3 - 12:00 P3	0.4	0.4	0.4	-	-	-	-
Average	0.5	0.5	0.5	-	-	-	-
1hr - 3 aximum	0.6	0.6	0.5	-	-	-	-
Standard 1hr - Average	M0	M0	M0	-	-	-	-

Standard : Notification of the National Environmental Board. No.10, 1995 (B.E.25M8).

Reference 3 ethod : EPA 40 CFR Part 50Appendix C

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121091
Date Received : Oct 24, 2022
Date Reported : Oct 29, 2022
Report Number: 247774-N

Page 1 of 1

Sample Description	Air (uality						
Location	สถานีที่ 1- บริเวณชานชาลา BTS 47P 0589717, 1828104)						
Parameter	Carbon monoxide (ppm)						
Measurement Date	Oct 20, 2022 NOct 2-, 2022						
Measurement by	Teeravut Sukdee						
Time	22121091N7 Oct 20, 2022	22121091NM Oct 21, 2022	22121091N9 Oct 22, 2022	N	N	N	N
11:00 A3 N12:00 P3	0.5	1.0	0.9	N	N	N	N
12:00 P3 N01:00 P3	0.5	1.1	0.9	N	N	N	N
01:00 P3 N02:00 P3	0.M	1.1	0.9	N	N	N	N
02:00 P3 N0-:00 P3	1.0	1.1	0.9	N	N	N	N
0-:00 P3 N04:00 P3	1.1	1.-	0.M	N	N	N	N
04:00 P3 N08:00 P3	1.1	1.8	0.9	N	N	N	N
08:00 P3 N05:00 P3	1.-	1.8	1.2	N	N	N	N
05:00 P3 N07:00 P3	1.2	1.8	1.-	N	N	N	N
07:00 P3 N0M00 P3	1.4	1.4	1.-	N	N	N	N
0M00 P3 N09:00 P3	1.4	1.4	1.1	N	N	N	N
09:00 P3 N10:00 P3	1.4	1.-	1.0	N	N	N	N
10:00 P3 N11:00 P3	1.2	1.-	1.0	N	N	N	N
11:00 P3 N12:00 A3	1.2	1.-	0.9	N	N	N	N
12:00 A3 N01:00 A3	1.0	1.2	0.M	N	N	N	N
01:00 A3 N02:00 A3	0.9	1.1	0.7	N	N	N	N
02:00 A3 N0-:00 A3	1.0	1.1	0.7	N	N	N	N
0-:00 A3 N04:00 A3	0.9	1.1	0.7	N	N	N	N
04:00 A3 N08:00 A3	1.0	1.1	0.7	N	N	N	N
08:00 A3 N05:00 A3	1.1	1.1	0.M	N	N	N	N
05:00 A3 N07:00 A3	1.-	1.2	0.M	N	N	N	N
07:00 A3 N0M00 A3	1.4	1.-	0.M	N	N	N	N
0M00 A3 N09:00 A3	1.-	1.-	0.9	N	N	N	N
09:00 A3 N10:00 A3	1.1	1.2	0.9	N	N	N	N
10:00 A3 N11:00 A3	1.0	1.0	0.9	N	N	N	N
Average	1.1	1.2	0.9	N	N	N	N
1hr N3 aximum	1.4	1.8	1.-	N	N	N	N
Standard 1hr NAverage	-0	-0	-0	N	N	N	N

Standard : botification of the bational Environmental Board. bo.10, 1998 B.E.28- M.
Reference 3 ethod : EPA 40 CFR Part 80Appendix C

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok
Thailand 10900

P/O :
Project Name :
Project Location :

Lot ID: 22121091
Date Received : Oct 24, 2022
Date Reported : Oct 29, 2022
Report Number: 2471197-1

Page 1 of 1

Sample Description	Air Quality						
Location	สถานีที่ 14 บริเวณถนนจันทน์ (GPS 46P 0577245, 17244058)						
Parameter	Carbon mono)ide (ppm8						
Measurement Date	Oct 20, 2022 - Oct 2x, 2022						
Measurement by	Teeravut Sukdee						
Time	22121091-40 Oct 20, 2022	22121091-41 Oct 21, 2022	22121091-42 Oct 22, 2022	-	-	-	-
10:00 AM - 11:00 AM	0.7	0.9	0.3	-	-	-	-
11:00 AM - 12:00 PM	0.7	0.3	0.3	-	-	-	-
12:00 PM - 01:00 PM	0.3	0.3	0.3	-	-	-	-
01:00 PM - 02:00 PM	0.6	0.3	0.6	-	-	-	-
02:00 PM - 0x:00 PM	0.6	0.3	0.6	-	-	-	-
0x:00 PM - 04:00 PM	0.6	0.3	0.6	-	-	-	-
04:00 PM - 07:00 PM	0.3	0.3	0.3	-	-	-	-
07:00 PM - 05:00 PM	0.3	0.3	0.3	-	-	-	-
05:00 PM - 06:00 PM	0.3	0.3	0.9	-	-	-	-
06:00 PM - 03:00 PM	0.9	0.3	0.9	-	-	-	-
03:00 PM - 09:00 PM	0.9	0.9	0.9	-	-	-	-
09:00 PM - 10:00 PM	0.9	0.9	0.9	-	-	-	-
10:00 PM - 11:00 PM	0.9	0.9	1.0	-	-	-	-
11:00 PM - 12:00 AM	0.3	0.9	0.9	-	-	-	-
12:00 AM - 01:00 AM	0.3	0.3	0.3	-	-	-	-
01:00 AM - 02:00 AM	0.3	0.3	0.3	-	-	-	-
02:00 AM - 0x:00 AM	0.6	0.3	0.6	-	-	-	-
0x:00 AM - 04:00 AM	0.6	0.9	0.6	-	-	-	-
04:00 AM - 07:00 AM	0.6	0.3	0.6	-	-	-	-
07:00 AM - 05:00 AM	0.6	0.3	0.6	-	-	-	-
05:00 AM - 06:00 AM	0.3	0.3	0.6	-	-	-	-
06:00 AM - 03:00 AM	0.3	0.9	0.3	-	-	-	-
03:00 AM - 09:00 AM	0.3	0.9	0.3	-	-	-	-
09:00 AM - 10:00 AM	0.9	0.9	0.3	-	-	-	-
Average	0.3	0.3	0.3	-	-	-	-
1hr - Ma)imum	0.9	0.9	1.0	-	-	-	-
Standard 1hr - Average	x0	x0	x0	-	-	-	-

Standard : Notification of the National Environmental Board. No.10, 1997 (B.E.27x38
Reference Method : EPA 40 CFR Part 70Appendi) C

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O : สัญญาเลขที่รฟท.จ.650089

Project Name :

Project Location :

Lot ID : 22141039

Date Received : Nov 28, 2022

Date Reported : Dec 07, 2022

Report Number : 2496961-1

Sample Number : 22141039-1 to 3

Parameter : Wind Speed / Wind Direction

Location : สถานีที่ 1 บริเวณ บมจ.ปิ่นเกล้าไทย (GPS 47P 0666344, 1526532)

Sampling Date : Nov 24 - Nov 27, 2022

Sampling by : Teeravut Sukdee

Time	Nov 24 - Nov 25, 2022		Nov 25 - Nov 26, 2022		Nov 26 - Nov 27, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	1.3	51.0	NE	0.4	48.0	NE	0.6	98.0	E	-	-	-	-	-
11:00 AM - 12:00 PM	1.9	16.0	NNE	1.7	27.0	NNE	0.5	243.0	WSW	-	-	-	-	-
12:00 PM - 01:00 PM	1.3	31.0	NNE	2.3	27.0	NNE	0.7	238.0	WSW	-	-	-	-	-
01:00 PM - 02:00 PM	1.5	105.0	ESE	1.0	16.0	NNE	0.4	219.0	SW	-	-	-	-	-
02:00 PM - 03:00 PM	2.3	25.0	NNE	0.0	-	-	0.2	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	0.0	-	-	0.1	-	-	0.3	231.0	SW	-	-	-	-	-
04:00 PM - 05:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	0.0	-	-	0.0	-	-	0.4	244.0	WSW	-	-	-	-	-
06:00 PM - 07:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.2	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.0	-	-	0.3	216.0	SW	0.0	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	0.0	-	-	0.3	21.0	NNE	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	0.0	-	-	0.1	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.0	-	-	0.0	-	-	0.4	17.0	NNE	-	-	-	-	-
01:00 AM - 02:00 AM	0.2	-	-	0.2	-	-	0.6	17.0	NNE	-	-	-	-	-
02:00 AM - 03:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	1.1	26.0	NNE	0.2	-	-	0.0	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	1.0	58.0	ENE	0.3	54.0	NE	0.2	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	1.0	9.0	N	0.0	-	-	0.4	32.0	NNE	-	-	-	-	-
06:00 AM - 07:00 AM	0.9	36.0	NE	0.0	-	-	0.6	17.0	NNE	-	-	-	-	-
07:00 AM - 08:00 AM	0.5	82.0	E	0.5	39.0	NE	0.6	21.0	NNE	-	-	-	-	-
08:00 AM - 09:00 AM	0.5	28.0	NNE	0.5	40.0	NE	0.9	24.0	NNE	-	-	-	-	-
09:00 AM - 10:00 AM	0.3	37.0	NE	0.0	-	-	0.4	33.0	NNE	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O : สัญญาเลขที่รฟท.จ.650089

Project Name :

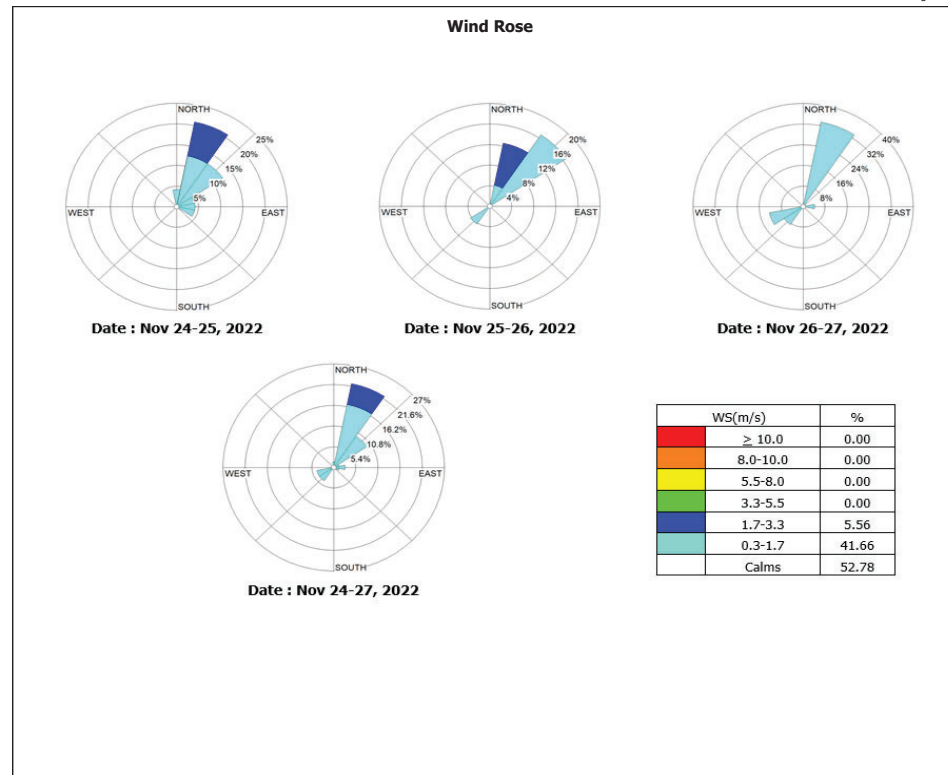
Project Location :

Lot ID : 22141039

Date Received : Nov 28, 2022

Date Reported : Dec 07, 2022

Report Number : 2496961-1



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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1

Sample Number : 22121098-4 to 6

Parameter : Wind Speed / Wind Direction

Location : สถานี 2 บริเวณถนนรถไฟ กม.11 (GPS 47P 0667277, 1528806)

Sampling Date : Oct 06 - Oct 09, 2022

Sampling by : Teeravut Sukdee

Time	Oct 06 - Oct 07, 2022		Oct 07 - Oct 08, 2022		Oct 08 - Oct 09, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	0.5	359.0	N	1.3	291.0	WNW	2.3	356.0	N	-	-	-	-	-
10:00 AM - 11:00 AM	0.2	-	-	0.0	-	-	1.5	55.0	NE	-	-	-	-	-
11:00 AM - 12:00 PM	0.2	-	-	1.6	50.0	NE	0.2	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	2.0	55.0	NE	0.2	-	-	0.0	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	0.2	-	-	0.0	-	-	305.0	NW	-	-	-	-	-	-
02:00 PM - 03:00 PM	1.6	207.0	SSW	0.1	-	-	0.4	265.0	W	-	-	-	-	-
03:00 PM - 04:00 PM	1.0	258.0	WSW	0.0	-	-	0.3	58.0	ENE	-	-	-	-	-
04:00 PM - 05:00 PM	0.0	-	-	0.0	-	-	0.4	52.0	NE	-	-	-	-	-
05:00 PM - 06:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.0	-	-	0.0	-	-	0.4	57.0	ENE	-	-	-	-	-
07:00 PM - 08:00 PM	0.2	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	0.0	-	-	0.2	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	0.0	-	-	0.4	40.0	NE	-	-	-	-	-
12:00 AM - 01:00 AM	0.0	-	-	0.0	-	-	0.6	40.0	NE	-	-	-	-	-
01:00 AM - 02:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.0	-	-	0.2	-	-	0.0	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.0	-	-	0.0	-	-	0.4	40.0	NE	-	-	-	-	-
05:00 AM - 06:00 AM	0.0	-	-	0.0	-	-	0.9	284.0	WNW	-	-	-	-	-
06:00 AM - 07:00 AM	0.0	-	-	0.0	-	-	0.2	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.8	43.0	NE	3.0	17.0	NNE	0.0	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.0	-	-	0.6	112.0	ESE	0.6	284.0	WNW	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jitranont
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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

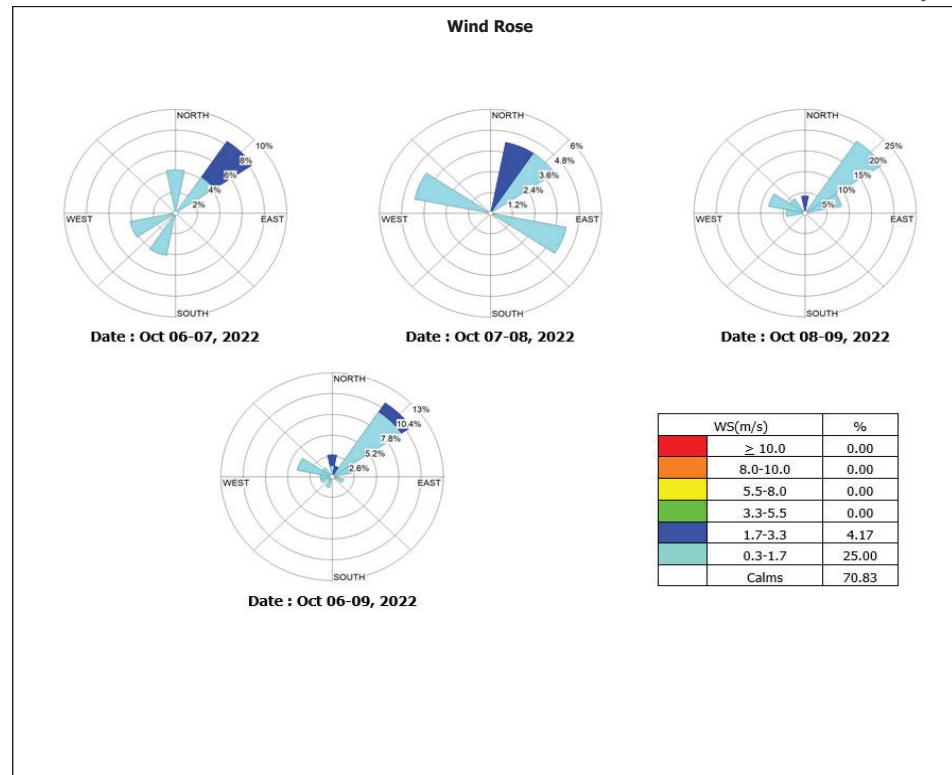
Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1



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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1

Sample Number : 22121098-7 to 9

Parameter : Wind Speed / Wind Direction

Location : สถานี 3 บริเวณวัดเสมียนนารี (GPS 47P 0668209, 1530561)

Sampling Date : Oct 06 - Oct 09, 2022

Sampling by : Teeravut Sukdee

Time	Oct 06 - Oct 07, 2022		Oct 07 - Oct 08, 2022		Oct 08 - Oct 09, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	1.7	98.0	E	0.0	-	-	0.0	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	0.0	-	-	0.8	128.0	SE	1.0	138.0	SE	-	-	-	-	-
12:00 PM - 01:00 PM	1.3	141.0	SE	0.0	-	-	0.7	146.0	SE	-	-	-	-	-
01:00 PM - 02:00 PM	1.4	153.0	SSE	0.8	146.0	SE	1.0	143.0	SE	-	-	-	-	-
02:00 PM - 03:00 PM	1.2	150.0	SSE	1.1	145.0	SE	1.3	141.0	SE	-	-	-	-	-
03:00 PM - 04:00 PM	2.7	139.0	SE	1.2	139.0	SE	0.0	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	1.3	120.0	ESE	0.0	-	-	0.6	130.0	SE	-	-	-	-	-
05:00 PM - 06:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.7	103.0	ESE	0.0	-	-	0.0	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	0.0	-	-	0.1	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	0.0	-	-	0.4	102.0	ESE	-	-	-	-	-
12:00 AM - 01:00 AM	0.0	-	-	0.0	-	-	0.6	96.0	E	-	-	-	-	-
01:00 AM - 02:00 AM	0.0	-	-	0.0	-	-	0.2	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.0	-	-	0.9	75.0	ENE	0.0	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.0	-	-	0.0	-	-	0.9	87.0	E	-	-	-	-	-
05:00 AM - 06:00 AM	0.0	-	-	0.0	-	-	0.6	89.0	E	-	-	-	-	-
06:00 AM - 07:00 AM	0.0	-	-	0.0	-	-	0.4	87.0	E	-	-	-	-	-
07:00 AM - 08:00 AM	0.0	-	-	0.4	76.0	ENE	0.4	91.0	E	-	-	-	-	-
08:00 AM - 09:00 AM	0.0	-	-	0.9	87.0	E	0.6	97.0	E	-	-	-	-	-
09:00 AM - 10:00 AM	0.0	-	-	0.0	-	-	0.9	101.0	E	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

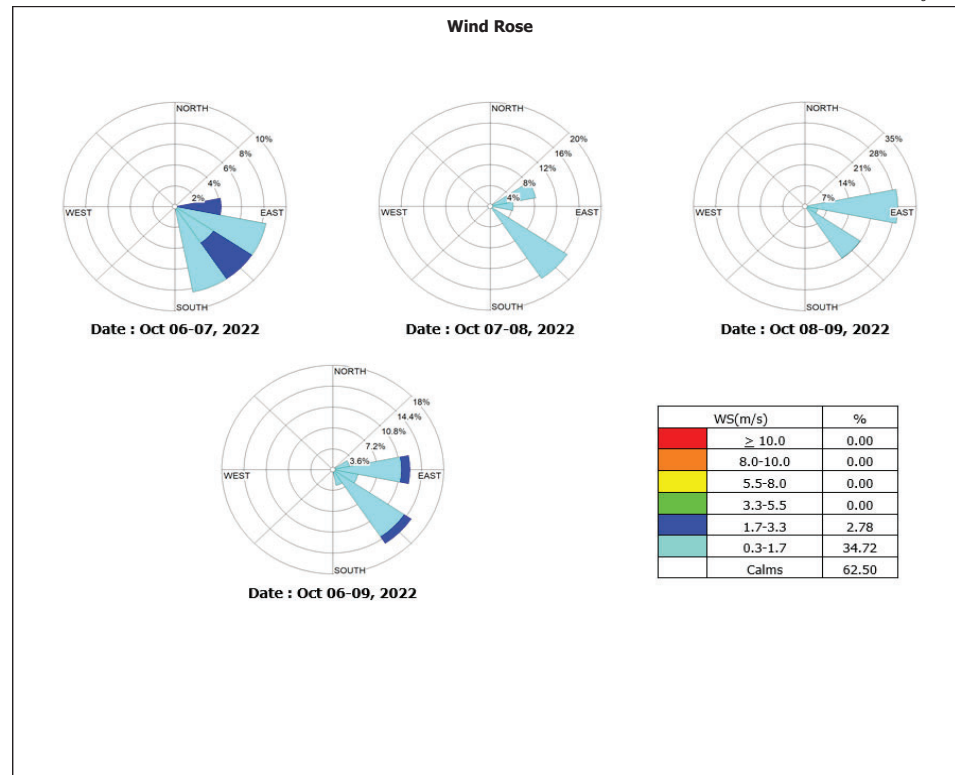
Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1



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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1

Sample Number : 22121098-10 to 12

Parameter : Wind Speed / Wind Direction

Location : สถานี 4 บริเวณโรงเรียนอนุบาลวัดสี่กั๊ก (GPS 47P 0668994, 1532102)

Sampling Date : Oct 06 - Oct 09, 2022

Sampling by : Teeravut Sukdee

Time	Oct 06 - Oct 07, 2022		Oct 07 - Oct 08, 2022		Oct 08 - Oct 09, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	0.1	-	1.4	180.0	S	0.8	277.0	W	-	-	-	-	-	-
12:00 PM - 01:00 PM	1.8	359.0	N	0.2	-	0.9	348.0	NNW	-	-	-	-	-	-
01:00 PM - 02:00 PM	0.0	-	0.0	-	2.3	343.0	NNW	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	0.3	67.0	ENE	0.6	170.0	S	0.0	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	0.4	189.0	S	0.2	-	0.1	-	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	1.2	198.0	SSW	0.0	-	1.5	187.0	S	-	-	-	-	-	-
05:00 PM - 06:00 PM	0.0	-	0.0	-	0.0	-	-	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.0	-	0.0	-	0.0	-	-	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.0	-	0.0	-	0.0	-	-	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.0	-	0.0	-	0.0	-	-	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.0	-	0.0	-	0.5	359.0	N	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	0.0	-	0.6	5.0	N	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.1	-	0.0	-	0.9	144.0	SE	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.6	198.0	SSW	0.0	-	0.8	144.0	SE	-	-	-	-	-	-
01:00 AM - 02:00 AM	0.4	198.0	SSW	0.0	-	0.4	144.0	SE	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.0	-	0.0	-	0.0	-	-	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.0	-	0.0	-	0.0	-	-	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.1	-	0.3	171.0	S	0.0	-	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.4	198.0	SSW	0.0	-	0.0	-	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.3	5.0	N	0.0	-	0.0	-	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.4	162.0	SSE	0.8	326.0	NW	0.0	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.2	-	0.3	351.0	N	0.3	359.0	N	-	-	-	-	-	-
09:00 AM - 10:00 AM	0.2	-	0.5	359.0	N	0.6	355.0	N	-	-	-	-	-	-
10:00 AM - 11:00 AM	0.0	-	0.5	313.0	NW	0.4	352.0	N	-	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

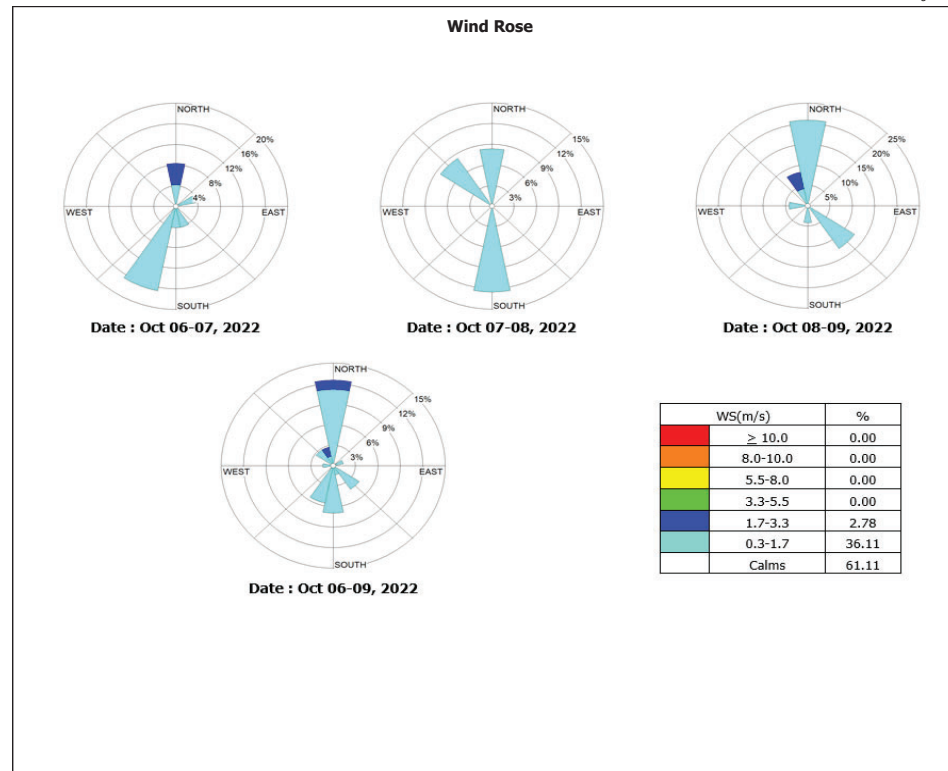
Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1



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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1

Sample Number : 22121098-13 to 15

Parameter : Wind Speed / Wind Direction

Location : สถานี 5 บริเวณโรงเรียนนางขน (GPS 47P 0669429, 1532940)

Sampling Date : Oct 06 - Oct 09, 2022

Sampling by : Teeravut Sukdee

Time	Oct 06 - Oct 07, 2022		Oct 07 - Oct 08, 2022		Oct 08 - Oct 09, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	1.4	62.0	ENE	0.4	203.0	SSW	0.5	180.0	S	-	-	-	-	-
01:00 PM - 02:00 PM	0.6	52.0	NE	0.6	22.0	NNE	0.2	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	0.4	209.0	SSW	0.3	22.0	NNE	0.5	217.0	SW	-	-	-	-	-
03:00 PM - 04:00 PM	1.4	213.0	SSW	0.9	22.0	NNE	0.9	58.0	ENE	-	-	-	-	-
04:00 PM - 05:00 PM	0.9	93.0	E	0.0	-	-	0.0	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	0.2	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.2	-	-	0.3	290.0	WNW	0.4	11.0	N	-	-	-	-	-
07:00 PM - 08:00 PM	0.5	295.0	WNW	0.8	288.0	WNW	0.4	11.0	N	-	-	-	-	-
08:00 PM - 09:00 PM	0.2	-	-	0.9	288.0	WNW	0.6	28.0	NNE	-	-	-	-	-
09:00 PM - 10:00 PM	0.0	-	-	0.4	288.0	WNW	0.5	326.0	NW	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	0.6	287.0	WNW	0.0	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.2	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.6	338.0	NNW	0.0	-	-	0.0	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.4	11.0	N	0.0	-	-	0.0	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.4	3.0	N	0.3	287.0	WNW	0.0	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.2	-	-	0.8	20.0	NNE	0.0	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	0.0	-	-	0.4	294.0	WNW	0.2	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	0.0	-	-	1.3	66.0	ENE	0.4	14.0	NNE	-	-	-	-	-
11:00 AM - 12:00 PM	0.6	213.0	SSW	0.4	351.0	N	0.7	21.0	NNE	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

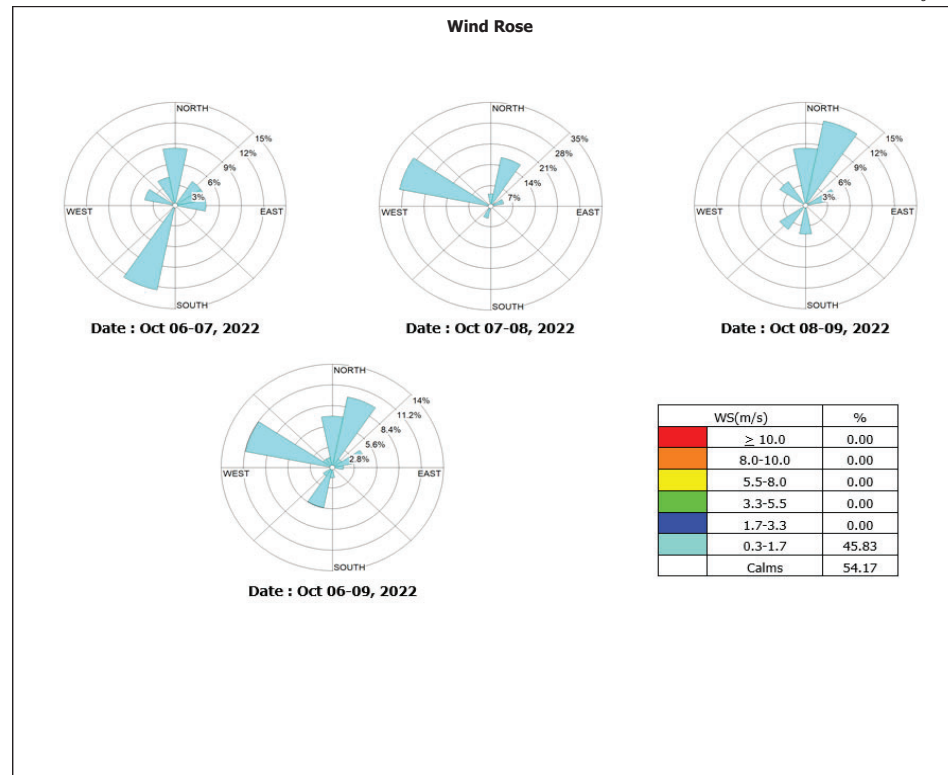
Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1



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Client : S.R.T. Electrified Train Company Limited

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Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1

Sample Number : 22121098-16 to 18

Parameter : Wind Speed / Wind Direction

Location : สถานี 6 บริเวณตลาดหลักสี่ (GPS 47P 0670745, 1505414)

Sampling Date : Oct 14 - Oct 17, 2022

Sampling by : Teeravut Sukdee

Time	Oct 14 - Oct 15, 2022		Oct 15 - Oct 16, 2022		Oct 16 - Oct 17, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	0.2	-	0.4	49.0	0.9	75.0	ENE	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	0.5	27.0	0.6	338.0	1.1	2.0	N	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	0.8	36.0	0.6	68.0	0.3	27.0	NNE	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	0.8	12.0	0.0	-	0.5	236.0	SW	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	0.0	-	1.6	33.0	0.4	293.0	WNW	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	0.0	-	0.5	49.0	0.9	299.0	WNW	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	0.4	137.0	2.6	43.0	0.7	260.0	W	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	0.0	-	2.3	32.0	0.2	-	-	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	0.0	-	1.5	24.0	0.6	262.0	W	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.0	-	2.8	13.0	0.4	293.0	WNW	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.0	-	1.6	28.0	0.5	292.0	WNW	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.0	-	3.1	13.0	0.9	269.0	W	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.0	-	1.2	359.0	0.5	306.0	NW	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	0.7	359.0	1.0	258.0	WSW	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	1.6	1.0	0.6	294.0	WNW	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.0	-	3.4	63.0	0.4	294.0	WNW	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	0.0	-	2.4	10.0	0.5	290.0	WNW	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.0	-	1.2	79.0	0.6	290.0	WNW	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.2	-	0.7	78.0	0.9	289.0	WNW	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.9	96.0	1.8	48.0	0.0	-	-	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.2	-	0.8	25.0	0.0	-	-	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	1.4	88.0	1.5	48.0	0.4	262.0	W	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	1.7	99.0	1.8	11.0	0.6	258.0	WSW	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.0	-	1.3	35.0	0.9	255.0	WSW	-	-	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

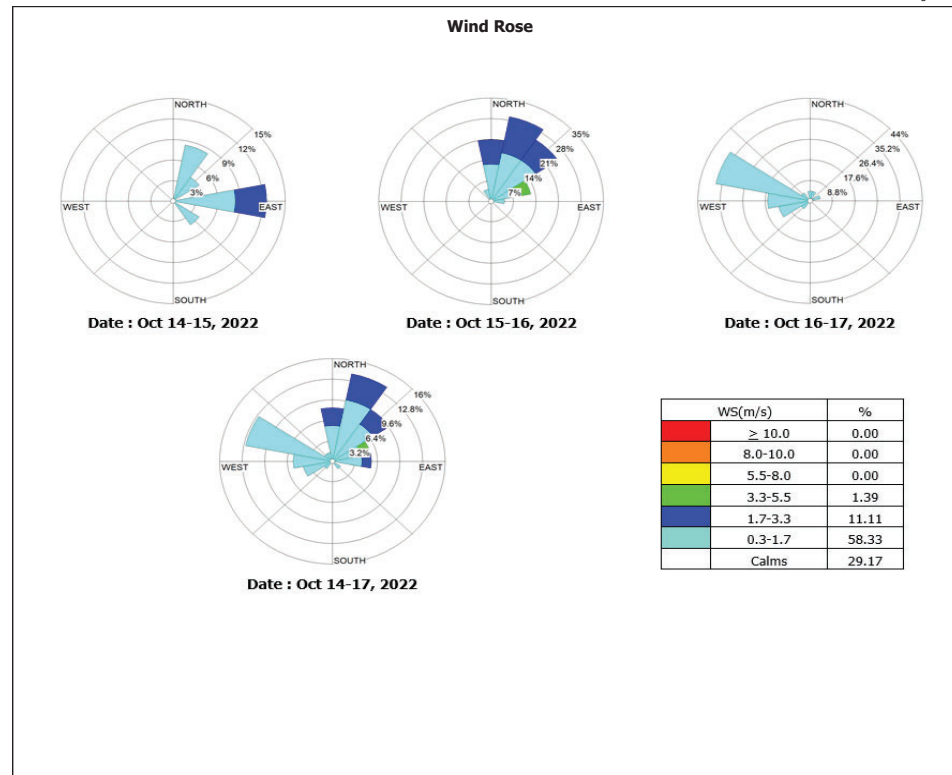
Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1



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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1

Sample Number : 22121098-19 to 21

Parameter : Wind Speed / Wind Direction

Location : สถานี 7 บริเวณขบวนรถเคทีอาร์ (GPS 47P 0671694, 1537166)

Sampling Date : Oct 20 - Oct 23, 2022

Sampling by : Teeravut Sukdee

Time	Oct 20 - Oct 21, 2022		Oct 21 - Oct 22, 2022		Oct 22 - Oct 23, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	0.4	36.0	NE	0.9	289.0	WNW	0.0	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	0.4	33.0	NNE	0.0	-	-	0.1	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	0.9	26.0	NNE	1.3	329.0	NNW	0.0	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	1.0	50.0	NE	0.0	-	-	0.0	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	1.0	333.0	NNW	0.0	-	-	0.0	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	1.1	269.0	W	0.0	-	-	0.5	302.0	WNW	-	-	-	-	-
07:00 PM - 08:00 PM	0.9	288.0	WNW	0.2	-	-	0.2	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	2.0	63.0	ENE	0.0	-	-	0.0	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	0.0	-	-	0.3	316.0	NW	0.1	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.0	-	-	0.4	306.0	NW	0.0	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.0	-	-	0.5	327.0	NNW	0.0	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.0	-	-	0.1	-	-	0.0	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.4	20.0	NNE	1.0	73.0	ENE	0.0	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.6	358.0	N	0.0	-	-	0.0	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.7	47.0	NE	1.1	53.0	NE	0.4	77.0	ENE	-	-	-	-	-
09:00 AM - 10:00 AM	0.0	-	-	0.5	58.0	ENE	0.6	78.0	ENE	-	-	-	-	-
10:00 AM - 11:00 AM	0.3	50.0	NE	0.2	-	-	0.9	90.0	E	-	-	-	-	-
11:00 AM - 12:00 PM	0.1	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	0.0	-	-	0.0	-	-	1.0	54.0	NE	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Assistant General Manager

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

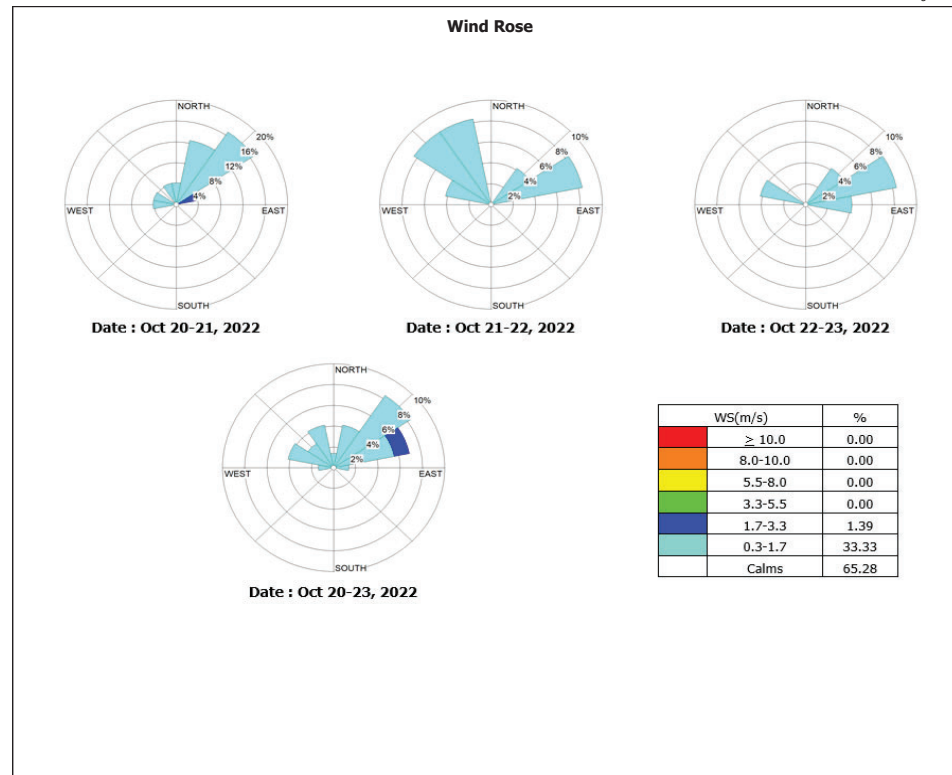
Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1



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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1

Sample Number : 22121098-22 to 24

Parameter : Wind Speed / Wind Direction

Location : สถานี 8 บริเวณวัดดอนเมือง (GPS 47P 0672925, 1539730)

Sampling Date : Oct 14 - Oct 17, 2022

Sampling by : Teeravut Sukdee

Time	Oct 14 - Oct 15, 2022		Oct 15 - Oct 16, 2022		Oct 16 - Oct 17, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	1.6	52.0	NE	2.0	83.0	E	1.6	111.0	ESE	-	-	-	-	-
11:00 AM - 12:00 PM	2.0	97.0	E	0.8	58.0	ENE	0.4	132.0	SE	-	-	-	-	-
12:00 PM - 01:00 PM	2.5	68.0	ENE	1.8	15.0	NNE	0.8	81.0	E	-	-	-	-	-
01:00 PM - 02:00 PM	3.8	51.0	NE	2.0	118.0	ESE	1.3	80.0	E	-	-	-	-	-
02:00 PM - 03:00 PM	0.3	69.0	ENE	0.1	-	-	0.8	81.0	E	-	-	-	-	-
03:00 PM - 04:00 PM	0.5	88.0	E	2.2	70.0	ENE	0.0	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	0.0	-	-	1.4	95.0	E	0.1	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	0.3	104.0	ESE	1.5	77.0	ENE	0.0	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.5	85.0	E	2.2	95.0	E	0.4	346.0	NNW	-	-	-	-	-
07:00 PM - 08:00 PM	0.0	-	-	2.6	97.0	E	0.0	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.0	-	-	2.0	80.0	E	0.5	313.0	NW	-	-	-	-	-
09:00 PM - 10:00 PM	0.0	-	-	0.6	253.0	WSW	0.2	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	3.4	65.0	ENE	0.0	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.3	97.0	E	3.9	51.0	NE	0.0	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.0	-	-	0.3	89.0	E	0.5	105.0	ESE	-	-	-	-	-
01:00 AM - 02:00 AM	0.0	-	-	0.3	71.0	ENE	0.0	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.0	-	-	1.3	62.0	ENE	0.0	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.5	68.0	ENE	1.2	120.0	ESE	0.4	59.0	ENE	-	-	-	-	-
04:00 AM - 05:00 AM	0.2	-	-	1.0	82.0	E	0.0	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.8	96.0	E	0.2	-	-	0.6	74.0	ENE	-	-	-	-	-
06:00 AM - 07:00 AM	0.3	45.0	NE	0.4	85.0	E	0.9	71.0	ENE	-	-	-	-	-
07:00 AM - 08:00 AM	0.8	70.0	ENE	1.1	70.0	ENE	0.4	66.0	ENE	-	-	-	-	-
08:00 AM - 09:00 AM	1.8	107.0	ESE	3.7	87.0	E	0.7	56.0	NE	-	-	-	-	-
09:00 AM - 10:00 AM	2.4	50.0	NE	2.4	75.0	ENE	0.6	43.0	NE	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

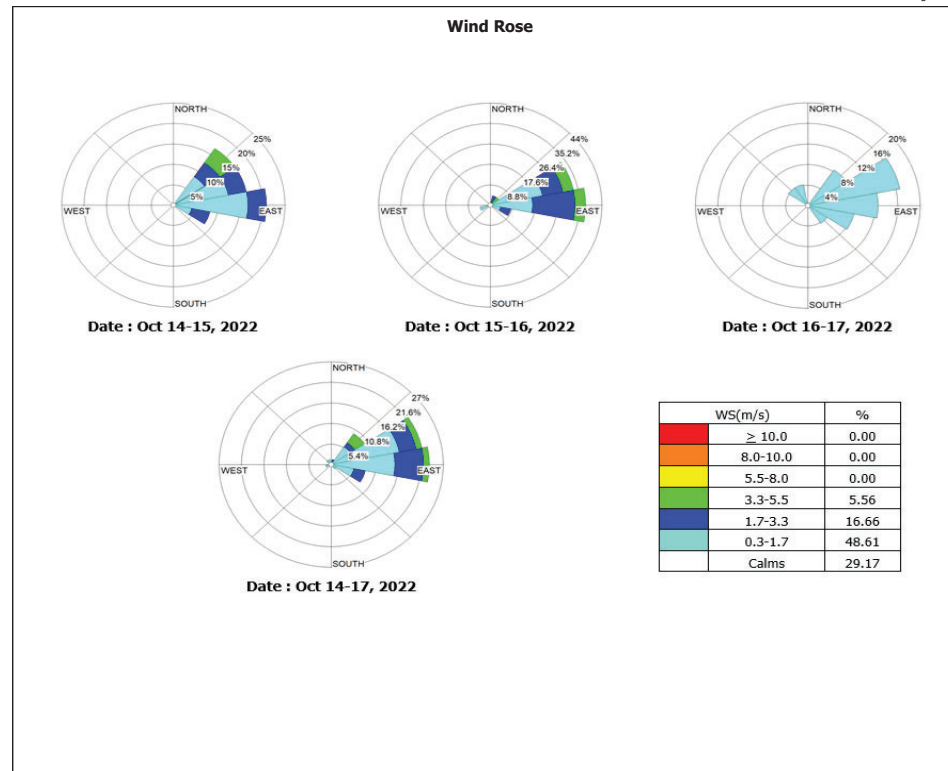
Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1



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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1

Sample Number : 22121098-25 to 27

Parameter : Wind Speed / Wind Direction

Location : สถานี 9 บริเวณหมู่บ้านปรีชา (GPS 47P 0673431, 1544718)

Sampling Date : Oct 14 - Oct 17, 2022

Sampling by : Teeravut Sukdee

Time	Oct 14 - Oct 15, 2022		Oct 15 - Oct 16, 2022		Oct 16 - Oct 17, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	0.6	0.0	N	2.4	94.0	E	0.5	40.0	NE	-	-	-	-	-
12:00 PM - 01:00 PM	3.5	8.0	N	1.0	14.0	NNE	3.2	22.0	NNE	-	-	-	-	-
01:00 PM - 02:00 PM	2.6	359.0	N	2.7	40.0	NE	0.8	359.0	N	-	-	-	-	-
02:00 PM - 03:00 PM	2.1	358.0	N	3.0	92.0	E	3.0	23.0	NNE	-	-	-	-	-
03:00 PM - 04:00 PM	1.6	295.0	WNW	0.3	64.0	ENE	0.4	6.0	N	-	-	-	-	-
04:00 PM - 05:00 PM	1.8	4.0	N	0.2	-	-	0.3	0.0	N	-	-	-	-	-
05:00 PM - 06:00 PM	0.4	15.0	NNE	0.0	-	-	0.3	341.0	NNW	-	-	-	-	-
06:00 PM - 07:00 PM	0.8	63.0	ENE	0.4	0.0	N	0.0	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.2	-	-	0.5	3.0	N	0.0	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.0	-	-	0.0	-	-	0.8	301.0	WNW	-	-	-	-	-
09:00 PM - 10:00 PM	0.0	-	-	1.9	1.0	N	0.2	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	0.8	39.0	NE	0.3	306.0	NW	-	-	-	-	-
12:00 AM - 01:00 AM	0.2	-	-	0.3	349.0	N	0.6	283.0	WNW	-	-	-	-	-
01:00 AM - 02:00 AM	0.0	-	-	1.7	341.0	NNW	0.0	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.0	-	-	1.2	55.0	NE	0.4	322.0	NW	-	-	-	-	-
03:00 AM - 04:00 AM	0.0	-	-	1.3	17.0	NNE	0.0	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.0	-	-	2.5	9.0	N	0.0	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.0	-	-	0.8	0.0	N	0.0	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.0	-	-	1.9	302.0	WNW	0.0	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.0	-	-	0.4	343.0	NNW	0.1	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.9	0.0	N	0.4	28.0	NNE	0.2	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	0.1	-	-	0.2	-	-	0.2	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	2.1	61.0	ENE	0.6	8.0	N	0.4	334.0	NNW	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

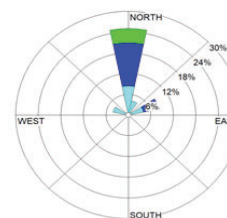
Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

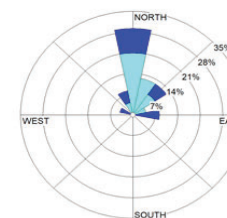
Report Number : 2451238-1

Page 2 of 2

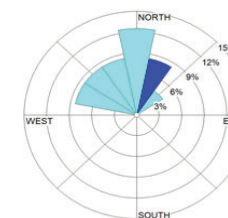
Wind Rose



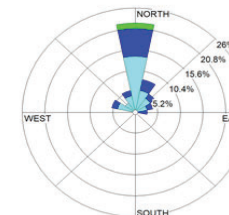
Date : Oct 14-15, 2022



Date : Oct 15-16, 2022



Date : Oct 16-17, 2022



Date : Oct 14-17, 2022

WS(m/s)	%
≥ 10.0	0.00
8.0-10.0	0.00
5.5-8.0	0.00
3.3-5.5	1.38
1.7-3.3	18.06
0.3-1.7	37.50
Calms	43.06

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Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1

Sample Number : 22121098-28 to 30

Parameter : Wind Speed / Wind Direction

Location : สถานี 10 บริเวณโรงเรียนรัตนโกสินทร์ รังสิต (GPS 47P 0673310, 1547277)

Sampling Date : Oct 14 - Oct 17, 2022

Sampling by : Teeravut Sukdee

Time	Oct 14 - Oct 15, 2022		Oct 15 - Oct 16, 2022		Oct 16 - Oct 17, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	0.6	58.0	ENE	0.6	63.0	ENE	1.0	346.0	NNW	-	-	-	-	-
01:00 PM - 02:00 PM	0.9	339.0	NNW	0.0	-	-	0.9	358.0	N	-	-	-	-	-
02:00 PM - 03:00 PM	1.0	332.0	NNW	0.9	21.0	NNE	0.9	332.0	NNW	-	-	-	-	-
03:00 PM - 04:00 PM	0.0	-	-	1.0	28.0	NNE	0.4	359.0	N	-	-	-	-	-
04:00 PM - 05:00 PM	0.4	310.0	NW	0.5	22.0	NNE	0.6	320.0	NW	-	-	-	-	-
05:00 PM - 06:00 PM	0.2	-	-	0.3	20.0	NNE	0.2	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.2	-	-	0.0	-	-	1.1	306.0	NW	-	-	-	-	-
07:00 PM - 08:00 PM	0.0	-	-	0.4	5.0	N	1.0	313.0	NW	-	-	-	-	-
08:00 PM - 09:00 PM	0.0	-	-	0.5	349.0	N	0.8	246.0	WSW	-	-	-	-	-
09:00 PM - 10:00 PM	0.4	42.0	NE	0.2	-	-	0.8	290.0	WNW	-	-	-	-	-
10:00 PM - 11:00 PM	0.5	71.0	ENE	0.5	338.0	NNW	0.4	290.0	WNW	-	-	-	-	-
11:00 PM - 12:00 AM	0.6	359.0	N	0.5	323.0	NW	0.5	302.0	WNW	-	-	-	-	-
12:00 AM - 01:00 AM	0.9	48.0	NE	0.0	-	-	0.4	288.0	WNW	-	-	-	-	-
01:00 AM - 02:00 AM	1.0	52.0	NE	0.0	-	-	0.8	244.0	WSW	-	-	-	-	-
02:00 AM - 03:00 AM	0.9	89.0	E	0.0	-	-	0.6	204.0	SSW	-	-	-	-	-
03:00 AM - 04:00 AM	0.6	92.0	E	1.0	359.0	N	0.9	235.0	SW	-	-	-	-	-
04:00 AM - 05:00 AM	0.4	47.0	NE	0.9	356.0	N	1.0	259.0	W	-	-	-	-	-
05:00 AM - 06:00 AM	0.4	47.0	NE	0.6	354.0	N	0.7	248.0	WSW	-	-	-	-	-
06:00 AM - 07:00 AM	0.0	-	-	0.0	-	-	0.9	297.0	WNW	-	-	-	-	-
07:00 AM - 08:00 AM	0.0	-	-	0.0	-	-	0.6	304.0	NW	-	-	-	-	-
08:00 AM - 09:00 AM	0.0	-	-	0.0	-	-	0.2	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	0.2	-	-	0.4	272.0	W	0.4	311.0	NW	-	-	-	-	-
10:00 AM - 11:00 AM	0.2	-	-	0.6	303.0	WNW	0.4	322.0	NW	-	-	-	-	-
11:00 AM - 12:00 PM	0.4	346.0	NNW	0.7	295.0	WNW	0.4	283.0	WNW	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

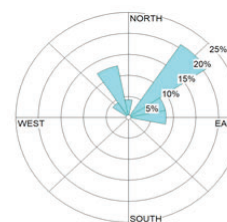
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Date Reported : Oct 31, 2022

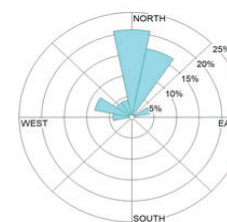
Report Number : 2451238-1

Page 2 of 2

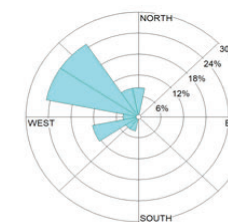
Wind Rose



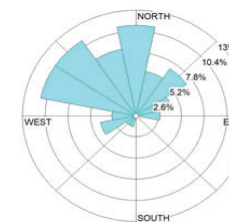
Date : Oct 14-15, 2022



Date : Oct 15-16, 2022



Date : Oct 16-17, 2022



Date : Oct 14-17, 2022

WS(m/s)	%
> 10.0	0.00
8.0-10.0	0.00
5.5-8.0	0.00
3.3-5.5	0.00
1.7-3.3	0.00
0.3-1.7	70.83
Calms	29.17

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22133465

Date Received : Nov 16, 2022

Date Reported : Nov 18, 2022

Report Number : 2480007-1

Sample Number : 22133465-4 to 6

Parameter : Wind Speed / Wind Direction

Location : สถานี 11 บริเวณพหลโยธินเพลส (GPS 47P 0672972, 1547425)

Sampling Date : Nov 10 - Nov 13, 2022

Sampling by : Teeravut Sukdee

Time	Nov 10 - Nov 11, 2022		Nov 11 - Nov 12, 2022		Nov 12 - Nov 13, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	0.3	355.0	N	1.9	4.0	N	1.0	325.0	NW	-	-	-	-	-
11:00 AM - 12:00 PM	0.3	14.0	NNE	1.4	0.0	N	1.2	323.0	NW	-	-	-	-	-
12:00 PM - 01:00 PM	0.5	355.0	N	0.3	317.0	NW	1.7	0.0	N	-	-	-	-	-
01:00 PM - 02:00 PM	1.7	2.0	N	1.4	329.0	NNW	0.8	302.0	WNW	-	-	-	-	-
02:00 PM - 03:00 PM	1.1	331.0	NNW	0.2	-	-	1.4	353.0	N	-	-	-	-	-
03:00 PM - 04:00 PM	1.2	342.0	NNW	0.0	-	-	1.4	339.0	NNW	-	-	-	-	-
04:00 PM - 05:00 PM	0.1	-	-	0.0	-	-	1.2	359.0	N	-	-	-	-	-
05:00 PM - 06:00 PM	0.1	-	-	0.4	315.0	NW	0.0	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.1	-	-	0.0	-	-	0.1	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	1.5	331.0	NNW	0.0	-	-	0.7	90.0	E	-	-	-	-	-
09:00 PM - 10:00 PM	1.4	1.0	N	0.0	-	-	0.6	358.0	N	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	1.3	354.0	N	0.3	345.0	NNW	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	0.0	-	-	0.3	359.0	N	-	-	-	-	-
12:00 AM - 01:00 AM	0.0	-	-	0.0	-	-	0.2	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	1.0	356.0	N	0.0	-	-	0.0	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.7	18.0	NNE	0.0	-	-	0.0	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	1.0	346.0	NNW	0.7	337.0	NNW	0.0	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	1.2	359.0	N	0.0	-	-	0.3	359.0	N	-	-	-	-	-
06:00 AM - 07:00 AM	0.2	-	-	0.0	-	-	0.5	316.0	NW	-	-	-	-	-
07:00 AM - 08:00 AM	0.6	13.0	NNE	1.2	3.0	N	0.7	287.0	WNW	-	-	-	-	-
08:00 AM - 09:00 AM	0.7	327.0	NNW	1.3	58.0	ENE	0.9	290.0	WNW	-	-	-	-	-
09:00 AM - 10:00 AM	0.7	145.0	SE	1.7	1.0	N	0.6	294.0	WNW	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

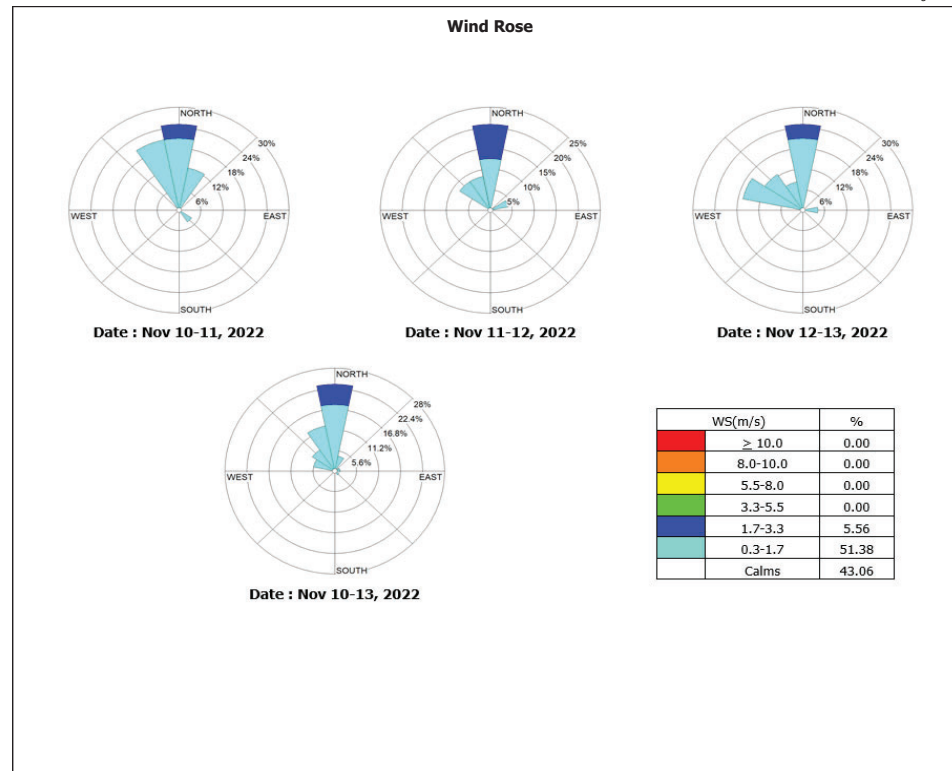
Project Location :

Lot ID : 22133465

Date Received : Nov 16, 2022

Date Reported : Nov 18, 2022

Report Number : 2480007-1



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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1

Sample Number : 22121098-34 to 36

Parameter : Wind Speed / Wind Direction

Location : สถานี 12 บริเวณอาคารพักอาศัยเมโทรสกาย ประชานิ (GPS 47P 0665944, 1528587)

Sampling Date : Oct 20 - Oct 23, 2022

Sampling by : Teeravut Sukdee

Time	Oct 20 - Oct 21, 2022		Oct 21 - Oct 22, 2022		Oct 22 - Oct 23, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	0.9	245.0	WSW	0.0	-	-	0.6	261.0	W	-	-	-	-	-
01:00 PM - 02:00 PM	0.4	213.0	SSW	0.5	328.0	NNW	0.0	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	1.2	288.0	WNW	2.9	317.0	NW	0.0	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	0.0	-	-	2.2	320.0	NW	0.9	301.0	WNW	-	-	-	-	-
04:00 PM - 05:00 PM	0.0	-	-	3.0	317.0	NW	2.7	306.0	NW	-	-	-	-	-
05:00 PM - 06:00 PM	0.0	-	-	1.9	315.0	NW	0.8	343.0	NNW	-	-	-	-	-
06:00 PM - 07:00 PM	1.2	277.0	W	2.2	305.0	NW	0.9	80.0	E	-	-	-	-	-
07:00 PM - 08:00 PM	1.7	311.0	NW	1.5	294.0	WNW	0.0	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.8	242.0	WSW	0.5	311.0	NW	0.4	242.0	WSW	-	-	-	-	-
09:00 PM - 10:00 PM	0.3	159.0	SSE	1.3	313.0	NW	0.1	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	0.7	293.0	WNW	0.2	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.1	-	-	0.0	-	-	0.3	93.0	E	-	-	-	-	-
12:00 AM - 01:00 AM	0.0	-	-	0.0	-	-	0.5	70.0	ENE	-	-	-	-	-
01:00 AM - 02:00 AM	0.0	-	-	0.0	-	-	0.8	291.0	WNW	-	-	-	-	-
02:00 AM - 03:00 AM	0.0	-	-	0.0	-	-	0.4	304.0	NW	-	-	-	-	-
03:00 AM - 04:00 AM	0.0	-	-	0.0	-	-	1.1	252.0	WSW	-	-	-	-	-
04:00 AM - 05:00 AM	0.0	-	-	0.0	-	-	0.3	292.0	WNW	-	-	-	-	-
05:00 AM - 06:00 AM	0.2	-	-	0.0	-	-	0.3	255.0	WSW	-	-	-	-	-
06:00 AM - 07:00 AM	0.0	-	-	0.0	-	-	0.7	241.0	WSW	-	-	-	-	-
07:00 AM - 08:00 AM	0.0	-	-	2.4	300.0	WNW	0.9	242.0	WSW	-	-	-	-	-
08:00 AM - 09:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	1.5	77.0	ENE	1.2	249.0	WSW	0.0	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	1.8	323.0	NW	0.0	-	-	0.6	161.0	SSE	-	-	-	-	-
11:00 AM - 12:00 PM	0.6	260.0	W	0.0	-	-	0.4	159.0	SSE	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

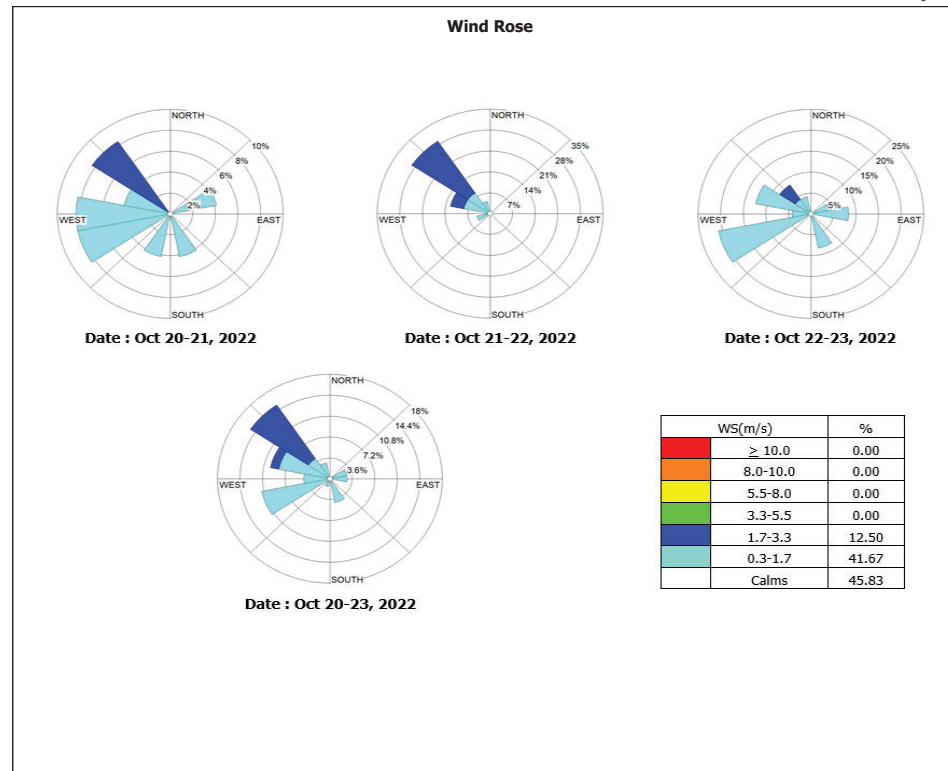
Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1



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Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1

Sample Number : 22121098-37 to 39

Parameter : Wind Speed / Wind Direction

Location : สถานี 13 บริเวณขบวนสีจันทร (GPS 47P 0659717, 1525104)

Sampling Date : Oct 20 - Oct 23, 2022

Sampling by : Teeravut Sukdee

Time	Oct 20 - Oct 21, 2022		Oct 21 - Oct 22, 2022		Oct 22 - Oct 23, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	0.9	15.0	NNE	0.0	-	-	3.4	19.0	NNE	-	-	-	-	-
12:00 PM - 01:00 PM	2.7	16.0	NNE	0.0	-	-	0.6	93.0	E	-	-	-	-	-
01:00 PM - 02:00 PM	0.4	349.0	N	0.3	359.0	N	2.5	21.0	NNE	-	-	-	-	-
02:00 PM - 03:00 PM	1.4	98.0	E	0.3	38.0	NE	1.9	88.0	E	-	-	-	-	-
03:00 PM - 04:00 PM	2.2	4.0	N	0.7	277.0	W	1.4	85.0	E	-	-	-	-	-
04:00 PM - 05:00 PM	0.6	146.0	SE	0.9	354.0	N	0.4	62.0	ENE	-	-	-	-	-
05:00 PM - 06:00 PM	0.3	171.0	S	1.1	346.0	NNW	0.9	252.0	WSW	-	-	-	-	-
06:00 PM - 07:00 PM	0.3	42.0	NE	0.5	14.0	NNE	0.8	307.0	NW	-	-	-	-	-
07:00 PM - 08:00 PM	0.5	9.0	N	0.5	59.0	ENE	0.8	165.0	SSE	-	-	-	-	-
08:00 PM - 09:00 PM	0.3	354.0	N	0.5	43.0	NE	0.0	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.8	46.0	NE	0.4	296.0	WNW	0.0	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	0.7	7.0	N	0.3	14.0	NNE	-	-	-	-	-
11:00 PM - 12:00 AM	1.8	102.0	ESE	0.1	-	-	0.1	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.3	52.0	NE	0.8	266.0	W	1.1	199.0	SSW	-	-	-	-	-
01:00 AM - 02:00 AM	0.4	28.0	NNE	0.5	357.0	N	0.0	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.4	65.0	ENE	0.9	310.0	NW	0.0	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.4	101.0	E	0.4	342.0	NNW	0.0	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.0	-	-	0.3	293.0	WNW	0.1	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.3	359.0	N	0.3	279.0	W	0.3	4.0	N	-	-	-	-	-
08:00 AM - 09:00 AM	0.9	66.0	ENE	1.0	39.0	NE	0.4	10.0	N	-	-	-	-	-
09:00 AM - 10:00 AM	1.8	65.0	ENE	1.4	28.0	NNE	0.6	17.0	NNE	-	-	-	-	-
10:00 AM - 11:00 AM	0.7	29.0	NNE	1.0	92.0	E	0.9	20.0	NNE	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

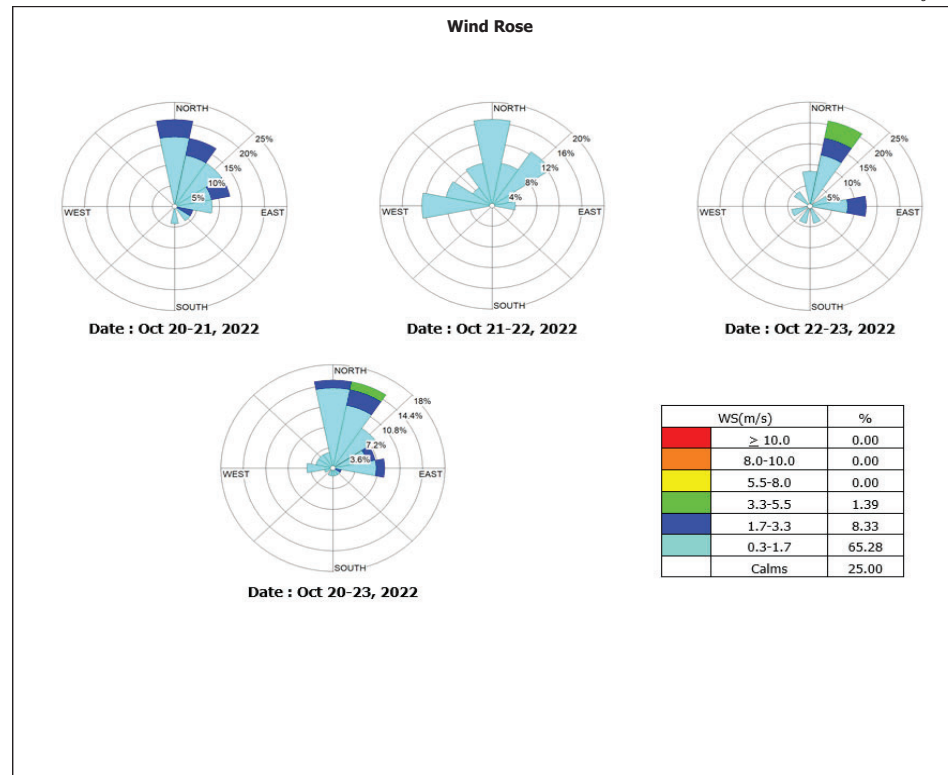
Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1



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Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1

Sample Number : 22121098-40 to 42

Parameter : Wind Speed / Wind Direction

Location : สถานี 14 บริเวณถนนจันทพล (GPS 47P 0655246, 1524406)

Sampling Date : Oct 20 - Oct 23, 2022

Sampling by : Teeravut Sukdee

Time	Oct 20 - Oct 21, 2022		Oct 21 - Oct 22, 2022		Oct 22 - Oct 23, 2022		-		-		-		-	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	0.6	260.0	W	0.0	-	-	0.0	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	0.4	59.0	ENE	0.0	-	-	0.0	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	0.4	28.0	NNE	0.0	-	-	0.2	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	0.2	-	-	0.0	-	-	0.8	131.0	SE	-	-	-	-	-
02:00 PM - 03:00 PM	0.0	-	-	0.0	-	-	0.7	133.0	SE	-	-	-	-	-
03:00 PM - 04:00 PM	0.0	-	-	0.0	-	-	0.2	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	0.0	-	-	0.0	-	-	0.4	272.0	W	-	-	-	-	-
05:00 PM - 06:00 PM	0.0	-	-	0.4	262.0	W	0.5	203.0	SSW	-	-	-	-	-
06:00 PM - 07:00 PM	0.0	-	-	0.5	204.0	SSW	0.6	246.0	WSW	-	-	-	-	-
07:00 PM - 08:00 PM	0.6	46.0	NE	0.5	204.0	SSW	0.9	183.0	S	-	-	-	-	-
08:00 PM - 09:00 PM	0.4	47.0	NE	0.6	204.0	SSW	0.0	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.9	47.0	NE	0.9	204.0	SSW	0.2	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	1.0	45.0	NE	1.1	204.0	SSW	0.5	247.0	WSW	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	0.7	258.0	WSW	1.0	247.0	WSW	-	-	-	-	-
12:00 AM - 01:00 AM	0.0	-	-	0.4	245.0	WSW	0.6	244.0	WSW	-	-	-	-	-
01:00 AM - 02:00 AM	0.7	68.0	ENE	0.4	248.0	WSW	0.8	156.0	SSE	-	-	-	-	-
02:00 AM - 03:00 AM	0.6	41.0	NE	0.2	-	-	0.2	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.4	70.0	ENE	0.2	-	-	0.0	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	1.0	72.0	ENE	0.0	-	-	0.0	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.9	72.0	ENE	0.0	-	-	0.0	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.7	72.0	ENE	0.0	-	-	0.4	214.0	SW	-	-	-	-	-
09:00 AM - 10:00 AM	0.6	41.0	NE	0.0	-	-	0.4	210.0	SSW	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jittrantont
Assistant General Manager

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

P/O :

Project Name :

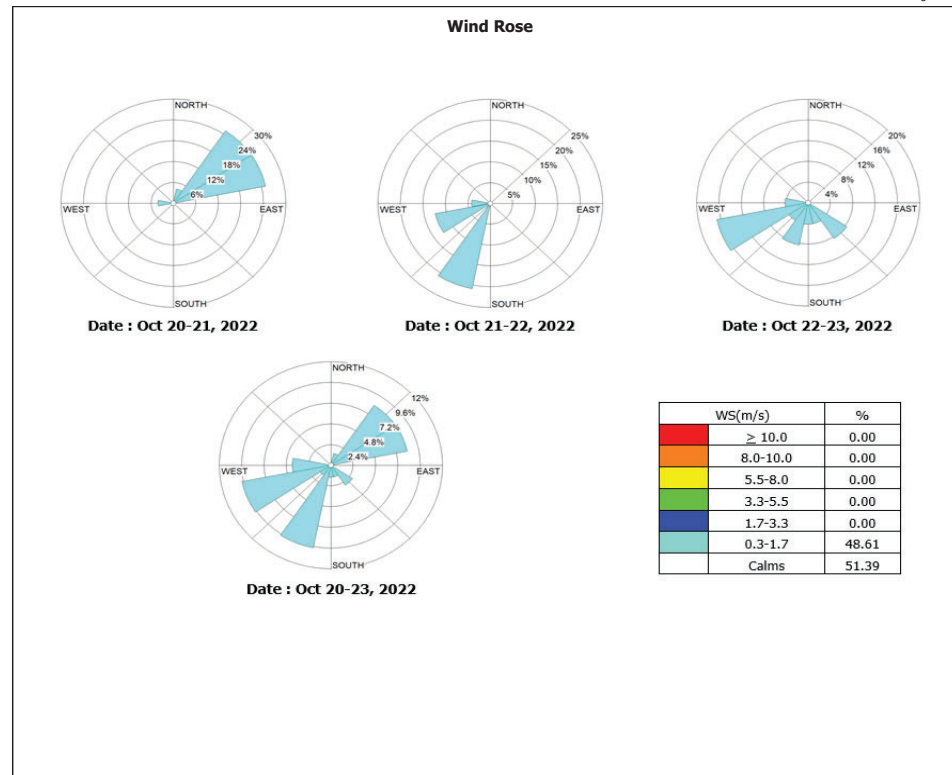
Project Location :

Lot ID : 22121098

Date Received : Oct 24, 2022

Date Reported : Oct 31, 2022

Report Number : 2451238-1



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Approved by

Sarayuth Jittrantont
Assistant General Manager

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ภาคผนวก ค-2

ระดับเสียง



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O : สัญญาเลขที่รฟท.จ.650089

Project Name :

Project Location :

Lot ID: 22141040

Date Received : Nov 28, 2022

Date Reported : Dec 02, 2022

Report Number: 2508384-1

Page 1 of 1

Sample Number 22141040-1
Parameter Noise (Leq 24 hrs.)
Location สถานีที่ 1 บริเวณ มนจ.ปิ่นเกล้าไทย (GPS 47P 0666368, 1526538)
Measurement Date Nov 24 - Nov 25, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 572565

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	60.1	84.5	54.3
11:00 AM - 12:00 PM	59.5	79.6	54.1
12:00 PM - 01:00 PM	59.3	79.4	54.0
01:00 PM - 02:00 PM	59.5	82.7	53.8
02:00 PM - 03:00 PM	58.5	74.2	53.6
03:00 PM - 04:00 PM	60.3	76.1	55.4
04:00 PM - 05:00 PM	59.5	73.8	55.9
05:00 PM - 06:00 PM	64.5	100.6	55.6
06:00 PM - 07:00 PM	64.1	88.7	59.0
07:00 PM - 08:00 PM	60.3	76.0	56.4
08:00 PM - 09:00 PM	61.2	83.6	57.2
09:00 PM - 10:00 PM	59.5	81.8	55.1
10:00 PM - 11:00 PM	58.4	77.0	53.9
11:00 PM - 12:00 AM	54.0	73.7	50.2
12:00 AM - 01:00 AM	52.8	70.8	48.6
01:00 AM - 02:00 AM	55.1	76.0	48.2
02:00 AM - 03:00 AM	55.2	79.2	48.6
03:00 AM - 04:00 AM	55.7	76.7	48.4
04:00 AM - 05:00 AM	58.9	78.1	50.4
05:00 AM - 06:00 AM	62.3	80.8	53.7
06:00 AM - 07:00 AM	59.8	80.3	55.7
07:00 AM - 08:00 AM	61.6	85.8	56.9
08:00 AM - 09:00 AM	60.4	81.3	55.4
09:00 AM - 10:00 AM	59.6	80.3	55.0

Leq Average 24 hrs. (dB(A))

60.0

Lmax (dB(A))

100.6

L90 (dB(A))

54.1

Ldn (dB(A))

64.9

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ

โรงงาน พ.ศ. 2548

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (8:30PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O : สัญญาเลขที่รฟท.จ.650089

Project Name :

Project Location :

Lot ID: 22141040

Date Received : Nov 28, 2022

Date Reported : Dec 02, 2022

Report Num-er: 250838541

Page 1 of 1

Sample Number 221b10b042
Parameter Noise (Leq 2b hrs.)
Location สถานีที่ 1 บริเวณ มนจ.ปิ่นเกล้าไทย (GPS b7P 0666368, 1526538)
Measurement Date Nov 25 4 Nov 26, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 572565

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM 4 11:00 AM	60.8	76.6	5b.6
11:00 AM 4 12:00 PM	60.0	79.9	5b.2
12:00 PM 4 01:00 PM	59.b	76.5	5b.1
01:00 PM 4 02:00 PM	6b.0	8b.5	5b.6
02:00 PM 4 03:00 PM	59.2	80.1	53.8
03:00 PM 4 0b:00 PM	61.6	77.1	55.b
0b:00 PM 4 05:00 PM	61.0	80.2	56.3
05:00 PM 4 06:00 PM	60.3	78.0	55.7
06:00 PM 4 07:00 PM	60.6	82.b	55.7
07:00 PM 4 08:00 PM	65.6	86.1	58.6
08:00 PM 4 09:00 PM	61.9	83.7	57.0
09:00 PM 4 10:00 PM	59.0	71.2	56.0
10:00 PM 4 11:00 PM	59.1	77.8	55.1
11:00 PM 4 12:00 AM	55.8	73.2	50.2
12:00 AM 4 01:00 AM	55.1	76.0	b9.7
01:00 AM 4 02:00 AM	5b.2	76.6	b8.3
02:00 AM 4 03:00 AM	51.7	71.5	b7.b
03:00 AM 4 0b:00 AM	55.9	73.2	b7.2
0b:00 AM 4 05:00 AM	60.0	81.2	50.2
05:00 AM 4 06:00 AM	60.3	79.5	52.b
06:00 AM 4 07:00 AM	58.8	7b.7	5b.0
07:00 AM 4 08:00 AM	58.5	73.0	53.5
08:00 AM 4 09:00 AM	59.1	79.b	53.3
09:00 AM 4 10:00 AM	59.0	77.b	5b.b

Leq Average 2b hrs. (dB(A))

60.1

Lmax (dB(A))

86.1

L90 (dB(A))

5b.1

Ldn (dB(A))

6b.7

Standard (dB(A))

70

115

Reference Method : ISO199641 and 199642

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 25b0) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ

โรงงาน พ.ศ. 25b8

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (b)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (8:30PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O : สัญญาเลขที่รฟท.จ.650089

Project Name :

Project Location :

Lot ID: 22141040

Date Received : Nov 28, 2022

Date Reported : Dec 02, 2022

Report Num-er: 25083864I

Page 1 of 1

Sample Number	221b10b048
Parameter	Noise (Leq 2b hrs.)
Location	สถานีที่ 1 บริเวณ บมจ.ปิ่นเกล้าไทย (GPS b7P 0666368, 1526538)
Measurement Date	Nov 26 4 Nov 27, 2022
Measurement by	Teeravut Sukdee
Sound Level meter	Serial No. 572565

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM 411:00 AM	58.1	75.0	53.9
11:00 AM 412:00 PM	58.7	78.9	53.6
12:00 PM 401:00 PM	58.1	73.b	53.1
01:00 PM 402:00 PM	59.2	80.8	53.3
02:00 PM 403:00 PM	59.9	77.8	53.8
03:00 PM 40b:00 PM	60.6	81.5	5b.5
0b:00 PM 405:00 PM	60.7	80.7	5b.2
05:00 PM 406:00 PM	60.3	85.b	53.8
06:00 PM 407:00 PM	58.7	80.6	52.6
07:00 PM 408:00 PM	60.3	8b.7	51.3
08:00 PM 409:00 PM	55.9	75.7	5b.1
09:00 PM 410:00 PM	56.3	83.3	5b.8
10:00 PM 411:00 PM	52.3	70.8	5b.2
11:00 PM 412:00 AM	6b.b	8b.3	5b.3
12:00 AM 401:00 AM	59.2	77.6	53.6
01:00 AM 402:00 AM	59.b	70.3	53.b
02:00 AM 403:00 AM	60.1	75.5	55.0
03:00 AM 40b:00 AM	58.2	7b.0	5b.7
0b:00 AM 405:00 AM	60.1	70.8	56.0
05:00 AM 406:00 AM	59.1	70.1	55.6
06:00 AM 407:00 AM	59.7	77.9	56.5
07:00 AM 408:00 AM	61.3	79.1	56.b
08:00 AM 409:00 AM	60.9	75.0	57.2
09:00 AM 410:00 AM	60.3	7b.6	57.3

Leq Average 2b hrs. (dB(A))

59.7

Lmax (dB(A))

85.b

L90 (dB(A))

53.8

Ldn (dB(A))

66.b

Standard (dB(A))

70

115

Reference Method : ISO19964I and 199642

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 25b0) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 25b8

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (b)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (8:31PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477626-1

Page 1 of 1

Sample Number	22121123-4
Parameter	Noise (Leq 24 hrs.)
Location	สถานีที่ 2 บริเวณนิคมรถไฟ กม.11 (GPS 47P 0667288, 1528822)
Measurement Date	Oct 06 - Oct 07, 2022
Measurement by	Teeravut Sukdee
Sound Level meter	Serial No. 1122504

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	66.3	87.9	63.3
10:00 AM - 11:00 AM	66.2	87.4	63.0
11:00 AM - 12:00 PM	65.9	90.8	63.0
12:00 PM - 01:00 PM	65.5	80.4	63.1
01:00 PM - 02:00 PM	67.5	97.0	63.1
02:00 PM - 03:00 PM	67.6	91.6	63.3
03:00 PM - 04:00 PM	67.1	90.1	63.4
04:00 PM - 05:00 PM	67.0	91.7	63.4
05:00 PM - 06:00 PM	66.9	84.0	62.5
06:00 PM - 07:00 PM	64.4	89.7	61.8
07:00 PM - 08:00 PM	64.3	92.2	61.5
08:00 PM - 09:00 PM	67.8	95.1	63.2
09:00 PM - 10:00 PM	65.3	85.0	60.1
10:00 PM - 11:00 PM	63.4	87.9	58.1
11:00 PM - 12:00 AM	60.2	74.7	55.1
12:00 AM - 01:00 AM	59.0	81.6	52.4
01:00 AM - 02:00 AM	60.4	81.8	51.6
02:00 AM - 03:00 AM	58.6	80.6	51.4
03:00 AM - 04:00 AM	62.1	86.3	52.0
04:00 AM - 05:00 AM	63.3	97.4	56.2
05:00 AM - 06:00 AM	65.1	80.3	61.6
06:00 AM - 07:00 AM	65.8	79.7	64.1
07:00 AM - 08:00 AM	67.2	91.8	63.8
08:00 AM - 09:00 AM	67.2	87.7	63.4

Leq Average 24 hrs. (dB(A))

65.5

Lmax (dB(A))

97.4

L90 (dB(A))

62.5

Ldn (dB(A))

69.9

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:42PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477627-1

Page 1 of 1

Sample Number 22121123-(
Parameter Noise d.e) 24 hrs.8
Location สถานีที่ 2 บริเวณนิคมรถไฟ กม.11 GPS 47P 0667255, 1(255228
Measurement Date Oct 07 - Oct 05, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 1122(04

Time	Le) dB(A)	Lmax dB(A)	L90 dB(A)
09:00 AM - 10:00 AM	66.2	90.3	63.1
10:00 AM - 11:00 AM	67.7	97.6	63.3
11:00 AM - 12:00 PM	66.9	59.1	63.2
12:00 PM - 01:00 PM	66.4	57.2	63.0
01:00 PM - 02:00 PM	66.0	57.5	63.1
02:00 PM - 03:00 PM	67.5	92.0	62.7
03:00 PM - 04:00 PM	66.0	56.7	61.6
04:00 PM - 05:00 PM	63.9	56.7	61.6
05:00 PM - 06:00 PM	65.3	90.5	60.0
06:00 PM - 07:00 PM	64.3	52.3	61.1
07:00 PM - 08:00 PM	64.4	53.9	60.0
08:00 PM - 09:00 PM	66.4	91.5	61.4
09:00 PM - 10:00 PM	66.7	95.1	61.2
10:00 PM - 11:00 PM	66.0	90.1	61.2
11:00 PM - 12:00 AM	64.3	50.1	61.1
12:00 AM - 01:00 AM	62.6	51.5	61.6
01:00 AM - 02:00 AM	61.9	51.9	62.1
02:00 AM - 03:00 AM	61.9	72.9	61.6
03:00 AM - 04:00 AM	61.4	53.3	61.6
04:00 AM - 05:00 AM	62.5	51.3	61.6
05:00 AM - 06:00 AM	64.2	53.0	61.6
06:00 AM - 07:00 AM	66.4	93.7	62.6
07:00 AM - 08:00 AM	66.3	55.6	63.7
08:00 AM - 09:00 AM	65.0	93.2	63.5

Le) Average 24 hrs. dB(A)

60.7

Lmax dB(A)

95.1

L90 dB(A)

60.0

Ldn dB(A)

70.0

Standard dB(A)

70

110

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 1(พ.ศ. 2548) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ

โรงงาน พ.ศ. 2545

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q8

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:35PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 247762-NL

Page 1 of 1

Sample Number 2212112(N6
Parameter boise d.e) 24 hrs.8
Location สถานีที่ 2 บริเวณนิคมรถไฟ กม.11 GPS 47P 06672- , 152--228
Measurement Date Oct 0- NOct 09, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial no. 1122504

Time	Le) dB(A)	Lmax dB(A)	L90 dB(A)
09:00 AM N10:00 AM	67.2	-9.-	60.5
10:00 AM N11:00 AM	65.4	96.-	60.9
11:00 AM N12:00 PM	65.2	-7.4	61.0
12:00 PM N01:00 PM	65.5	92.0	60.0
01:00 PM N02:00 PM	66.2	-9.2	60.0
02:00 PM N03:00 PM	65.9	-9.1	62.-
03:00 PM N04:00 PM	64.9	-2.9	62.5
04:00 PM N05:00 PM	66.0	91.9	60.1
05:00 PM N06:00 PM	67.0	-7.4	62.4
06:00 PM N07:00 PM	64.-	-0.0	62.2
07:00 PM N08:00 PM	65.-	95.-	61.9
08:00 PM N09:00 PM	64.0	-1.9	60.9
09:00 PM N10:00 PM	67.0	99.1	60.1
10:00 PM N11:00 PM	64.5	-7.7	59.7
11:00 PM N12:00 AM	60.7	77.4	56.4
12:00 AM N01:00 AM	59.1	72.0	50.6
01:00 AM N02:00 AM	59.9	76.1	51.7
02:00 AM N03:00 AM	62.5	-4.2	51.9
03:00 AM N04:00 AM	60.7	-7.5	50.2
04:00 AM N05:00 AM	60.5	-4.9	56.4
05:00 AM N06:00 AM	65.0	92.-	59.-
06:00 AM N07:00 AM	60.-	91.-	61.6
07:00 AM N08:00 AM	67.9	92.-	60.0
08:00 AM N09:00 AM	66.6	-2.-	60.5

Le) Average 24 hrs. dB(A)

65.4

Lmax dB(A)

99.1

L90 dB(A)

60.9

Ldn dB(A)

70.7

Standard dB(A)

70

115

Reference Method : ISO1996N and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 พ.ศ. 2548 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ

โรงงาน พ.ศ. 254-

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q8

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:35PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477629-1

Page 1 of 1

Sample Number 22121123-7
Parameter Noise (Leq 24 hrs.)
Location สถานีที่ 3 บริเวณวัดเสมียนนารี (GPS 47P 0668217, 1530582)
Measurement Date Oct 06 - Oct 07, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 572564

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	69.7	102.8	60.9
11:00 AM - 12:00 PM	64.9	86.6	59.4
12:00 PM - 01:00 PM	64.5	90.4	60.1
01:00 PM - 02:00 PM	64.3	86.7	58.6
02:00 PM - 03:00 PM	63.7	84.5	58.3
03:00 PM - 04:00 PM	66.0	88.9	61.0
04:00 PM - 05:00 PM	65.1	81.5	61.8
05:00 PM - 06:00 PM	68.7	93.4	60.9
06:00 PM - 07:00 PM	65.4	89.5	60.6
07:00 PM - 08:00 PM	66.5	90.8	60.5
08:00 PM - 09:00 PM	67.7	93.2	61.1
09:00 PM - 10:00 PM	65.9	83.6	60.7
10:00 PM - 11:00 PM	63.4	82.5	58.6
11:00 PM - 12:00 AM	62.2	82.8	57.2
12:00 AM - 01:00 AM	63.1	87.8	56.5
01:00 AM - 02:00 AM	62.4	86.4	55.7
02:00 AM - 03:00 AM	59.0	75.4	55.8
03:00 AM - 04:00 AM	60.0	82.3	55.9
04:00 AM - 05:00 AM	64.2	89.3	57.5
05:00 AM - 06:00 AM	69.4	93.0	60.2
06:00 AM - 07:00 AM	66.7	85.4	62.2
07:00 AM - 08:00 AM	69.2	92.0	63.8
08:00 AM - 09:00 AM	68.2	90.9	63.2
09:00 AM - 10:00 AM	66.0	90.7	61.0

Leq Average 24 hrs. (dB(A))

66.1

Lmax (dB(A))

102.8

L90 (dB(A))

60.2

Ldn (dB(A))

71.3

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Life Sciences

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S:\Reports_Air Noise.rpt (1:35PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 24776-0M

Page 1 of 1

Sample Number 2212112-7
Parameter Noise (Leq 24 hrs.)
Location สถานีที่ 3 บริเวณวัดเสมียนนารี (GPS 47P 066(217, 15- 05(28
Measurement Date Oct 07 NOct 0(, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 572564

Time	Le (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM N11:00 AM	65.1	(1.7	60.1
11:00 AM N12:00 PM	65.0	(.1	59.6
12:00 PM N01:00 PM	6-.2	(2.5	5(.6
01:00 PM N02:00 PM	64.4	(6.4	5(.(.1
02:00 PM N0-.00 PM	64.4	91.9	59.2
0-.00 PM N04:00 PM	64.9	(0.5	60.-
04:00 PM N05:00 PM	65.7	(-.2	62.-
05:00 PM N06:00 PM	6(.1	(9(.1	6-.4
06:00 PM N07:00 PM	67.9	91.2	64.-
07:00 PM N0(.00 PM	67.1	(-.7	62.2
0(.00 PM N09:00 PM	6(.1	91.6	61.7
09:00 PM N10:00 PM	66.5	(9.4	61.1
10:00 PM N11:00 PM	66(.1	(9.6	60.2
11:00 PM N12:00 AM	65.7	(5.-	59.1
12:00 AM N01:00 AM	61.4	75.0	5(.0
01:00 AM N02:00 AM	62.-	(9.4	56(.1
02:00 AM N0-.00 AM	60.4	76.7	56.6
0-.00 AM N04:00 AM	61.5	(6.0	57.0
04:00 AM N05:00 AM	64.-	(7.0	5(.0
05:00 AM N06:00 AM	66.7	(6.1	59.7
06:00 AM N07:00 AM	6(.2	92.1	61.7
07:00 AM N0(.00 AM	69.1	9-.5	62.2
0(.00 AM N09:00 AM	66.0	(-.9	62.4
09:00 AM N10:00 AM	66.6	92.0	61.7

Le) Average 24 hrs. dB(A)

65.9

Lmax dB(A)

9-.5

L90 dB(A)

60.1

Ldn dB(A)

71.6

Standard dB(A)

70

115

Reference Method : ISO1996N and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 พ.ศ. 2540 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 254(

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q8

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:35PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bum3er: 24776-1N

Page 1 of 1

Sample Number	2212112-N0
Parameter	boise (Leq 24 hrs.)
Location	สถานีที่ 4 บริเวณวัดเสมียนนารี (GPS 47P 0668217, 15- 0582)
Measurement Date	Oct 08 NOct 09, 2022
Measurement by	Teeravut Sukdee
Sound Level meter	Serial bo. 572564

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM N11:00 AM	64.1	8-.-	59.7
11:00 AM N12:00 PM	62.6	79.-	58.2
12:00 PM N01:00 PM	6- .4	85.7	58.1
01:00 PM N02:00 PM	64.0	89.6	57.5
02:00 PM N0- :00 PM	61.5	76.9	57.9
0- :00 PM N04:00 PM	67.1	101.4	58.8
04:00 PM N05:00 PM	65.4	85.-	59.9
05:00 PM N06:00 PM	6- .6	86.-	58.5
06:00 PM N07:00 PM	66.9	91.2	61.2
07:00 PM N08:00 PM	66.7	91.2	59.2
08:00 PM N09:00 PM	64.6	8- .7	59.0
09:00 PM N10:00 PM	6- .0	79.-	58.6
10:00 PM N11:00 PM	6- .4	81.-	58.9
11:00 PM N12:00 AM	60.8	8- .2	56.6
12:00 AM N01:00 AM	59.6	77.0	55.5
01:00 AM N02:00 AM	64.0	88.9	55.0
02:00 AM N0- :00 AM	60.-	82.1	55.5
0- :00 AM N04:00 AM	64.2	89.-	57.1
04:00 AM N05:00 AM	70.1	96.9	58.4
05:00 AM N06:00 AM	67.8	89.0	59.7
06:00 AM N07:00 AM	68.4	95.5	61.4
07:00 AM N08:00 AM	68.2	94.7	62.6
08:00 AM N09:00 AM	67.1	94.9	61.8
09:00 AM N10:00 AM	68.4	92.5	61.9

Leq Average 24 hrs. (dB(A))

65.7

Lmax (dB(A))

101.4

L90 (dB(A))

58.6

Ldn (dB(A))

72.1

Standard (dB(A))

70

115

Reference Method : ISO1996N and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:35PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bum3er: 24776-2N

Page 1 of 1

Sample Number	2212112-N0
Parameter	boise (Leq 24 hrs.)
Location	สถานีที่ 4 บริเวณโรงเรียนอนุบาลจตุจักร (GPS 47P 0668981, 15- 2142)
Measurement Date	Oct 06 NOct 07, 2022
Measurement by	Teeravut Sukdee
Sound Level meter	Serial bo. 672789

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM N12:00 PM	62.6	80.-	60.0
12:00 PM N01:00 PM	62.5	78.1	60.2
01:00 PM N02:00 PM	62.9	76.0	60.-
02:00 PM N0- :00 PM	62.0	79.8	59.5
0- :00 PM N04:00 PM	61.-	74.9	58.9
04:00 PM N05:00 PM	60.7	77.9	58.2
05:00 PM N06:00 PM	62.-	80.4	59.4
06:00 PM N07:00 PM	62.-	80.9	58.8
07:00 PM N08:00 PM	6- .1	8- .1	59.9
08:00 PM N09:00 PM	6- .7	79.8	60.6
09:00 PM N10:00 PM	64.9	8- .1	61.0
10:00 PM N11:00 PM	62.2	74.7	60.2
11:00 PM N12:00 AM	61.1	74.1	58.4
12:00 AM N01:00 AM	59.-	7- .9	56.1
01:00 AM N02:00 AM	58.5	72.8	54.4
02:00 AM N0- :00 AM	59.1	78.0	54.5
0- :00 AM N04:00 AM	58.9	71.7	55.8
04:00 AM N05:00 AM	61.6	79.-	58.4
05:00 AM N06:00 AM	6- .2	82.-	60.8
06:00 AM N07:00 AM	64.8	80.7	61.7
07:00 AM N08:00 AM	65.4	80.2	62.1
08:00 AM N09:00 AM	64.7	8- .5	61.6
09:00 AM N10:00 AM	6-.-	78.6	60.9
10:00 AM N11:00 AM	62.8	76.0	60.2

Leq Average 24 hrs. (dB(A))

62.6

Lmax (dB(A))

8- .5

L90 (dB(A))

59.9

Ldn (dB(A))

68.2

Standard (dB(A))

70

115

Reference Method : ISO1996N and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:36PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bum3er: 24776--N

Page 1 of 1

Sample Number 2212112-N1
Parameter boise (Leq 24 hrs.)
Location สถานีที่ 4 บริเวณโรงเรียนอนุบาลวัดเสนา (GPS 47P 0668981, 15- 2142)
Measurement Date Oct 07 NOct 08, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial bo. 672789

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM N12:00 PM	62.9	84.1	59.8
12:00 PM N01:00 PM	62.0	78.0	59.5
01:00 PM N02:00 PM	62.0	7-.-	59.5
02:00 PM N0-:00 PM	61.-	77.2	57.9
0-:00 PM N04:00 PM	6-.-5	80.-	59.9
04:00 PM N05:00 PM	62.4	74.6	60.0
05:00 PM N06:00 PM	64.9	79.4	61.9
06:00 PM N07:00 PM	65.7	82.1	6-.-0
07:00 PM N08:00 PM	64.2	8-.-5	61.8
08:00 PM N09:00 PM	64.7	84.2	61.2
09:00 PM N10:00 PM	64.1	88.1	61.4
10:00 PM N11:00 PM	6-.-6	81.6	61.1
11:00 PM N12:00 AM	6-.-8	81.9	60.1
12:00 AM N01:00 AM	61.9	79.-	58.4
01:00 AM N02:00 AM	60.0	7-.-5	57.0
02:00 AM N0-:00 AM	59.6	75.0	56.5
0-:00 AM N04:00 AM	59.7	75.-	57.0
04:00 AM N05:00 AM	61.1	80.8	58.7
05:00 AM N06:00 AM	6-.-6	81.1	60.1
06:00 AM N07:00 AM	64.6	80.6	61.6
07:00 AM N08:00 AM	64.8	84.-	62.1
08:00 AM N09:00 AM	64.7	88.4	61.0
09:00 AM N10:00 AM	6-.-4	78.0	61.4
10:00 AM N11:00 AM	6-.-2	82.0	60.4

Leq Average 24 hrs. (dB(A))

6-.-

Lmax (dB(A))

88.4

L90 (dB(A))

60.1

Ldn (dB(A))

69.0

Standard (dB(A))

70

115

Reference Method : ISO1996N and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supt S

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:36PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bum3er: 24776-4N

Page 1 of 1

Sample Number 2212112-N2
Parameter boise (Leq 24 hrs.)
Location สถานีที่ 4 บริเวณโรงเรียนอนุบาลวัดเสนา (GPS 47P 0668981, 15- 2142)
Measurement Date Oct 08 NOct 09, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial bo. 672789

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM N12:00 PM	6-.-	79.-	60.1
12:00 PM N01:00 PM	61.7	77.9	58.8
01:00 PM N02:00 PM	62.7	78.1	60.-
02:00 PM N0-:00 PM	6-.-	80.7	60.2
0-:00 PM N04:00 PM	62.1	75.8	59.9
04:00 PM N05:00 PM	6-.-2	79.8	60.4
05:00 PM N06:00 PM	64.0	86.2	60.8
06:00 PM N07:00 PM	6-.-	8-.-2	60.1
07:00 PM N08:00 PM	6-.-7	81.-	60.1
08:00 PM N09:00 PM	6-.-7	82.1	60.0
09:00 PM N10:00 PM	6-.-0	78.6	61.0
10:00 PM N11:00 PM	6-.-0	78.5	60.8
11:00 PM N12:00 AM	6-.-7	80.1	60.6
12:00 AM N01:00 AM	61.5	76.7	58.2
01:00 AM N02:00 AM	60.2	7-.-7	56.9
02:00 AM N0-:00 AM	61.8	81.4	57.1
0-:00 AM N04:00 AM	60.8	71.8	58.-
04:00 AM N05:00 AM	6-.-4	82.8	59.8
05:00 AM N06:00 AM	64.-	8-.-9	60.4
06:00 AM N07:00 AM	65.5	81.2	61.9
07:00 AM N08:00 AM	65.0	79.0	62.6
08:00 AM N09:00 AM	64.0	75.1	62.1
09:00 AM N10:00 AM	6-.-4	78.6	61.1
10:00 AM N11:00 AM	62.4	70.6	60.8

Leq Average 24 hrs. (dB(A))

6-.-2

Lmax (dB(A))

86.2

L90 (dB(A))

60.2

Ldn (dB(A))

69.5

Standard (dB(A))

70

115

Reference Method : ISO1996N and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supt S

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:43PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report 3 um(er: 24776-Nkl

Page 1 of 1

Sample Number 2212112-b1-
Parameter 3oise d.e) 24 hrs.8
Location สถานีที่ N บริเวณโรงเรียนบางเขน GPS 47P 0669409, 1N-29N58
Measurement Date Oct 06 b Oct 07, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial 3o. 102226-

Time	Le) qdBqA88	Lmax qdBqA88	L90 qdBqA88
12:00 PM b 01:00 PM	66.1	54.7	60.6
01:00 PM b 02:00 PM	67.0	79.-	62.0
02:00 PM b 0- :00 PM	67.7	52.9	6-.N
0- :00 PM b 04:00 PM	67.4	5N.-	62.N
04:00 PM b 0N:00 PM	64.6	5N.1	60.0
0N:00 PM b 06:00 PM	64.9	51.0	60.6
06:00 PM b 07:00 PM	66.2	91.1	60.5
07:00 PM b 05:00 PM	64.5	52.N	60.2
05:00 PM b 09:00 PM	6N.-	5- .9	N9.N
09:00 PM b 10:00 PM	6N.1	56.6	61.N
10:00 PM b 11:00 PM	64.4	56.2	60.N
11:00 PM b 12:00 AM	62.5	52.9	N9.2
12:00 AM b 01:00 AM	60.9	79.6	N6.N
01:00 AM b 02:00 AM	N9.0	7- .1	NN.1
02:00 AM b 0- :00 AM	N5.4	72.5	N4.N
0- :00 AM b 04:00 AM	N5.2	72.6	N4.6
04:00 AM b 0N:00 AM	60.0	50.7	NN.7
0N:00 AM b 06:00 AM	64.-	51.N	N5.4
06:00 AM b 07:00 AM	66.9	59.0	60.N
07:00 AM b 05:00 AM	65.2	54.2	61.5
05:00 AM b 09:00 AM	69.2	57.7	6-.1
09:00 AM b 10:00 AM	67.7	91.9	60.6
10:00 AM b 11:00 AM	67.9	5N.2	61.6
11:00 AM b 12:00 PM	65.N	55.1	62.6

Le) Average 24 hrs. qdBqA88

6N.5

Lmax qdBqA88

91.9

L90 qdBqA88

60.N

Ldn qdBqA88

70.0

Standard qdBqA88

70

11N

Reference Method : ISO1996b1 and 1996b2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 1N พ.ศ. 2N408 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2N45

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q48

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:43PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bum3er: 24776-6Nl

Page 1 of 1

Sample Number 2212112-N4
Parameter boise (Leq 24 hrs.)
Location สถานีที่ 8 บริเวณโรงเรียนบางเขน (GPS 47P 0669409, 18-2985)
Measurement Date Oct 07 NOct 05, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial bo. 102226-

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM N01:00 PM	6-.8	58.0	86.7
01:00 PM N02:00 PM	62.-	77.7	86.2
02:00 PM N0- :00 PM	62.7	75.-	86.0
0- :00 PM N04:00 PM	62.7	75.4	86.6
04:00 PM N08:00 PM	62.4	51.2	87.9
08:00 PM N06:00 PM	6-.2	75.1	85.2
06:00 PM N07:00 PM	64.6	75.-	61.-
07:00 PM N05:00 PM	6-.7	75.9	89.7
05:00 PM N09:00 PM	68.8	50.1	87.7
09:00 PM N10:00 PM	70.4	75.9	66.2
10:00 PM N11:00 PM	69.-	79.1	68.2
11:00 PM N12:00 AM	67.1	79.6	62.0
12:00 AM N01:00 AM	64.4	79.7	62.0
01:00 AM N02:00 AM	64.7	75.6	62.1
02:00 AM N0- :00 AM	64.9	74.-	61.6
0- :00 AM N04:00 AM	64.4	72.8	87.7
04:00 AM N08:00 AM	60.1	75.9	88.8
08:00 AM N06:00 AM	89.1	79.4	84.5
06:00 AM N07:00 AM	68.6	90.7	86.0
07:00 AM N05:00 AM	6-.9	55.1	86.9
05:00 AM N09:00 AM	62.7	58.6	86.5
09:00 AM N10:00 AM	61.6	50.9	86.5
10:00 AM N11:00 AM	61.-	50.0	88.5
11:00 AM N12:00 PM	60.8	75.4	88.0

Leq Average 24 hrs. (dB(A))

64.7

Lmax (dB(A))

90.7

L90 (dB(A))

86.9

Ldn (dB(A))

71.6

Standard (dB(A))

70

118

Reference Method : ISO1996N1 and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 18 (พ.ศ. 2840) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2845

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:43PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bum3er: 24776-7N

Page 1 of 1

Sample Number	2212112-N(
Parameter	boise d.e) 24 hrs.8
Location	สถานีที่ 6 บริเวณโรงเรียนนางเขน GPS 47P 0669409, 1(-29(58
Measurement Date	Oct 05 NOct 09, 2022
Measurement by	Teeravut Sukdee
Sound Level meter	Serial bo. 102226-

Time	Le) qdBqA88	Lmax qdBqA88	L90 qdBqA88
12:00 PM N01:00 PM	62.0	56.2	(6.1
01:00 PM N02:00 PM	60.7	50.2	((.-
02:00 PM N0-:00 PM	60.9	79.6	((.(
0-:00 PM N04:00 PM	60.-	77.6	((.2
04:00 PM N0(:00 PM	60.7	75.7	((.6
0(:00 PM N06:00 PM	61.4	76.-	(6.5
06:00 PM N07:00 PM	61.0	50.2	(6.6
07:00 PM N05:00 PM	6.-0	50.7	(6.5
05:00 PM N09:00 PM	6.-4	52.(	(5.-
09:00 PM N10:00 PM	61.(	51.6	(7.1
10:00 PM N11:00 PM	(5.4	75.4	((.2
11:00 PM N12:00 AM	(5.4	70.9	(6.1
12:00 AM N01:00 AM	(5.2	75.7	(.-5
01:00 AM N02:00 AM	(5.(	70.5	(7.2
02:00 AM N0-:00 AM	(7.6	7.-6	((.6
0-:00 AM N04:00 AM	(5.4	75.2	(6.6
04:00 AM N0(:00 AM	(5.5	52.2	((.1
0(:00 AM N06:00 AM	(5.1	72.7	((.6
06:00 AM N07:00 AM	6.-2	51.7	(4.6
07:00 AM N05:00 AM	64.2	54.5	((.7
05:00 AM N09:00 AM	6.-2	54.6	(6.2
09:00 AM N10:00 AM	(9.9	51.5	((.(
10:00 AM N11:00 AM	60.-	76.6	((.4
11:00 AM N12:00 PM	60.6	51.(	((.0

Le) Average 24 hrs. qdBqA88	61.0		
Lmax qdBqA88		56.2	
L90 qdBqA88			((.6
Ldn qdBqA88	66.1		
Standard qdBqA88	70	11(

Reference Method : ISO1996N and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 1(พ.ศ. 2(408 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ
โรงงาน พ.ศ. 2(45

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q48

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:43PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report 3um(er: 24776-Nbl

Page 1 of 1

Sample Number	2212112-bl6
Parameter	3oise d.e) 24 hrs.8
Location	สถานีที่ 6 บริเวณ คานมยดปสี่ GPS 47P 0670741, 15-54178
Measurement Date	Oct 14 b Oct 15, 2022
Measurement by	Teeravut Sukdee
Sound Level meter	Serial 3o. 102226-

Time	Le) qdBqA88	Lmax qdBqA88	L90 qdBqA88
09:00 AM b 10:00 AM	6N.9	10N.2	61.1
10:00 AM b 11:00 AM	65.2	N2.4	61.N
11:00 AM b 12:00 PM	67.2	97.5	62.-
12:00 PM b 01:00 PM	66.-	N7.-	62.7
01:00 PM b 02:00 PM	65.0	91.0	61.4
02:00 PM b 0-:00 PM	67.-	99.7	62.7
0-:00 PM b 04:00 PM	66.2	N6.N	62.0
04:00 PM b 05:00 PM	65.0	N4.5	61.1
05:00 PM b 06:00 PM	67.5	100.9	60.N
06:00 PM b 07:00 PM	64.0	N9.1	60.1
07:00 PM b 0N:00 PM	62.-	N1.N	59.6
0N:00 PM b 09:00 PM	64.1	N4.1	60.2
09:00 PM b 10:00 PM	61.5	79.5	5N.N
10:00 PM b 11:00 PM	60.7	74.9	5N.N
11:00 PM b 12:00 AM	61.N	75.N	59.6
12:00 AM b 01:00 AM	64.4	7N.5	61.0
01:00 AM b 02:00 AM	67.0	96.5	61.N
02:00 AM b 0-:00 AM	66.9	N4.N	62.9
0-:00 AM b 04:00 AM	67.1	N9.2	62.7
04:00 AM b 05:00 AM	66.N	N9.4	62.-
05:00 AM b 06:00 AM	65.9	N4.4	62.7
06:00 AM b 07:00 AM	66.7	N6.2	62.4
07:00 AM b 0N:00 AM	65.N	97.0	62.0
0N:00 AM b 09:00 AM	66.1	N6.9	62.7

Le) Average 24 hrs. qdBqA88	65.N		
Lmax qdBqA88		10N.2	
L90 qdBqA88			61.N
Ldn qdBqA88	72.2		
Standard qdBqA88	70	115	

Reference Method : ISO1996bl and 1996b2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 ต.ค. 25408 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ
โรงงาน จ.ศ. 254N

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q48

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:43PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 24776-9N

Page 1 of 1

Sample Number	2212112-N7
Parameter	boise (Leq 24 hrs.)
Location	สถานีที่ 6 บริเวณ คานยดง (GPS 47P 0670741, 18-8417)
Measurement Date	Oct 18 NOct 16, 2022
Measurement by	Teeravut Sukdee
Sound Level meter	Serial no. 102226-

Time	Leq (dB(A))	Lma5 (dB(A))	L90 (dB(A))
09:00 AM N10:00 AM	66.0	x6.9	62.6
10:00 AM N11:00 AM	66.x	92.2	62.8
11:00 AM N12:00 PM	67.1	97.8	62.x
12:00 PM N01:00 PM	66.x	x8.1	6-.4
01:00 PM N02:00 PM	67.0	90.2	6-.0
02:00 PM N0-:00 PM	67.0	x1.6	64.8
0-:00 PM N04:00 PM	68.4	x7.0	61.4
04:00 PM N08:00 PM	67.9	101.4	61.2
08:00 PM N06:00 PM	64.x	xx.7	61.2
06:00 PM N07:00 PM	64.1	7x.9	61.9
07:00 PM N0x:00 PM	6-.6	79.x	61.6
0x:00 PM N09:00 PM	61.2	79.1	8x.2
09:00 PM N10:00 PM	61.0	76.4	8x.6
10:00 PM N11:00 PM	61.7	x1.2	89.2
11:00 PM N12:00 AM	6-.9	x-.8	60.8
12:00 AM N01:00 AM	66.4	x7.7	61.4
01:00 AM N02:00 AM	66.7	96.-	62.1
02:00 AM N0-:00 AM	66.9	x9.8	62.-
0-:00 AM N04:00 AM	66.0	xx.4	62.7
04:00 AM N08:00 AM	67.9	x9.2	6-.6
08:00 AM N06:00 AM	66.-	x7.-	6-.2
06:00 AM N07:00 AM	66.7	x0.-	6-.4
07:00 AM N0x:00 AM	66.1	x-.7	6-.4
0x:00 AM N09:00 AM	68.8	x-.2	62.6

Leq Average 24 hrs. (dB(A))

68.9

Lma5 (dB(A))

101.4

L90 (dB(A))

62.-

Ldn (dB(A))

72.8

Standard (dB(A))

70

118

Reference Method : ISO1996N and 1996N2

Standard : 1. การควบคุมเสียงรบกวนในอาคาร ตามฉบับ มาตรฐาน ฉบับที่ 18 (จ.ค. 2840) เพื่อควบคุมเสียงรบกวนในอาคาร

2. การควบคุมเสียงรบกวนในอาคาร เพื่อควบคุมเสียงรบกวนในอาคาร ตามฉบับ มาตรฐาน ฉบับที่ 18 (จ.ค. 2840) เพื่อควบคุมเสียงรบกวนในอาคาร

โรตารัน จ.ค. 284x

Technical Management

Saranya C.

Saranya Chalerthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Life Sciences

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19476N1/ EMAIL

S:\Reports_Air Noise.rpt (1:44PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477640-1

Page 1 of 1

Sample Number	22121123-1(
Parameter	Noise (Le) 24 hrs.8
Location	สถานีที่ 6 บริเวณ คานยดง (GPS 47P 0670741, 15354178)
Measurement Date	Oct 16 - Oct 17, 2022
Measurement by	Teeravut Sukdee
Sound Level meter	Serial No. 1022263

Time	Le) dBqA88	Lmax dBqA88	L90 dBqA88
09:00 AM - 10:00 AM	66.7	(9.7	62.5
10:00 AM - 11:00 AM	65.9	(7.6	62.0
11:00 AM - 12:00 PM	65.5	(4.4	61.7
12:00 PM - 01:00 PM	66.3	94.(	62.1
01:00 PM - 02:00 PM	65.5	92.4	61.(
02:00 PM - 03:00 PM	65.5	(7.0	61.(
03:00 PM - 04:00 PM	64.7	(3.5	61.3
04:00 PM - 05:00 PM	63.2	(1.(	59.5
05:00 PM - 06:00 PM	60.9	75.5	5(. (
06:00 PM - 07:00 PM	62.2	(1.(	5(.1
07:00 PM - 0(:00 PM	60.6	76.(	5(.4
0(:00 PM - 09:00 PM	62.2	77.7	59.6
09:00 PM - 10:00 PM	65.3	(3.7	61.4
10:00 PM - 11:00 PM	6(.3	(3.1	61.9
11:00 PM - 12:00 AM	69.2	(.5	63.0
12:00 AM - 01:00 AM	67.4	94.0	62.5
01:00 AM - 02:00 AM	69.6	96.(	62.5
02:00 AM - 03:00 AM	66.4	94.4	61.4
03:00 AM - 04:00 AM	66.4	(7.6	63.9
04:00 AM - 05:00 AM	65.1	(9.2	63.7
05:00 AM - 06:00 AM	66.2	(6.5	64.0
06:00 AM - 07:00 AM	65.(	76.2	65.0
07:00 AM - 0(:00 AM	66.5	69.0	65.3
0(:00 AM - 09:00 AM	67.1	70.(	66.(

Le) Average 24 hrs. dBqA88

66.1

Lmax dBqA88

96.(

L90 dBqA88

61.9

Ldn dBqA88

73.5

Standard dBqA88

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. การควบคุมเสียงรบกวนในอาคาร ตามฉบับ มาตรฐาน ฉบับที่ 15 (จ.ค. 25408) เพื่อควบคุมเสียงรบกวนในอาคาร

2. การควบคุมเสียงรบกวนในอาคาร เพื่อควบคุมเสียงรบกวนในอาคาร ตามฉบับ มาตรฐาน ฉบับที่ 15 (จ.ค. 25408) เพื่อควบคุมเสียงรบกวนในอาคาร

โรตารัน จ.ค. 254(

Technical Management

Saranya C.

Saranya Chalerthamrong
Scientist q8

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:44PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477641-1

Page 1 of 1

Sample Number 22121123-19
Parameter Noise (Leq 24 hrs.)
Location สถานีรถไฟกรุงเทพ (GPS 47P 0671684, 1537181)
Measurement Date Oct 20 - Oct 21, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 858521

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	65.1	87.3	58.6
02:00 PM - 03:00 PM	62.1	83.3	58.9
03:00 PM - 04:00 PM	62.4	80.3	58.8
04:00 PM - 05:00 PM	62.0	87.2	58.6
05:00 PM - 06:00 PM	63.1	85.3	57.8
06:00 PM - 07:00 PM	61.4	87.1	57.9
07:00 PM - 08:00 PM	61.4	80.2	58.6
08:00 PM - 09:00 PM	61.4	78.8	58.1
09:00 PM - 10:00 PM	62.0	84.0	57.1
10:00 PM - 11:00 PM	59.4	75.3	56.0
11:00 PM - 12:00 AM	57.8	75.6	54.7
12:00 AM - 01:00 AM	57.8	71.0	55.4
01:00 AM - 02:00 AM	58.9	82.7	55.5
02:00 AM - 03:00 AM	58.6	72.5	56.4
03:00 AM - 04:00 AM	61.2	85.5	57.9
04:00 AM - 05:00 AM	62.0	79.7	59.2
05:00 AM - 06:00 AM	62.7	84.2	59.8
06:00 AM - 07:00 AM	62.7	82.8	60.0
07:00 AM - 08:00 AM	63.3	82.7	59.4
08:00 AM - 09:00 AM	64.3	85.9	58.7
09:00 AM - 10:00 AM	61.9	79.5	58.6
10:00 AM - 11:00 AM	61.6	76.4	58.7
11:00 AM - 12:00 PM	62.5	84.6	58.7
12:00 PM - 01:00 PM	61.8	81.1	58.6

Leq Average 24 hrs. (dB(A))

61.9

Lmax (dB(A))

87.3

L90 (dB(A))

58.6

Ldn (dB(A))

67.3

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. มาตรฐานการวัดเสียงและสั่นสะเทือน (พ.ศ. 2540) หรือมาตรฐานของกรมสิ่งแวดล้อม ส.ค.อ.อ.อ.อ.

2. มาตรฐานการวัดเสียงและสั่นสะเทือน (พ.ศ. 2548) หรือมาตรฐานของกรมสิ่งแวดล้อม ส.ค.อ.อ.อ.อ.

วัดตาม พ.ศ. 2548

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:44PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477642-1

Page 1 of 1

Sample Number 22121123-20
Parameter Noise (Leq 24 hrs.)
Location สถานีรถไฟกรุงเทพ (GPS 47P 0671684, 1537181)
Measurement Date Oct 21 - Oct 22, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 858521

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	62.6	82.1	59.0
02:00 PM - 03:00 PM	61.8	87.1	58.6
03:00 PM - 04:00 PM	63.4	91.0	59.1
04:00 PM - 05:00 PM	64.1	89.9	58.5
05:00 PM - 06:00 PM	62.9	89.6	58.5
06:00 PM - 07:00 PM	61.6	82.1	57.9
07:00 PM - 08:00 PM	61.7	83.1	57.7
08:00 PM - 09:00 PM	61.2	82.5	57.5
09:00 PM - 10:00 PM	60.6	77.1	57.5
10:00 PM - 11:00 PM	61.2	82.5	56.6
11:00 PM - 12:00 AM	58.6	79.0	55.7
12:00 AM - 01:00 AM	58.0	75.8	55.1
01:00 AM - 02:00 AM	59.4	80.6	56.0
02:00 AM - 03:00 AM	59.7	85.4	56.3
03:00 AM - 04:00 AM	60.8	79.8	57.7
04:00 AM - 05:00 AM	62.1	82.7	58.8
05:00 AM - 06:00 AM	62.4	82.1	59.6
06:00 AM - 07:00 AM	62.8	78.1	59.7
07:00 AM - 08:00 AM	62.5	81.2	58.9
08:00 AM - 09:00 AM	61.7	77.2	58.1
09:00 AM - 10:00 AM	62.0	84.4	57.9
10:00 AM - 11:00 AM	61.1	80.1	57.5
11:00 AM - 12:00 PM	61.1	82.0	57.7
12:00 PM - 01:00 PM	61.2	79.2	57.8

Leq Average 24 hrs. (dB(A))

61.7

Lmax (dB(A))

91.0

L90 (dB(A))

57.8

Ldn (dB(A))

67.5

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. มาตรฐานการวัดเสียงและสั่นสะเทือน (พ.ศ. 2540) หรือมาตรฐานของกรมสิ่งแวดล้อม ส.ค.อ.อ.อ.

2. มาตรฐานการวัดเสียงและสั่นสะเทือน (พ.ศ. 2548) หรือมาตรฐานของกรมสิ่งแวดล้อม ส.ค.อ.อ.อ.

วัดตาม พ.ศ. 2548

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:44PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 247764-N

Page 1 of 1

Sample Number 2212112-N1
Parameter boise (Leq 24 hrs.)
Location สถานีรถไฟกรุงเทพ (GPS 47P 0671684, 15-7181)
Measurement Date Oct 22 NOct 2-, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial no. 858521

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM N02:00 PM	62.0	87.8	58.4
02:00 PM N04:00 PM	62.0	80.1	59.2
03:00 PM N06:00 PM	62.7	78.4	59.4
04:00 PM N08:00 PM	62.7	82.5	59.2
05:00 PM N10:00 PM	62.7	82.5	59.2
06:00 PM N12:00 PM	62.7	82.5	59.2
07:00 PM N02:00 PM	62.7	82.5	59.2
08:00 PM N04:00 PM	62.7	82.5	59.2
09:00 PM N06:00 PM	62.7	82.5	59.2
10:00 PM N08:00 PM	62.7	82.5	59.2
11:00 PM N10:00 PM	62.7	82.5	59.2
12:00 PM N12:00 AM	62.7	82.5	59.2
01:00 AM N02:00 AM	62.7	82.5	59.2
02:00 AM N04:00 AM	62.7	82.5	59.2
03:00 AM N06:00 AM	62.7	82.5	59.2
04:00 AM N08:00 AM	62.7	82.5	59.2
05:00 AM N10:00 AM	62.7	82.5	59.2
06:00 AM N12:00 AM	62.7	82.5	59.2
07:00 AM N02:00 AM	62.7	82.5	59.2
08:00 AM N04:00 AM	62.7	82.5	59.2
09:00 AM N06:00 AM	62.7	82.5	59.2
10:00 AM N08:00 AM	62.7	82.5	59.2
11:00 AM N10:00 AM	62.7	82.5	59.2
12:00 PM N12:00 PM	62.7	82.5	59.2

Leq Average 24 hrs. (dB(A))

62.2

Lmax (dB(A))

87.8

L90 (dB(A))

58.9

Ldn (dB(A))

68.1

Standard (dB(A))

70

115

Reference Method : ISO1996N and 1996N

Standard : 1. กรอบการประเมินผลกระทบสิ่งแวดล้อม (พ.ร.บ. 2540) หรือตามมาตรฐานของ ส.ค.บ.อ.อ.อ.อ.

2. กรอบการประเมินผลกระทบสิ่งแวดล้อม (พ.ร.บ. 2540) หรือตามมาตรฐานของ ส.ค.บ.อ.อ.อ.อ.

โรตตาม พ. 2548

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:49PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477644-1

Page 1 of 1

Sample Number 22121123-22
Parameter Noise (Leq 24 hrs.)
Location สถานีรถไฟกรุงเทพ (GPS 47P 0672958, 1539708)
Measurement Date Oct 14 - Oct 15, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 1022262

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	57.9	84.1	53.1
11:00 AM - 12:00 PM	59.5	84.3	53.1
12:00 PM - 01:00 PM	58.3	79.2	52.6
01:00 PM - 02:00 PM	60.7	87.0	50.2
02:00 PM - 03:00 PM	56.8	75.6	49.3
03:00 PM - 04:00 PM	58.1	83.1	48.9
04:00 PM - 05:00 PM	55.9	84.3	48.1
05:00 PM - 06:00 PM	56.9	76.8	54.6
06:00 PM - 07:00 PM	55.4	83.1	46.5
07:00 PM - 08:00 PM	48.5	65.1	46.1
08:00 PM - 09:00 PM	48.6	69.7	45.3
09:00 PM - 10:00 PM	47.4	65.5	44.4
10:00 PM - 11:00 PM	47.6	68.8	44.1
11:00 PM - 12:00 AM	46.7	65.0	44.2
12:00 AM - 01:00 AM	51.0	85.5	44.8
01:00 AM - 02:00 AM	56.5	77.6	46.1
02:00 AM - 03:00 AM	56.5	86.4	46.9
03:00 AM - 04:00 AM	61.3	78.4	60.0
04:00 AM - 05:00 AM	61.5	76.7	60.3
05:00 AM - 06:00 AM	63.4	84.4	60.4
06:00 AM - 07:00 AM	63.3	80.2	60.5
07:00 AM - 08:00 AM	62.2	82.0	60.4
08:00 AM - 09:00 AM	61.9	76.7	60.2
09:00 AM - 10:00 AM	64.1	92.6	59.9

Leq Average 24 hrs. (dB(A))

59.2

Lmax (dB(A))

92.6

L90 (dB(A))

49.3

Ldn (dB(A))

65.9

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. กรอบการประเมินผลกระทบสิ่งแวดล้อม (พ.ร.บ. 2540) หรือตามมาตรฐานของ ส.ค.บ.อ.อ.อ.อ.

2. กรอบการประเมินผลกระทบสิ่งแวดล้อม (พ.ร.บ. 2540) หรือตามมาตรฐานของ ส.ค.บ.อ.อ.อ.อ.

โรตตาม พ. 2548

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:49PM)



Lot ID: 22121123

Date Received : Oct 24, 2022
Date Reported : Oct 29, 2022
Report Number: 247764-N

Project Name :
Project Location :

Sample Number	2212112(N(
Parameter	boise (L.e) 24 hrs.8
Location	สถานีที่ 5 บริเวณวัดมอญเมรุบ ทุ่งPS 47P 06729-5, 1-(97058
Measurement Date	Oct 1- NOct 16, 2022
Measurement by	Teeravut Sukdee
Sound Level meter	Serial no. 1022262

Le) Average 24 hrs. qdBqA88

Lmax qdBqA88

L90 and BqA88

Ldn qdBqA88

Standard αBoA88

Reference Method : ISO1996N and 1996N2

Standard : 1. กรดจากแบคทีเรียกรดสีน้ำตาล ผลห่าขาคี ฉบับที่ 1- พ.พ. 2-408ระเบียบกำหนดมาตรฐาน การผลิตและใช้โดรนทั่วไป
2. กรดจากแบคทีเรียกรดสีน้ำตาล ระเบียบกำหนดมาตรฐานการผลิตและใช้โดรนฉบับที่ 1- พ.พ. 2-408

Technical Management

Saranya Chalermthamrong
Scientist 48

Approved by

Supot Salamteh
Section Head

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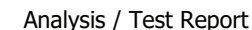
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S:\Reports\ Air Noise.rpt (1:50PM)



Lot ID: 22121123

Date Received : Oct 24, 2022
Date Reported : Oct 29, 2022
Report Number: 2477646-1

Project Name :

Project Location :

Sample Number	22121123-24
Parameter	Noise (Leq 24 hrs.)
Location	สถานี 8 บริเวณวัดถนนแยบ (GPS 47P 0672958, 1539708)
Measurement Date	Oct 16 - Oct 17, 2022
Measurement by	Teeravut Sukdee
Sound Level meter	Serial No. 1022262

Leq Average 24 hrs. (dB(A))

Lmax (dB(A))

L90 (dB(A))

Ldn (dB(A))

Standard (dB(A))

Reference Method : ISO1996-1 and 1996-2

[illegible]

Technical Management

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot Salamteh
Section Head

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19476-21/ FMATI

S:\Reports\ Air Noise.rpt (1:50PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477647-1

Page 1 of 1

Sample Number 22121123-2(
Parameter Noise d.e) 24 hrs.8
Location สถานีที่ 9 บริเวณหมู่บ้านปรีชา GPS 47P 067342(, 1(447248
Measurement Date Oct 14 - Oct 1(, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 1122(04

Time	Le) dBqA88	Lma5 dBqA88	L90 dBqA88
11:00 AM - 12:00 PM	(9.2	x2.6	(4.6
12:00 PM - 01:00 PM	(7.6	x2.2	(4.x
01:00 PM - 02:00 PM	(x.6	7x.7	(4.4
02:00 PM - 03:00 PM	(7.0	74.(	(4.4
03:00 PM - 04:00 PM	(7.7	76.4	(4.7
04:00 PM - 0(:00 PM	(x.(	74.9	((.3
0(:00 PM - 06:00 PM	(x.x	79.(	((.4
06:00 PM - 07:00 PM	(x.6	x0.(	((.0
07:00 PM - 0x:00 PM	(7.7	73.0	(4.7
0x:00 PM - 09:00 PM	(x.6	x1.0	((.0
09:00 PM - 10:00 PM	(x.1	7x.4	(4.2
10:00 PM - 11:00 PM	(6.3	76.0	(4.0
11:00 PM - 12:00 AM	(6.(	69.x	(4.2
12:00 AM - 01:00 AM	((.x	73.x	(3.3
01:00 AM - 02:00 AM	(6.0	71.2	(3.x
02:00 AM - 03:00 AM	((.9	71.0	(3.x
03:00 AM - 04:00 AM	(6.4	x3.6	(3.(
04:00 AM - 0(:00 AM	(x.7	x1.1	(3.2
0(:00 AM - 06:00 AM	(x.2	x1.1	(3.7
06:00 AM - 07:00 AM	(x.6	7(.7	(4.x
07:00 AM - 0x:00 AM	(9.(	x0.(	((.3
0x:00 AM - 09:00 AM	(x.3	7x.4	((.2
09:00 AM - 10:00 AM	(x.4	77.0	(4.9
10:00 AM - 11:00 AM	(7.9	7(.7	((.1

Le) Average 24 hrs. dBqA88

(7.9

Lma5 dBqA88

x3.6

L90 dBqA88

(4.6

Ldn dBqA88

63.7

Standard dBqA88

70

11(

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 1(พ.ศ. 2(408 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2(4x

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q88

Approved by

Supot S.

Supot Salamteh
Section Head

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19476-21/ EMAIL

S:\Reports_Air Noise.rpt (1:50PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bum3er: 247764- N1

Page 1 of 1

Sample Number 2212112(N6
Parameter boise d.e) 24 hrs.8
Location สถานีที่ 9 บริเวณหมู่บ้านปรีชา GPS 47P 067(425, 15447248
Measurement Date Oct 15 NOct 16, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial bo. 1122504

Time	Le) dBqA88	Lmax dBqA88	L90 dBqA88
11:00 AM N12:00 PM	60.7	75.-	5(.6
12:00 PM N01:00 PM	56.6	77.2	51.9
01:00 PM N02:00 PM	57.9	77.6	52.9
02:00 PM N0(:00 PM	5- .0	7(.5	55.1
0(:00 PM N04:00 PM	5- .2	72.7	55.6
04:00 PM N05:00 PM	5- .-	7(.7	56.0
05:00 PM N06:00 PM	59.7	- 0.9	55.-
06:00 PM N07:00 PM	57.9	70.(	55.7
07:00 PM N0- :00 PM	57.6	70.(	55.(
0- :00 PM N09:00 PM	5- .(	76.6	55.7
09:00 PM N10:00 PM	57.9	79.0	54.6
10:00 PM N11:00 PM	57.6	76.9	54.4
11:00 PM N12:00 AM	5- .2	77.9	54.9
12:00 AM N01:00 AM	56.5	75.1	54.7
01:00 AM N02:00 AM	57.0	7- .7	54.7
02:00 AM N0(:00 AM	5- .4	- (.(	54.1
0(:00 AM N04:00 AM	54.-	71.(	5(.2
04:00 AM N05:00 AM	57.(	7- .(	52.-
05:00 AM N06:00 AM	59.6	- (.(2	5(.4
06:00 AM N07:00 AM	5- .9	79.7	54.6
07:00 AM N0- :00 AM	5- .-	- 1.7	55.1
0- :00 AM N09:00 AM	5- .9	- 0.0	55.9
09:00 AM N10:00 AM	59.9	- 1.7	55.6
10:00 AM N11:00 AM	59.5	- 1.2	55.7

Le) Average 24 hrs. dBqA88

5- .4

Lmax dBqA88

- (.(

L90 dBqA88

54.7

Ldn dBqA88

64.(

Standard dBqA88

70

115

Reference Method : ISO1996N1 and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 พ.ศ. 25408 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 254-

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q88

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:50PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477649-1

Page 1 of 1

Sample Number 22121123-27
Parameter Noise (Leq 24 hrs.)
Location สถานีที่ 9 บริเวณหมู่บ้านปรีชา (GPS 47P 0673428, 1844724)
Measurement Date Oct 16 - Oct 17, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 1122804

Time	Leq (dB(A))	Lma5 (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	89.0	79.x	88.7
12:00 PM - 01:00 PM	8x.4	78.x	86.3
01:00 PM - 02:00 PM	89.7	x1.4	86.2
02:00 PM - 03:00 PM	89.3	78.7	86.4
03:00 PM - 04:00 PM	89.7	x2.4	86.8
04:00 PM - 08:00 PM	89.9	77.8	86.9
08:00 PM - 06:00 PM	60.1	76.0	86.6
06:00 PM - 07:00 PM	89.1	x0.2	86.4
07:00 PM - 0x:00 PM	8x.9	74.9	86.2
0x:00 PM - 09:00 PM	89.3	79.3	88.9
09:00 PM - 10:00 PM	8x.1	78.8	88.7
10:00 PM - 11:00 PM	8x.4	76.6	88.3
11:00 PM - 12:00 AM	87.4	x1.x	88.1
12:00 AM - 01:00 AM	87.3	76.x	84.4
01:00 AM - 02:00 AM	87.3	71.6	84.8
02:00 AM - 03:00 AM	86.6	74.7	84.3
03:00 AM - 04:00 AM	86.2	73.3	84.8
04:00 AM - 08:00 AM	87.0	77.4	84.3
08:00 AM - 06:00 AM	89.1	x1.3	88.0
06:00 AM - 07:00 AM	89.2	7x.1	86.4
07:00 AM - 0x:00 AM	60.3	x2.4	87.2
0x:00 AM - 09:00 AM	60.0	77.4	87.0
09:00 AM - 10:00 AM	89.2	77.7	86.8
10:00 AM - 11:00 AM	8x.6	77.2	86.2

Leq Average 24 hrs. (dB(A))

8x.x

Lma5 (dB(A))

x2.4

L90 (dB(A))

86.2

Ldn (dB(A))

64.4

Standard (dB(A))

70

118

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 18 (พ.ศ. 2840) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 284x

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:50PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 24776-0M

Page 1 of 1

Sample Number 2212112(Nq
Parameter boise)Le8 24 hrs.5
Location สถานีที่ 10 บริเวณโรงเรียนรัตนโกสินทร์ รังสิต)GPS 47P 067((06, 1-472915
Measurement Date Oct 14 NOct 1-, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial no. 71064-

Time	Le8 (dB)A55	Lmax (dB)A55	L90 (dB)A55
12:00 PM N01:00 PM	- - .7	q7.0	4- .6
01:00 PM N02:00 PM	-0.2	74.6	46.7
02:00 PM N0(:00 PM	-0-	69.4	47.1
0(:00 PM N04:00 PM	-0.q	67.q	46.q
04:00 PM N0- :00 PM	-2.2	7- -	47.0
0- :00 PM N06:00 PM	-2-	69.0	46.9
06:00 PM N07:00 PM	-1.2	76.1	47.2
07:00 PM N0q:00 PM	-2-	7q-	47.6
0q:00 PM N09:00 PM	-0.9	71.1	47.0
09:00 PM N10:00 PM	-0.9	6q.9	47.9
10:00 PM N11:00 PM	-1.7	70.2	-0.0
11:00 PM N12:00 AM	-1.7	7(.4	49.(
12:00 AM N01:00 AM	-0-	71.0	4q.0
01:00 AM N02:00 AM	-0.0	74.2	47.q
02:00 AM N0(:00 AM	4q.4	6- .2	47.0
0(:00 AM N04:00 AM	47.9	67.4	46.9
04:00 AM N0- :00 AM	4q-	70.4	47.1
0- :00 AM N06:00 AM	4q.7	72.7	47.-
06:00 AM N07:00 AM	4q.0	62-	46.9
07:00 AM N0q:00 AM	4q.(	64.1	46.9
0q:00 AM N09:00 AM	-1.1	7- .6	47.-
09:00 AM N10:00 AM	-0.7	70.(	47.-
10:00 AM N11:00 AM	-1-	71.(	46.9
11:00 AM N12:00 PM	-1-	71.4	47.4

Le8 Average 24 hrs. (dB)A55

-1.0

Lmax (dB)A55

q7.0

L90 (dB)A55

47.1

Ldn (dB)A55

-6.-

Standard (dB)A55

70

11-

Reference Method : ISO1996N and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 1-)พ.ศ. 2-405เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2-4q

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist)45

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:50PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bum3er: 24776-1N

Page 1 of 1

Sample Number 2212112(N9
Parameter boise d.e) 24 hrs.8
Location สถานีที่ 10 บริเวณโรงเรียนรัตนโกสินทร์ รังสิต GPS 47P 067((06, 1-472918
Measurement Date Oct 1- NOct 16, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial bo. 71064-

Time	Le) qdBqA88	Lma5 qdBqA88	L90 qdBqA88
12:00 PM N01:00 PM	-1.0	77.6	44.x
01:00 PM N02:00 PM	-1.4	7(.(	44.2
02:00 PM N0(:00 PM	0.0	71.2	46.-
0(:00 PM N04:00 PM	-1.2	71.2	46.2
04:00 PM N0- :00 PM	-1.7	71.-	46.9
0- :00 PM N06:00 PM	-(.(	76.9	4x.1
06:00 PM N07:00 PM	-(.9	71.1	47.-
07:00 PM N0x:00 PM	-4.7	76.2	4x.(
0x:00 PM N09:00 PM	-2.-	74.1	47.9
09:00 PM N10:00 PM	-4.-	71.6	49.1
10:00 PM N11:00 PM	-(.2	71.(	49.6
11:00 PM N12:00 AM	-4.1	79.7	49.7
12:00 AM N01:00 AM	-0.7	6- .x	49.1
01:00 AM N02:00 AM	49.x	6(.x	4x.2
02:00 AM N0(:00 AM	-0.0	69.6	4x.0
0(:00 AM N04:00 AM	4x.7	-9.2	47.x
04:00 AM N0- :00 AM	49.2	6(.9	4x.2
0- :00 AM N06:00 AM	49.-	61.-	4x.-
06:00 AM N07:00 AM	49.(	62.x	4x.2
07:00 AM N0x:00 AM	-0.4	7x.1	4x.-
0x:00 AM N09:00 AM	-1.7	69.-	49.0
09:00 AM N10:00 AM	-4.7	74.4	4x.6
10:00 AM N11:00 AM	-(.x	7(.6	4x.2
11:00 AM N12:00 PM	--.0	7-.9	4x.2

Le) Average 24 hrs. qdBqA88

-2.(

Lma5 qdBqA88

79.7

L90 qdBqA88

4x.2

Ldn qdBqA88

-7.7

Standard qdBqA88

70

11-

Reference Method : ISO1996N and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 1- พ.ศ. 2-408 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2-4x

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q48

Approved by

Supt S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:51PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bum3er: 24776-2N

Page 1 of 1

Sample Number 2212112(N0
Parameter boise d.e) 24 hrs.8
Location สถานีที่ 10 บริเวณโรงเรียนรัตนโกสินทร์ รังสิต GPS 47P 067((06, 1-472918
Measurement Date Oct 16 NOct 17, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial bo. 71064-

Time	Le) qdBqA88	Lma5 qdBqA88	L90 qdBqA88
12:00 PM N01:00 PM	--.0	7x.x	47.9
01:00 PM N02:00 PM	-4.(	7(.x	47.x
02:00 PM N0(:00 PM	--.0	7-.0	4x.9
0(:00 PM N04:00 PM	-2.9	76.4	4x.0
04:00 PM N0- :00 PM	-(.4	7(.0	47.9
0- :00 PM N06:00 PM	-4.9	76.2	4x.1
06:00 PM N07:00 PM	-9.7	x4.-	49.0
07:00 PM N0x:00 PM	-4.4	7x.4	47.6
0x:00 PM N09:00 PM	-1.4	70.(	47.2
09:00 PM N10:00 PM	-4.4	71.9	47.7
10:00 PM N11:00 PM	-(.1	70.2	4x.1
11:00 PM N12:00 AM	-(.1	70.1	-0.2
12:00 AM N01:00 AM	-2.1	74.1	-0.0
01:00 AM N02:00 AM	-1.4	6x.0	-0.0
02:00 AM N0(:00 AM	-1.(	6(.9	-0.6
0(:00 AM N04:00 AM	-0.1	74.0	4x.(
04:00 AM N0- :00 AM	49.4	61.4	4x.-
0- :00 AM N06:00 AM	4x.6	-9.x	47.-
06:00 AM N07:00 AM	-0.1	76.0	4x.x
07:00 AM N0x:00 AM	-0.-	76.7	4x.0
0x:00 AM N09:00 AM	-1.(	7(.1	4x.(
09:00 AM N10:00 AM	-1.1	69.4	4x.(
10:00 AM N11:00 AM	-1.9	74.0	47.-
11:00 AM N12:00 PM	-1.4	72.2	46.6

Le) Average 24 hrs. qdBqA88

-(.(

Lma5 qdBqA88

x4.-

L90 qdBqA88

4x.1

Ldn qdBqA88

-x.(

Standard qdBqA88

70

11-

Reference Method : ISO1996N and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 1- พ.ศ. 2-408 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2-4x

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q48

Approved by

Supt S.

Supot Salamteh
Section Head

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Life Sciences

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19476N21/ EMAIL

S:\Reports_Air Noise.rpt (1:51PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O : สัญญาเลขที่รฟท.จ.020049

Project Name :

Project Location :

Lot ID: 22133466

6 gate Received : Dov 1Q, 7077

6 gate Reported : Dov 71, 7077

Report Dum3er: 7-9NN11bl

Page 1 of 1

Sample Number	771((-00b
Parameter	Doise d.e) 7- hrs.8
Location	สถานีที่ 11 บริเวณหมู่บ้านโสมเพลส GPS - NP 00N790N, 12- N- 778
Measurement Date	Dov 10 bDov 11, 7077
Measurement by	Teeravut Sukdee
Sound Level meter	Serial Do. N10Q 4

Time	Le) qdBqA88	Lma5 qdBqA88	L90 qdBqA88
10:00 Ax b11:00 Ax	2Q.9	4(.	27.N
11:00 Ax b17:00 Px	2-.2	NQ.9	27.0
17:00 Px b01:00 Px	2Q.2	41.4	27.-
01:00 Px b07:00 Px	22.(	NN.O	27.2
07:00 Px b0(:00 Px	2N.2	N4.O	27.4
0(:00 Px b0- :00 Px	2-.9	N1.1	2(.7
0- :00 Px b02:00 Px	2Q.7	N2.-	2(-.
02:00 Px b0Q:00 Px	2N.2	47.7	2(.2
0Q:00 Px b0N:00 Px	24.7	49.0	2(.9
0N:00 Px b04:00 Px	2Q.O	N9.N	2(.4
04:00 Px b09:00 Px	24.7	4-.2	2(.4
09:00 Px b10:00 Px	2Q.1	N9.-	2(.9
10:00 Px b11:00 Px	2Q.N	N4.7	2-.1
11:00 Px b17:00 Ax	22.0	NN.2	2-.0
17:00 Ax b01:00 Ax	22.0	N-.1	2-.0
01:00 Ax b07:00 Ax	2-.9	O4.9	2-.0
07:00 Ax b0(:00 Ax	2N.1	4(.7	2(.4
0(:00 Ax b0- :00 Ax	2Q.-	N2.O	2-.0
0- :00 Ax b02:00 Ax	22.2	N1.4	2-.0
02:00 Ax b0Q:00 Ax	2N.-	N-.2	2-.2
0Q:00 Ax b0N:00 Ax	2Q.(	N-.N	2(-.
0N:00 Ax b04:00 Ax	24.O	NN.9	2-.-
04:00 Ax b09:00 Ax	22.9	N(.2	2(.9
09:00 Ax b10:00 Ax	QN.O	109.7	2(-.

Le) Average 7- hrs. qdBqA88	24.1		
Lma5 qdBqA88		109.7	
L90 qdBqA88			2(.4
Ldn qdBqA88	Q(.1		
Standard qdBqA88	N0	112	

Reference x ethod : MS1 199Qbl and 199Qb7

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 12 พ.ศ. 72-08 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
7. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 72-4

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q-8

Approved by

Supt S.

Supot Salamteh
Section Head

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19-ND71/ Ex AM

S:\Reports_Air Noise.rpt (1:44PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O : สัญญาเลขที่รฟท.จ.020049

Project Name :

Project Location :

Lot ID: 22133466

6 gate Received : Dov 1Q, 7077

6 gate Reported : Dov 71, 7077

Report Dum3er: 7-9NN17bl

Page 1 of 1

Sample Number	771((-00b
Parameter	Doise d.e) 7- hrs.8
Location	สถานีที่ 11 บริเวณหมู่บ้านโสมเพลส GPS - NP 00N790N, 12- N- 778
Measurement Date	Dov 11 bDov 17, 7077
Measurement by	Teeravut Sukdee
Sound Level meter	Serial Do. N10Q 4

Time	Le) qdBqA88	Lma5 qdBqA88	L90 qdBqA88
10:00 Ax b11:00 Ax	2N.9	NN.O	2(-.
11:00 Ax b17:00 Px	2N.1	N4.-	2(-.1
17:00 Px b01:00 Px	2Q.7	N2.-	2(.1
01:00 Px b07:00 Px	29.7	NN.4	2(-.1
07:00 Px b0(:00 Px	Q(.-	41.O	27.9
0(:00 Px b0- :00 Px	2-.N	N-.-	27.9
0- :00 Px b02:00 Px	2N.-	4(.9	2(-.
02:00 Px b0Q:00 Px	24.1	40.7	2(-.N
0Q:00 Px b0N:00 Px	29.O	4N.7	2-.(
0N:00 Px b04:00 Px	2N.O	41.9	2-.0
04:00 Px b09:00 Px	24.4	90.N	2(.4
09:00 Px b10:00 Px	2N.O	40.4	2(-.9
10:00 Px b11:00 Px	2Q.2	NN.O	2(-.9
11:00 Px b17:00 Ax	2N.O	41.9	2-.(
17:00 Ax b01:00 Ax	2-.4	OQ.7	2-.7
01:00 Ax b07:00 Ax	22.-	N2.7	2-.0
07:00 Ax b0(:00 Ax	2-.N	41.(	2(.4
0(:00 Ax b0- :00 Ax	22.1	ON.O	2(-.9
0- :00 Ax b02:00 Ax	22.-	N9.1	2(.4
02:00 Ax b0Q:00 Ax	2Q.N	N(.7	2-.0
0Q:00 Ax b0N:00 Ax	2N.7	N4.4	2-.0
0N:00 Ax b04:00 Ax	24.2	40.O	2-.7
04:00 Ax b09:00 Ax	QO.O	90.N	2-.0
09:00 Ax b10:00 Ax	2N(	4(-.	2-..1

Le) Average 7- hrs. qdBqA88	2N.9		
Lma5 qdBqA88		90.N	
L90 qdBqA88			2(-.9
Ldn qdBqA88	Q7.9		
Standard qdBqA88	N0	112	

Reference x ethod : MS1 199Qbl and 199Qb7

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 12 พ.ศ. 72-08 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
7. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 72-4

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q-8

Approved by

Supt S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (1:45PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O : สัญญาเลขที่รฟท.จ.020049

Project Name :

Project Location :

Lot ID: 22133466

6 ate Received : Dov IQ, 7077

6 ate Reported : Dov 71, 7077

Report Dum(er: 7-9NN1b3l

Page 1 of 1

Sample Number	771bb-0030
Parameter	Doise (e) 7- hrs.8
Location	สถานีที่ 11 บริเวณหมู่บ้านโสมเพลส GPS - NP 00N790N, 12- N- 778
Measurement Date	Dov 17 3Dov 1b, 7077
Measurement by	Teeravut Sukdee
Sound Level meter	Serial Do. N10Cb4

Time	Le) qdBqA88	Lma5 qdBqA88	L90 qdBqA88
10:00 Ax 311:00 Ax	20.1	NQ.1	2b.4
11:00 Ax 317:00 Px	22.N	NN.b	2b.O
17:00 Px 301:00 Px	22.4	N2.2	2b.O
01:00 Px 307:00 Px	22.O	NQ.O	27.4
07:00 Px 30b:00 Px	2N.1	N9.2	27.4
0b:00 Px 30- :00 Px	2N.O	4b.1	2b.7
0- :00 Px 302:00 Px	2Q.N	NN.4	2b.2
02:00 Px 30Q:00 Px	2Q.O	N- .4	2b.N
0Q:00 Px 30N:00 Px	22.7	41.N	2b.-
0N:00 Px 304:00 Px	24.2	4Q.O	2- .0
04:00 Px 309:00 Px	29.N	4- .4	2b.4
09:00 Px 310:00 Px	2Q.O	NN.9	2b.4
10:00 Px 311:00 Px	22.N	N2.O	2b.9
11:00 Px 317:00 Ax	2- .9	NQ.O	2b.4
17:00 Ax 301:00 Ax	2Q.-	41.b	2b.4
01:00 Ax 307:00 Ax	22.-	NN.N	2b.O
07:00 Ax 30b:00 Ax	2- .7	Qb.O	2b.4
0b:00 Ax 30- :00 Ax	22.1	N1.N	2b.4
0- :00 Ax 302:00 Ax	22.1	N7.N	2b.2
02:00 Ax 30Q:00 Ax	22.O	N7.b	2b.O
0Q:00 Ax 30N:00 Ax	QO.2	4- .O	2b.O
0N:00 Ax 304:00 Ax	2N.9	N4.N	2b.4
04:00 Ax 309:00 Ax	22.O	NQ.O	2b.b
09:00 Ax 310:00 Ax	29.1	41.-	2b.7

Le) Average 7- hrs. qdBqA88

20.4

Lma5 qdBqA88

4Q.O

L90 qdBqA88

2b.O

Ldn qdBqA88

Q7.4

Standard qdBqA88

NQ

112

Reference x ethod : MS1 1990Q1 and 1990Q7

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 12 พ.ศ. 72- 08 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
7. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ
โรงงาน พ.ศ. 72- 4

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q- 8

Approved by

Supot S.

Supot Salamteh
Section Head

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19-NC371/ Ex AM

S:\Reports_Air Noise.rpt (1:45PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bum3er: 24776-6M

Page 1 of 1

Sample Number	2212112(N 4
Parameter	boise (e) 24 hrs.8
Location	สถานีที่ 12 บริเวณ าดารม ะ เขตพรสปาก กรุงลั่น GPS 47P 066- 929, 1- 256198
Measurement Date	Oct 20 NOct 21, 2022
Measurement by	Teeravut Sukdee
Sound Level meter	Serial bo. 5- 5- 17

Time	Le) qdBqA88	Lmax qdBqA88	L90 qdBqA88
01:00 PM N02:00 PM	-9.2	56.-	-2.2
02:00 PM N0(:00 PM	-5.-	76.6	-4.-
0(:00 PM N04:00 PM	60.4	57.9	-(. (
04:00 PM N0- :00 PM	-9.(	56.9	-4.6
0- :00 PM N06:00 PM	-7.6	76.7	-2.9
06:00 PM N07:00 PM	-7.7	76.2	-1.(
07:00 PM N05:00 PM	-7.4	76.(	-1.0
05:00 PM N09:00 PM	-7.(	76.-	-2.2
09:00 PM N10:00 PM	--.6	76.-	49.1
10:00 PM N11:00 PM	-4.(	76.1	49.7
11:00 PM N12:00 AM	-4.(	76.(	45.-
12:00 AM N01:00 AM	-4.0	51.5	4-.(
01:00 AM N02:00 AM	-0.0	67.6	4- .5
02:00 AM N0(:00 AM	-4.9	7- .1	-1.0
0(:00 AM N04:00 AM	-1.1	64.1	4- .5
04:00 AM N0- :00 AM	-1.1	71.4	46.-
0- :00 AM N06:00 AM	-6.9	76.1	49.9
06:00 AM N07:00 AM	-5.(	50.7	-(.7
07:00 AM N05:00 AM	-9.0	76.1	-4.6
05:00 AM N09:00 AM	-9.4	79.9	-6.0
09:00 AM N10:00 AM	-9.-	79.1	-4.2
10:00 AM N11:00 AM	-9.1	77.4	-4.6
11:00 AM N12:00 PM	-5.9	75.0	-4.1
12:00 PM N01:00 PM	-9.4	52.5	-(.4

Le) Average 24 hrs. qdBqA88

-7.6

Lmax qdBqA88

57.9

L90 qdBqA88

-2.2

Ldn qdBqA88

61.9

Standard qdBqA88

70

11-

Reference Method : ISO1996N1 and 1996N2

Standard : 1. กรมควบคุมมลพิษ พ.ศ. 2548 เรื่อง กำหนดค่าระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ
โรงงาน พ.ศ. 2- 45

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q8

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (2:17PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bum3er: 24776-7N

Page 1 of 1

Sample Number 2212112(N-
Parameter boise d.e) 24 hrs.8
Location สถานีที่ 12 บริเวณ อาคารม ิ ะเขตพระสปาก กรุงแลสัน GPS 47P 066-929, 1-256198
Measurement Date Oct 21 NOct 22, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial bo. 5-5-17

Time	Le) dBqA88	Lmax dBqA88	L90 dBqA88
01:00 PM N02:00 PM	-7.7	77.-	-(.2
02:00 PM N04:00 PM	-9.0	52.-	--.1
04:00 PM N04:00 PM	-9.4	77.1	-4.4
04:00 PM N0-:00 PM	-9.(	54.-	--.1
0-:00 PM N06:00 PM	-5.2	77.1	-4.1
06:00 PM N07:00 PM	-7.2	50.2	-2.(
07:00 PM N05:00 PM	-5.-	50.2	-1.6
05:00 PM N09:00 PM	-5.1	76.0	-4.1
09:00 PM N10:00 PM	--.9	76.1	-0.2
10:00 PM N11:00 PM	--.7	76.7	-1.6
11:00 PM N12:00 AM	-4.-	76.1	45.6
12:00 AM N01:00 AM	-4.-	52.0	46.4
01:00 AM N02:00 AM	-0.1	69.6	4.-9
02:00 AM N04:00 AM	-4.7	75.7	-1.5
04:00 AM N06:00 AM	-2.7	65.4	46.-
06:00 AM N07:00 AM	-2.-	71.9	46.-
0-:00 AM N06:00 AM	--.-	76.-	-0.7
06:00 AM N07:00 AM	-7.-	51.5	-1.4
07:00 AM N05:00 AM	-5.(	79.4	-2.0
05:00 AM N09:00 AM	-9.1	77.7	--.4
09:00 AM N10:00 AM	-5.6	77.0	-(.9
10:00 AM N11:00 AM	-9.6	52.(	-4.0
11:00 AM N12:00 PM	-7.9	77.0	-(.2
12:00 PM N01:00 PM	-5.1	75.6	-2.7

Le) Average 24 hrs. dBqA88

-7.(

Lmax dBqA88

54.-

L90 dBqA88

-2.0

Ldn dBqA88

61.5

Standard dBqA88

70

11-

Reference Method : ISO1996N and 1996N2

Standard : 1. จรณะดณปรศรปารสอพร ชัศตวงลลารั นบยที่ 1-)น.ร. 2-408เร ปรจูลน ศร รารานร นสออด ทอสงไ
2. จรณะดณปรศรปารสอพร ชัศตวงลลารั นบยที่ 1-)น.ร. 2-405เร ปรจูลน ศร รารานร นสออด ทอสงไ
ครอลน น.ร. 2-45

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q48

Approved by

Supt S

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (2:17PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report 3um(er: 24776-Nbl

Page 1 of 1

Sample Number 2212112qbt6
Parameter 3oise)Le8 24 hrs.5
Location สถานีที่ 12 บริเวณ อาคารม ิ ะเขตพระสปาก กรุงแลสัน GPS 47P 066-929, 1-2N6195
Measurement Date Oct 22 b Oct 2q, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial 3o. N-N-17

Time	Le8)dB)A55	Lmax)dB)A55	L90)dB)A55
01:00 PM b02:00 PM	-7.6	7.-9	-2.7
02:00 PM b0q:00 PM	-9.1	77.0	--.0
0q:00 PM b04:00 PM	-9.2	79.2	-q.6
04:00 PM b0-:00 PM	-N6	77.0	-4.6
0-:00 PM b06:00 PM	-7.7	76.6	-q.1
06:00 PM b07:00 PM	-7.-	N1.9	-2.7
07:00 PM b0N:00 PM	-N-	79.6	-2.6
0N:00 PM b09:00 PM	-7.-	N0.7	-q.4
09:00 PM b10:00 PM	6q.q	7N.9	-0.-
10:00 PM b11:00 PM	-6.4	NN.7	-1.2
11:00 PM b12:00 AM	--.-	7.-.q	-0.1
12:00 AM b01:00 AM	-q.9	N0.9	4N.7
01:00 AM b02:00 AM	-7.N	N6.-	47.9
02:00 AM b0q:00 AM	-4.9	6.-.-	-2.9
0q:00 AM b04:00 AM	-7.2	91.q	47.9
04:00 AM b0-:00 AM	-1.N	70.1	4N.0
0-:00 AM b06:00 AM	-6.1	76.6	-1.2
06:00 AM b07:00 AM	-7.2	76.6	-0.4
07:00 AM b0N:00 AM	-N-	N2.2	-0.7
0N:00 AM b09:00 AM	-9.2	N4.9	-4.2
09:00 AM b10:00 AM	-N0	77.4	-1.9
10:00 AM b11:00 AM	6q.0	N1.7	-q.2
11:00 AM b12:00 PM	-9.6	N2.q	-4.0
12:00 PM b01:00 PM	-Nq	N0.7	-q.7

Le8 Average 24 hrs.)dB)A55

-N-

Lmax)dB)A55

91.q

L90)dB)A55

-2.6

Ldn)dB)A55

6q.1

Standard)dB)A55

70

11-

Reference Method : ISO1996bl and 1996b2

Standard : 1. จรณะดณปรศรปารสอพร ชัศตวงลลารั นบยที่ 1-)น.ร. 2-405เร ปรจูลน ศร รารานร นสออด ทอสงไ
2. จรณะดณปรศรปารสอพร ชัศตวงลลารั นบยที่ 1-)น.ร. 2-405เร ปรจูลน ศร รารานร นสออด ทอสงไ
ครอลน น.ร. 2-4N

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist)45

Approved by

Supt S

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (2:18PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 24776-9N

Page 1 of 1

Sample Number 22121123(N7
Parameter boise d.e) 24 hrs.8
Location สถานีที่ 1(บริเวณซอยสีรินธร GPS 47P 06-972(, 1-5-0948
Measurement Date Oct 20 NOct 21, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial no. 1022226(

Time	Le) dB(A)	Lmax dB(A)	L90 dB(A)
11:00 AM N12:00 PM	61.5	92.5	-6.0
12:00 PM N01:00 PM	-5.7	75.9	-7.9
01:00 PM N02:00 PM	61.2	57.6	-6.0
02:00 PM N03:00 PM	-9.1	79.5	-6.4
03:00 PM N04:00 PM	-5.1	77.1	-6.2
04:00 PM N05:00 PM	-9.2	52.2	-6.6
05:00 PM N06:00 PM	-9.9	77.1	-7.2
06:00 PM N07:00 PM	-9.7	75.4	-6.5
07:00 PM N08:00 PM	60.5	92.1	-6.1
08:00 PM N09:00 PM	-9.5	75.0	-6.7
09:00 PM N10:00 PM	-9.2	51.5	-7.5
10:00 PM N11:00 PM	-5.1	71.2	-7.1
11:00 PM N12:00 AM	-7.7	71.1	-6.9
12:00 AM N01:00 AM	-7.0	75.5	-2.1
01:00 AM N02:00 AM	61.4	59.4	-1.1
02:00 AM N03:00 AM	-7.2	51.0	-2.1
03:00 AM N04:00 AM	-6.7	51.1	-2.1
04:00 AM N05:00 AM	-7.5	52.7	-2.5
05:00 AM N06:00 AM	-5.9	74.0	-6.6
06:00 AM N07:00 AM	60.1	74.1	-7.5
07:00 AM N08:00 AM	64.7	90.0	-9.1
08:00 AM N09:00 AM	61.1	51.1	-5.5
09:00 AM N10:00 AM	60.1	50.7	-7.4
10:00 AM N11:00 AM	-9.5	51.2	-7.1

Le) Average 24 hrs. dB(A)

60.1

Lmax dB(A)

92.5

L90 dB(A)

-6.0

Ldn dB(A)

61.5

Standard dB(A)

70

111

Reference Method : ISO1996N and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 1- พ.ศ. 2-408 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2-45

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q8

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (2:18PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477660-1

Page 1 of 1

Sample Number 22121123-3(
Parameter Noise d.e) 24 hrs.8
Location สถานีที่ 13 บริเวณซอยสีรินธร GPS 47P 0659723, 15(50948
Measurement Date Oct 21 - Oct 22, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 1022263

Time	Le) dB(A)	Lmax dB(A)	L90 dB(A)
11:00 AM - 12:00 PM	59.0	70.5	56.1
12:00 PM - 01:00 PM	59.0	71.4	56.1
01:00 PM - 02:00 PM	59.2	73.2	56.9
02:00 PM - 03:00 PM	59.2	71.1	57.2
03:00 PM - 04:00 PM	59.5	71.1	57.4
04:00 PM - 05:00 PM	59.3	73.6	57.3
05:00 PM - 06:00 PM	59.1	79.9	57.4
06:00 PM - 07:00 PM	59.2	72.7	55.6
07:00 PM - 08:00 PM	51.5	77.1	55.5
08:00 PM - 09:00 PM	60.1	71.5	57.4
09:00 PM - 10:00 PM	60.0	79.7	56.9
10:00 PM - 11:00 PM	51.7	77.2	56.1
11:00 PM - 12:00 AM	51.0	71.0	54.1
12:00 AM - 01:00 AM	59.3	70.9	53.9
01:00 AM - 02:00 AM	56.9	77.9	52.9
02:00 AM - 03:00 AM	57.3	71.6	51.1
03:00 AM - 04:00 AM	57.9	75.0	50.6
04:00 AM - 05:00 AM	57.5	71.1	53.4
05:00 AM - 06:00 AM	51.3	71.2	54.5
06:00 AM - 07:00 AM	60.1	75.4	56.7
07:00 AM - 08:00 AM	60.6	74.7	51.1
08:00 AM - 09:00 AM	60.9	76.4	51.1
09:00 AM - 10:00 AM	60.4	72.3	57.3
10:00 AM - 11:00 AM	59.2	72.1	56.9

Le) Average 24 hrs. dB(A)

59.2

Lmax dB(A)

75.4

L90 dB(A)

56.1

Ldn dB(A)

65.0

Standard dB(A)

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 พ.ศ. 25408 เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2541

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist q8

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (2:18PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477661-1

Page 1 of 1

Sample Number 22121123-39
Parameter Noise (Leq 24 hrs.)
Location สถานีที่ 13 บริเวณเขมยสินธร (GPS 47P 0689723, 1858094)
Measurement Date Oct 22 - Oct 23, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 1022263

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	89.6	54.3	86.2
12:00 PM - 01:00 PM	89.3	74.6	86.6
01:00 PM - 02:00 PM	61.2	55.3	88.7
02:00 PM - 03:00 PM	85.2	73.1	88.7
03:00 PM - 04:00 PM	85.4	73.2	86.0
04:00 PM - 08:00 PM	89.5	50.5	86.2
08:00 PM - 06:00 PM	89.5	79.4	86.5
06:00 PM - 07:00 PM	61.4	56.6	86.5
07:00 PM - 05:00 PM	89.5	50.5	87.0
05:00 PM - 09:00 PM	89.9	75.6	87.0
09:00 PM - 10:00 PM	62.1	77.9	86.2
10:00 PM - 11:00 PM	87.8	71.5	88.1
11:00 PM - 12:00 AM	87.9	79.1	84.1
12:00 AM - 01:00 AM	64.2	51.4	84.2
01:00 AM - 02:00 AM	87.9	72.1	84.7
02:00 AM - 03:00 AM	87.6	53.4	82.7
03:00 AM - 04:00 AM	86.6	53.1	81.3
04:00 AM - 08:00 AM	87.8	75.9	82.8
08:00 AM - 06:00 AM	87.6	76.3	84.4
06:00 AM - 07:00 AM	89.2	76.3	86.1
07:00 AM - 05:00 AM	89.9	75.9	87.2
05:00 AM - 09:00 AM	89.7	71.2	87.2
09:00 AM - 10:00 AM	60.3	52.0	86.6
10:00 AM - 11:00 AM	89.2	72.5	86.9

Leq Average 24 hrs. (dB(A))

89.7

Lmax (dB(A))

55.3

L90 (dB(A))

86.1

Ldn (dB(A))

68.7

Standard (dB(A))

70

118

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 18 (พ.ศ. 2840) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2845

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (2:18PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477662-1

Page 1 of 1

Sample Number 22121123-40
Parameter Noise (Leq 24 hrs.)
Location สถานีที่ 14 บริเวณถนนรัชดาภิเษก (GPS 47P 0688265, 1824394)
Measurement Date Oct 20 - Oct 21, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 1122804

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	86.2	53.5	46.5
11:00 AM - 12:00 PM	88.4	77.8	46.5
12:00 PM - 01:00 PM	84.3	71.2	47.0
01:00 PM - 02:00 PM	84.0	67.9	46.1
02:00 PM - 03:00 PM	86.2	50.3	46.9
03:00 PM - 04:00 PM	88.7	73.4	47.3
04:00 PM - 08:00 PM	88.6	50.3	46.8
08:00 PM - 06:00 PM	86.7	72.6	45.5
06:00 PM - 07:00 PM	86.1	77.8	46.5
07:00 PM - 05:00 PM	88.3	53.5	45.0
05:00 PM - 09:00 PM	83.3	74.9	46.7
09:00 PM - 10:00 PM	80.6	69.6	44.3
10:00 PM - 11:00 PM	84.8	58.5	43.4
11:00 PM - 12:00 AM	80.7	50.9	42.4
12:00 AM - 01:00 AM	49.8	78.7	42.3
01:00 AM - 02:00 AM	48.4	63.5	41.7
02:00 AM - 03:00 AM	48.4	65.6	41.2
03:00 AM - 04:00 AM	44.7	68.8	40.4
04:00 AM - 08:00 AM	48.5	70.1	40.8
08:00 AM - 06:00 AM	49.9	70.5	43.1
06:00 AM - 07:00 AM	84.8	75.9	44.4
07:00 AM - 05:00 AM	84.5	75.1	46.5
05:00 AM - 09:00 AM	84.7	78.8	46.0
09:00 AM - 10:00 AM	84.8	78.0	48.8

Leq Average 24 hrs. (dB(A))

83.9

Lmax (dB(A))

58.5

L90 (dB(A))

46.0

Ldn (dB(A))

87.9

Standard (dB(A))

70

118

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 18 (พ.ศ. 2840) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2845

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (2:18PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report bum3er: 247766-N

Page 1 of 1

Sample Number 2212112-N1
Parameter boise (Leq 24 hrs.)
Location สถานีที่ 14 บริเวณถนนวิเศษชัยชาญ (GPS 47P 0688265, 1824-94)
Measurement Date Oct 21 NOct 22, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial no. 1122804

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM N11:00 AM	60.4	90.-	46.0
11:00 AM N12:00 PM	88.9	78.8	47.6
12:00 PM N01:00 PM	88.-	78.2	48.9
01:00 PM N02:00 PM	88.4	7.-5	46.-
02:00 PM N0.-00 PM	84.8	69.6	48.-
0.-00 PM N04:00 PM	88.5	76.7	47.1
04:00 PM N08:00 PM	86.1	75.7	47.9
08:00 PM N06:00 PM	87.-	78.6	45.6
06:00 PM N07:00 PM	86.7	77.9	46.6
07:00 PM N05:00 PM	87.0	74.5	45.0
05:00 PM N09:00 PM	69.5	110.0	47.-
09:00 PM N10:00 PM	84.9	74.7	47.1
10:00 PM N11:00 PM	84.0	50.9	48.6
11:00 PM N12:00 AM	88.2	74.4	46.0
12:00 AM N01:00 AM	8.-8	74.7	4.-2
01:00 AM N02:00 AM	45.-	65.6	41.7
02:00 AM N0.-00 AM	48.6	66.8	41.0
0.-00 AM N04:00 AM	48.8	70.1	41.2
04:00 AM N08:00 AM	45.0	62.2	41.6
08:00 AM N06:00 AM	84.1	75.6	42.2
06:00 AM N07:00 AM	84.-	75.-	42.7
07:00 AM N05:00 AM	81.-	67.-	42.7
05:00 AM N09:00 AM	8.-5	7.-4	44.6
09:00 AM N10:00 AM	87.2	78.6	46.6

Leq Average 24 hrs. (dB(A))

85.8

Lmax (dB(A))

110.0

L90 (dB(A))

48.9

Ldn (dB(A))

61.1

Standard (dB(A))

70

118

Reference Method : ISO1996N and 1996N2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 18 (ม.ศ. 2840) เรื่องกำหนดค่ามาตรฐานการปล่อยเสียงจากโรงงาน
 2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าการปล่อยเสียงจากโรงงาน และระเบียบการประกอบกิจการโรงงาน ม.ศ. 2845

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (2:19PM)



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited

Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok Thailand 10900

P/O :

Project Name :

Project Location :

Lot ID: 22121123

Date Received : Oct 24, 2022

Date Reported : Oct 29, 2022

Report Number: 2477664-1

Page 1 of 1

Sample Number 22121123-42
Parameter Noise (Leq 24 hrs.)
Location สถานีที่ 14 บริเวณถนนวิเศษชัยชาญ (GPS 47P 0688265, 1824394)
Measurement Date Oct 22 - Oct 23, 2022
Measurement by Teeravut Sukdee
Sound Level meter Serial No. 1122804

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	87.9	75.0	47.0
11:00 AM - 12:00 PM	87.9	76.7	49.4
12:00 PM - 01:00 PM	85.6	75.3	47.7
01:00 PM - 02:00 PM	89.5	58.1	45.4
02:00 PM - 03:00 PM	87.9	51.1	47.5
03:00 PM - 04:00 PM	86.5	77.0	46.2
04:00 PM - 08:00 PM	85.7	54.7	47.7
08:00 PM - 06:00 PM	87.8	55.1	47.2
06:00 PM - 07:00 PM	82.2	73.6	48.3
07:00 PM - 05:00 PM	82.7	79.9	43.9
05:00 PM - 09:00 PM	82.5	74.2	44.4
09:00 PM - 10:00 PM	83.2	72.5	42.5
10:00 PM - 11:00 PM	83.5	70.3	41.6
11:00 PM - 12:00 AM	47.9	73.5	41.0
12:00 AM - 01:00 AM	68.1	73.0	44.7
01:00 AM - 02:00 AM	65.5	73.7	64.7
02:00 AM - 03:00 AM	65.4	74.2	68.3
03:00 AM - 04:00 AM	61.4	72.3	84.8
04:00 AM - 08:00 AM	60.8	72.9	84.9
08:00 AM - 06:00 AM	65.9	76.1	83.6
06:00 AM - 07:00 AM	84.9	50.6	42.0
07:00 AM - 05:00 AM	81.1	51.0	41.4
05:00 AM - 09:00 AM	88.0	52.4	42.0
09:00 AM - 10:00 AM	81.2	76.9	44.8

Leq Average 24 hrs. (dB(A))

61.7

Lmax (dB(A))

55.1

L90 (dB(A))

46.2

Ldn (dB(A))

70.9

Standard (dB(A))

70

118

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 18 (ม.ศ. 2840) เรื่องกำหนดค่ามาตรฐานการปล่อยเสียงจากโรงงาน
 2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าการปล่อยเสียงจากโรงงาน และระเบียบการประกอบกิจการโรงงาน ม.ศ. 2845

Technical Management

Saranya C.

Saranya Chalermthamrong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (2:19PM)

ภาคผนวก ค-3

ความสันสะท้อน



Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900
P/O : สัญญาเลขที่รฟท.จ.650089
Project Name :
Project Location :

Lot ID : 22141043
Date Received : Nov 28, 2022
Date Reported : Dec 22, 2022
Report Number : 2496979-1

Page 1 of 6

Sample Number : 22141043-1
Sample Description : Air Quality
Location : สถานีที่ 1 บริเวณ ถนนพหลโยธิน (GPS 47P 0666368, 1526538)
Sampled Date : Nov 24-25, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Nov 24, 2022	12:05 PM	0.450	7.81	0.014	0.575	6.25	0.03	0.125	1.35	0.001
	12:25 PM	0.400	2.69	0.026	0.475	3.85	0.031	0.175	7.80	0.002
	01:10 PM	0.900	6.50	0.019	0.425	21.30	0.015	0.350	6.10	0.011
	05:06 PM	0.400	4.10	0.02	0.425	5.81	0.018	0.125	-	0.001
	06:10 PM	0.275	6.41	0.013	0.575	25.00	0.023	0.300	4.39	0.01
	08:03 PM	0.400	10.90	0.033	0.900	15.60	0.019	0.300	3.90	0.01
	10:10 PM	0.625	3.62	0.042	0.300	8.33	0.019	0.300	6.10	0.01

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P/O : สัญญาเลขที่รฟท.จ.650089
Project Name :
Project Location :

Lot ID : 22141043
Date Received : Nov 28, 2022
Date Reported : Dec 22, 2022
Report Number : 2496979-1

Page 2 of 2

Sample Number : 22141043-1
Sample Description : Air Quality
Location : สถานีที่ 1 บริเวณ ถนนพหลโยธิน (GPS 47P 0666368, 1526538)
Sampled Date : Nov 24-25, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Nov 25, 2022	06:55 AM	0.300	8.33	0.019	0.400	2.69	0.026	0.150	-	0.002
	07:23 AM	0.575	3.01	0.035	0.550	1.90	0.021	0.200	7.90	0.005
	08:17 AM	0.300	9.20	0.011	0.275	6.41	0.013	0.300	6.58	0.011
	09:45 AM	0.425	4.10	0.03	0.575	3.47	0.031	0.250	12.50	0.005
Max		0.900	10.90	0.042	0.900	25.00	0.031	0.350	12.50	0.011
Standard		5.225	10.90	-	8.750	25.00	-	5.625	12.50	-
Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).										

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P/O : สัญญาเลขที่รฟท.จ.650089
Project Name :
Project Location :

Lot ID : 22141043
Date Received : Nov 28, 2022
Date Reported : Dec 22, 2022
Report Number : 2496979-1

Page 3 of 6

Sample Number : 22141043-2
Sample Description : Air Quality
Location : สถานีที่ 1 บริเวณ โรงงานเชื่อมสายไทย (GPS 47P 0666368, 1526538)
Sampled Date : Nov 25-26, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Nov 25, 2022	12:54 PM	0.150	20.80	0.004	0.525	2.87	0.034	0.350	2.35	0
	05:25 PM	0.225	3.25	0.005	0.575	6.94	0.023	0.175	5.32	0.001
	06:10 PM	0.325	19.20	0.01	0.475	2.54	0.016	0.500	6.76	0.017
	09:03 PM	0.125	-	0.002	0.600	4.24	0.038	0.375	3.73	0.017

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Bangkok Thailand 10900
P/O : สัญญาเลขที่รฟท.จ.650089
Project Name :
Project Location :

Lot ID : 22141043
Date Received : Nov 28, 2022
Date Reported : Dec 22, 2022
Report Number : 2496979-1

Page 4 of 6

Sample Number : 22141043-2
Sample Description : Air Quality
Location : สถานีที่ 1 บริเวณ โรงงานเชื่อมสายไทย (GPS 47P 0666368, 1526538)
Sampled Date : Nov 25-26, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Nov 26, 2022	05:55 AM	0.400	6.94	0.01	0.550	6.58	0.026	0.325	5.81	0.009
	06:54 AM	0.200	7.35	0.005	0.475	8.93	0.021	0.250	-	0.001
	08:03 AM	0.200	-	0.007	0.300	5.68	0.016	0.300	5.56	0.007
	08:10 AM	0.225	17.30	0.005	0.475	6.41	0.019	0.500	3.57	0.013
	09:07 AM	0.200	35.70	0.008	0.350	7.53	0.01	0.225	14.50	0.005
	09:45 AM	0.350	4.63	0.01	0.275	5.56	0.008	0.800	6.41	0.024
Max		0.400	35.70	0.01	0.600	8.93	0.038	0.800	14.50	0.024
Standard		11.425	35.70	-	4.733	8.93	-	6.125	14.50	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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P/O : สัญญาเลขที่รฟท.จ.650089
Project Name :
Project Location :

Lot ID : 22141043
Date Received : Nov 28, 2022
Date Reported : Dec 22, 2022
Report Number : 2496979-1

Page 5 of 6

Sample Number : 22141043-3
Sample Description : Air Quality
Location : สถานีที่ 1 บริเวณถนนจ.ปิ่นเกล้าไทย (GPS 47P 0666368, 1526538)
Sampled Date : Nov 26-27, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Nov 26, 2022	12:05 PM	0.300	11.90	0.012	0.225	1.70	0.006	0.700	3.79	0.027
	01:01 PM	0.550	7.90	0.023	0.250	4.46	0.01	0.750	5.10	0.05
	04:52 PM	0.475	7.35	0.019	0.275	7.81	0.011	0.125	7.50	0
	07:54 PM	0.425	4.63	0.019	0.400	5.32	0.017	0.750	6.25	0.031
	09:45 PM	0.500	5.00	0.026	0.350	6.58	0.019	0.350	32.10	0.01

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P/O : สัญญาเลขที่รฟท.จ.650089
Project Name :
Project Location :

Lot ID : 22141043
Date Received : Nov 28, 2022
Date Reported : Dec 22, 2022
Report Number : 2496979-1

Page 6 of 6

Sample Number : 22141043-3
Sample Description : Air Quality
Location : สถานีที่ 1 บริเวณถนนจ.ปิ่นเกล้าไทย (GPS 47P 0666368, 1526538)
Sampled Date : Nov 26-27, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Nov 27, 2022	06:05 AM	0.550	5.00	0.029	0.225	14.70	0.006	0.300	27.80	0.006
	07:54 AM	0.425	3.91	0.024	0.275	9.20	0.009	0.575	6.25	0.018
	08:05 AM	0.375	19.20	0.026	0.250	-	0.009	0.775	4.72	0.034
	08:10 AM	0.450	4.03	0.039	0.450	12.50	0.015	0.600	14.70	0.024
	08:47 AM	0.300	5.20	0.013	0.550	4.39	0.02	0.650	4.81	0.042
Max		0.550	19.20	0.039	0.550	14.70	0.02	0.775	32.10	0.05
Standard		7.300	19.20	-	6.175	14.70	-	10.525	32.10	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Client : S.R.T. Electrified Train Company Limited
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Bangkok Thailand 10900

Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 1 of 6

Sample Number : 22121126-4
Sample Description : Air Quality
Location : สถานี 2 บริเวณนิคมรถไฟ กม.11 (GPS 47P 0667288, 1528822)
Sampled Date : Oct 06-07, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 06, 2022	10:05 AM	0.300	5.68	0.012	0.600	11.30	0.023	0.250	8.06	0.011
	03:10 PM	0.325	8.33	0.014	0.550	7.80	0.015	0.200	-	0.003
	03:15 PM	0.225	2.75	0.009	0.500	3.21	0.028	0.300	17.30	0.015
	05:30 PM	0.250	10.90	0.012	0.700	3.79	0.027	0.425	7.58	0.015
	07:04 PM	0.400	7.58	0.015	0.750	5.10	0.05	0.450	7.35	0.017
	09:45 PM	0.325	-	0.002	0.125	3.57	0	0.250	-	0.001
	09:47 PM	0.275	7.58	0.011	0.750	6.25	0.031	0.400	7.35	0.018

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Bangkok Thailand 10900

Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 2 of 6

Sample Number : 22121126-4
Sample Description : Air Quality
Location : สถานี 2 บริเวณนิคมรถไฟ กม.11 (GPS 47P 0667288, 1528822)
Sampled Date : Oct 06-07, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 07, 2022	05:15 AM	0.200	12.30	0.008	0.350	20.30	0.01	0.225	3.25	0.005
	07:32 AM	0.250	-	0.002	0.300	12.80	0.006	0.400	-	0.003
	07:35 AM	0.225	5.10	0.007	0.575	6.25	0.018	0.375	5.56	0.016
	08:40 AM	0.300	5.00	0.011	0.775	4.72	0.034	0.400	7.14	0.012
Max		0.400	12.30	0.015	0.775	20.30	0.05	0.450	17.30	0.018
Standard		5.575	12.30	-	7.575	20.30	-	6.825	17.30	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 3 of 6

Sample Number : 22121126-5
Sample Description : Air Quality
Location : สถานีที่ 2 บริเวณถนนรถไฟ กม.11 (GPS 47P 0667288, 1528822)
Sampled Date : Oct 07-08, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 07, 2022	11:05 AM	0.250	-	0.001	0.200	-	0.002	0.225	-	0.001
	12:10 PM	0.300	5.56	0.007	0.550	6.76	0.022	0.325	5.81	0.011
	03:00 PM	0.500	3.57	0.013	0.775	5.68	0.052	0.350	4.31	0.016
	03:20 PM	0.225	8.32	0.005	0.450	7.65	0.023	0.350	7.35	0.012
	04:03 PM	0.800	6.41	0.024	1.350	3.05	0.072	0.375	7.14	0.016
	04:07 PM	0.225	5.34	0.005	0.425	5.21	0.021	0.300	4.61	0.013
	08:15 PM	0.200	7.14	0.003	0.275	4.46	0.014	0.175	-	0.004

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-5
Sample Description : Air Quality
Location : สถานีที่ 2 บริเวณถนนรถไฟ กม.11 (GPS 47P 0667288, 1528822)
Sampled Date : Oct 07-08, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 08, 2022	06:08 AM	0.300	6.94	0.009	0.450	4.72	0.027	0.325	7.14	0.011
	07:45 AM	0.225	6.76	0.003	0.300	9.64	0.012	0.225	1.80	0.006
	08:35 AM	0.225	9.23	0.004	0.500	4.17	0.022	0.325	9.10	0.012
Max		0.800	9.23	0.024	1.350	9.64	0.072	0.375	9.10	0.016
Standard		4.808	9.23	-	4.910	9.64	-	4.775	9.10	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number 22121126-6
Sample Description Air Quality
Location สถานีที่ 2 บริเวณถนนรถไฟ กม.11 (GPS 47P 0667288, 1528822)
Sampled Date Oct 08-09, 2022
Sampled by Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 08, 2022	10:03 AM	0.300	5.81	0.008	0.525	3.68	0.03	0.250	12.50	0.008
	11:10 AM	0.400	7.58	0.013	0.700	3.16	0.047	0.225	-	0.007
	11:55 AM	0.200	15.30	0.005	0.475	3.33	0.028	0.250	18.90	0.011
	02:32 PM	0.400	13.30	0.007	0.225	27.20	0.006	0.750	9.74	0.01
	03:05 PM	0.375	4.90	0.012	0.575	15.00	0.023	0.250	-	0.005
	05:00 PM	0.225	7.35	0.008	0.475	3.85	0.031	0.275	-	0.008
	09:05 PM	0.200	-	0.004	0.450	7.14	0.013	0.250	19.70	0.01

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number 22121126-6
Sample Description Air Quality
Location สถานีที่ 2 บริเวณถนนรถไฟ กม.11 (GPS 47P 0667288, 1528822)
Sampled Date Oct 08-09, 2022
Sampled by Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 09, 2022	05:35 AM	0.175	-	0.002	0.425	33.10	0.015	0.300	7.14	0.011
	06:10 AM	0.325	7.81	0.01	0.500	3.62	0.025	0.250	-	0.009
	08:11 AM	0.275	9.13	0.006	0.525	4.90	0.021	0.325	11.70	0.012
	Max	0.400	15.30	0.013	0.700	33.10	0.047	0.750	19.70	0.012
Standard		6.325	15.30	-	10.775	33.10	-	7.425	19.70	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-7
Sample Description : Air Quality
Location : สถานี 3 บริเวณวัดเสมียนนารี (GPS 47P 0668217, 1530582)
Sampled Date : Oct 06-07, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 06, 2022	11:05 AM	0.225	23.00	0.005	0.425	5.21	0.047	0.225	-	0.007
	01:10 PM	0.250	5.81	0.011	0.650	5.37	0.029	0.175	-	0.002
	04:25 PM	0.625	0.74	0.025	1.250	5.00	0.04	0.275	10.00	0.005
	07:20 PM	0.225	-	0.002	0.300	7.35	0.013	0.275	-	0.006
	07:25 PM	0.175	-	0.002	0.425	4.46	0.019	0.275	6.10	0.014

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-7
Sample Description : Air Quality
Location : สถานี 3 บริเวณวัดเสมียนนารี (GPS 47P 0668217, 1530582)
Sampled Date : Oct 06-07, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 07, 2022	06:37 AM	0.150	-	0.002	0.400	10.90	0.033	0.200	13.54	0.006
	07:40 AM	0.250	6.41	0.007	0.625	3.62	0.042	0.275	0.35	0.008
	08:05 AM	0.125	-	0	0.300	8.33	0.019	0.200	-	0.005
	08:52 AM	0.325	4.24	0.008	0.575	3.01	0.035	0.250	-	0.006
	09:05 AM	0.225	24.30	0.005	0.425	5.32	0.021	0.300	6.41	0.013
	09:47 AM	0.200	37.50	0.003	0.275	4.46	0.014	0.175	-	0.004
	09:55 AM	0.300	6.94	0.009	0.450	4.72	0.027	0.325	7.14	0.011
Max		0.625	37.50	0.025	1.250	10.90	0.047	0.325	13.54	0.014
Standard		11.875	37.50	-	5.225	10.90	-	5.885	13.54	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-8
Sample Description : Air Quality
Location : สถานี 3 บริเวณวัดเสมียนนารี (GPS 47P 0668217, 1530582)
Sampled Date : Oct 07-08, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 07, 2022	11:03 AM	0.250	11.90	0.012	0.125	30.50	0	0.250	-	0.001
	01:05 PM	0.400	7.58	0.015	0.750	6.25	0.031	0.400	7.35	0.018
	01:52 PM	0.325	-	0.002	0.350	27.00	0.01	0.225	8.70	0.005
	03:30 PM	0.275	7.58	0.011	0.300	27.80	0.006	0.400	-	0.003
	04:01 PM	0.200	15.20	0.008	0.575	6.25	0.018	0.375	5.56	0.016
	06:00 PM	0.250	-	0.002	0.775	4.72	0.034	0.400	7.14	0.012
	07:25 PM	0.225	5.10	0.007	0.600	14.70	0.024	0.300	3.79	0.011
	08:25 PM	0.300	5.00	0.011	0.650	4.81	0.042	0.250	4.72	0.01

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 4 of 6

Sample Number : 22121126-8
Sample Description : Air Quality
Location : สถานี 3 บริเวณวัดเสมียนนารี (GPS 47P 0668217, 1530582)
Sampled Date : Oct 07-08, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 08, 2022	05:45 AM	0.250	9.62	0.01	0.475	13.00	0.018	0.225	-	0.002
	06:10 AM	0.300	19.30	0.017	0.950	7.35	0.055	0.225	6.76	0.006
	08:00 AM	0.325	7.35	0.012	0.700	3.79	0.027	0.425	7.58	0.015
	09:40 AM	0.375	6.41	0.02	0.750	4.81	0.039	0.325	4.72	0.015
Max		0.400	19.30	0.02	0.950	30.50	0.055	0.425	8.70	0.018
Standard		7.325	19.30	-	10.125	30.50	-	4.675	8.70	-
Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).										

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-9
Sample Description : Air Quality
Location : สถานี 3 บริเวณวัดเสมียนนารี (GPS 47P 0668217, 1530582)
Sampled Date : Oct 08-09, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 08, 2022	12:05 PM	0.700	-	0.002	1.030	-	0.002	0.250	11.40	0.007
	02:20 PM	0.275	7.14	0.006	0.525	2.87	0.034	0.225	9.10	0.006
	03:03 PM	0.325	7.81	0.013	0.575	6.94	0.023	0.675	-	0.003
	03:10 PM	0.325	8.93	0.013	0.475	21.80	0.016	0.300	8.06	0.012
	05:35 PM	0.350	3.16	0.017	0.600	4.24	0.038	0.350	6.41	0.011
	05:55 PM	0.350	12.50	0.009	0.550	6.58	0.026	0.300	8.62	0.011
	07:23 PM	0.250	9.62	0.01	0.600	14.70	0.024	0.300	3.79	0.011
	08:02 PM	0.300	19.30	0.017	0.650	4.81	0.042	0.250	4.72	0.01

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-9
Sample Description : Air Quality
Location : สถานี 3 บริเวณวัดเสมียนนารี (GPS 47P 0668217, 1530582)
Sampled Date : Oct 08-09, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 09, 2022	06:05 AM	0.325	7.35	0.012	0.475	30.50	0.018	0.225	-	0.002
	08:15 AM	0.525	5.81	0.021	0.950	7.35	0.055	0.225	6.76	0.006
	09:02 AM	0.350	12.50	0.009	0.550	6.58	0.026	0.300	18.20	0.012
	09:45 AM	0.175	6.94	0.006	0.475	8.93	0.021	0.300	7.81	0.014
Max		0.700	19.30	0.021	1.030	30.50	0.055	0.675	18.20	0.014
Standard		7.325	19.30	-	10.125	30.50	-	7.050	18.20	-
Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).										

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-10
Sample Description : Air Quality
Location : สถานีที่ 4 บริเวณโรงเขี่ยรถโดยสารสาธารณะ (GPS 47P 0668981, 1532142)
Sampled Date : Oct 06-07, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 06, 2022	12:05 PM	0.500	7.14	0.017	0.625	5.95	0.01	0.225	23.50	0.005
	01:23 PM	0.200	-	0.003	0.350	22.30	0.018	0.325	3.52	0.015
	01:55 PM	0.250	7.14	0.006	0.475	11.90	0.024	0.225	-	0.007
	03:07 PM	0.425	4.10	0.012	0.800	5.81	0.032	0.275	3.50	0.014
	03:55 PM	0.225	25.00	0.005	0.250	8.33	0.027	0.225	0.35	0.01
	06:05 PM	0.150	-	0.001	0.375	4.46	0.006	0.200	-	0.004
	07:45 PM	0.200	27.30	0.003	0.350	6.58	0.027	0.250	-	0.011
	09:00 PM	0.175	-	0.004	0.425	2.84	0.004	0.375	-	0.002

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number : 22121126-10
Sample Description : Air Quality
Location : สถานีที่ 4 บริเวณโรงเขี่ยรถโดยสารสาธารณะ (GPS 47P 0668981, 1532142)
Sampled Date : Oct 06-07, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 07, 2022	05:55 AM	0.150	31.50	0.002	0.425	3.57	0.002	0.275	-	0.001
	06:32 AM	0.150	-	0.001	0.250	20.30	0.001	0.300	-	0.001
	07:15 AM	0.200	-	0.005	0.350	5.81	0.049	0.450	4.31	0.016
	09:05 AM	0.225	24.30	0.005	0.425	5.21	0.021	0.300	6.41	0.013
Max		0.500	31.50	0.017	0.800	22.30	0.049	0.450	23.50	0.016
Standard		10.375	31.50	-	8.075	22.30	-	8.375	23.50	-
Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).										

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number : 22121126-11
Sample Description : Air Quality
Location : สถานีที่ 4 บริเวณโรงเขี่ยรถโดยสารกลางสถานี (GPS 47P 0668981, 1532142)
Sampled Date : Oct 07-08, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 07, 2022	11:53 AM	0.150	-	0	0.375	-	0.001	0.450	-	0.002
	01:07 PM	0.200	-	0.001	0.150	35.70	0.002	0.625	-	0.002
	02:25 PM	0.175	18.60	0.001	0.350	-	0.025	0.275	8.06	0.01
	03:00 PM	0.375	-	0.002	0.950	-	0.029	0.275	11.90	0.01
	05:02 PM	0.625	-	0.003	1.430	-	0.023	0.300	7.81	0.01
	06:00 PM	0.375	5.32	0.013	0.725	4.90	0.033	0.275	10.00	0.008
	08:08 PM	0.375	6.25	0.018	0.675	3.05	0.002	0.675	-	0.002

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Project Name :
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Sample Number : 22121126-11
Sample Description : Air Quality
Location : สถานีที่ 4 บริเวณโรงเขี่ยรถโดยสารกลางสถานี (GPS 47P 0668981, 1532142)
Sampled Date : Oct 07-08, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 08, 2022	05:55 AM	0.275	11.40	0.008	0.550	11.30	0.001	0.275	14.70	0.001
	06:45 AM	0.400	7.81	0.013	0.825	2.98	0.001	0.375	-	0.001
	07:53 AM	0.425	-	0.002	0.825	-	0	0.525	-	0.003
	08:00 AM	0.150	23.70	0	0.300	-	0.001	0.575	-	0.002
	09:02 AM	0.250	35.70	0.001	0.225	-	0.001	0.225	-	0.001
	Max	0.625	35.70	0.018	1.430	35.70	0.033	0.675	14.70	0.01
Standard		11.425	35.70	-	11.425	35.70	-	6.175	14.70	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number : 22121126-12
Sample Description : Air Quality
Location : สถานีที่ 4 บริเวณโรงเขี่ยรถโดยสารสาธารณะ (GPS 47P 0668981, 1532142)
Sampled Date : Oct 08-09, 2022
Sampled by : Teeravut Sukdee

Equipment Data

Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 08, 2022	01:05 PM	0.325	7.14	0.009	0.500	12.50	0.019	0.350	10.00	0.015
	01:43 PM	0.400	5.81	0.01	0.600	7.14	0.026	0.425	4.17	0.022
	03:00 PM	0.225	12.80	0.006	0.450	3.57	0.036	0.325	27.80	0.011
	05:03 PM	0.500	3.68	0.012	0.675	4.31	0.037	0.250	14.70	80.007
	05:35 PM	0.350	5.32	0.009	0.625	2.60	0.022	0.350	8.33	0.011
	07:05 PM	0.300	8.06	0.009	0.575	10.04	0.01	0.275	17.90	0.006
	08:10 PM	0.150	20.80	0.003	0.450	4.17	0.022	0.275	19.20	0.008

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number : 22121126-12
Sample Description : Air Quality
Location : สถานีที่ 4 บริเวณโรงเขี่ยรถโดยสารสาธารณะ (GPS 47P 0668981, 1532142)
Sampled Date : Oct 08-09, 2022
Sampled by : Teeravut Sukdee

Equipment Data

Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 09, 2022	05:55 AM	0.225	9.26	0.007	0.350	15.60	0.019	0.250	-	0.006
	06:05 AM	0.250	11.40	0.004	0.375	3.73	0.036	0.275	10.90	0.01
	07:50 AM	0.250	6.50	0.006	0.350	18.30	0.013	0.200	-	0.003
	08:43 AM	0.325	4.63	0.01	0.450	7.81	0.014	0.275	35.70	0.008
	09:05 AM	0.250	11.90	0.004	0.400	2.69	0.026	0.250	5.21	0.012
Max		0.500	20.80	0.012	0.675	18.30	0.037	0.425	35.70	80.007
Standard		7.700	20.80	-	7.075	18.30	-	11.425	35.70	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Sample Number : 22121126-13
Sample Description : Air Quality
Location : สถานีที่ 5 บริเวณโรงเชื่อมรางเขน (GPS 47P 0669409, 1532958)
Sampled Date : Oct 06-07, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 06, 2022	01:53 PM	0.350	3.47	0.014	0.825	4.55	0.026	0.350	7.81	0.011
	02:05 PM	0.150	-	0.001	0.500	12.50	0.032	0.225	-	0.005
	03:00 PM	0.150	-	0	0.450	19.20	0.049	0.325	5.81	0.01
	05:05 PM	0.400	7.81	0.015	0.850	4.55	0.011	0.375	5.81	0.007
	07:32 PM	0.150	9.26	0.005	0.600	5.43	0.015	0.300	12.50	0.007
	09:00 PM	0.400	6.75	0.013	0.650	5.56	0.013	0.325	12.50	0.006

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-13
Sample Description : Air Quality
Location : สถานีที่ 5 บริเวณโรงเชื่อมรางเขน (GPS 47P 0669409, 1532958)
Sampled Date : Oct 06-07, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 07, 2022	05:55 AM	0.550	7.58	0.024	0.925	5.32	0.028	0.325	10.00	0.013
	06:32 AM	0.200	10.40	0.003	0.300	13.20	0.044	0.250	14.70	0.006
	07:42 AM	0.175	-	0.002	0.375	10.30	0.005	0.225	-	0.007
	08:32 AM	0.200	14.70	0.002	0.425	31.30	0.036	0.225	12.80	0.007
	09:05 AM	0.175	-	0.003	0.575	6.76	0.024	0.425	15.60	0.011
	10:35 AM	0.300	21.80	0.011	0.675	3.38	0.019	0.225	35.70	0.008
	11:25 AM	0.500	16.70	0.009	0.575	3.29	0.04	0.375	3.79	0.013
	Max	0.550	21.80	0.024	0.925	31.30	0.049	0.425	35.70	0.013
Standard		7.950	21.80	-	10.325	31.30	-	11.425	35.70	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Sample Number : 22121126-14
Sample Description : Air Quality
Location : สถานีที่ 5 บริเวณโรงเชื่อมรางเขน (GPS 47P 0669409, 1532958)
Sampled Date : Oct 07-08, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 07, 2022	02:03 PM	0.400	7.81	0.011	0.700	3.91	0.022	0.350	13.90	0.01
	03:00 PM	0.375	5.95	0.013	0.850	5.00	0.034	0.425	4.39	0.014
	05:07 PM	0.275	11.40	0.008	0.550	3.29	0.029	0.350	7.14	0.011
	07:10 PM	0.400	5.21	0.015	0.825	3.85	0.02	0.300	12.50	0.011
	08:53 PM	0.350	5.68	0.01	0.725	3.62	0.036	0.325	4.46	0.017
	10:00 PM	0.300	12.50	0.009	0.600	27.80	0.014	0.200	31.30	0.005

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-14
Sample Description : Air Quality
Location : สถานีที่ 5 บริเวณโรงเชื่อมรางเขน (GPS 47P 0669409, 1532958)
Sampled Date : Oct 07-08, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 08, 2022	05:30 AM	0.300	5.21	0.01	0.650	3.38	0.029	0.300	16.70	0.009
	06:45 AM	0.200	10.90	0.006	0.400	28.10	0.004	0.225	-	0.003
	09:55 AM	0.350	4.90	0.008	0.575	10.00	0.013	0.250	12.90	0.005
	10:02 AM	0.550	-	0.004	0.225	6.76	0.011	0.325	11.90	0.01
	10:05 AM	0.275	13.20	0.005	0.450	12.50	0.007	0.250	-	0.002
	11:35 AM	0.300	4.90	0.005	0.525	5.68	0.016	0.350	19.20	0.006
	11:40 AM	0.550	-	0.008	0.175	31.30	0.006	0.550	41.70	0.004
	11:45 AM	0.250	10.90	0.007	0.650	7.14	0.029	0.400	6.76	0.012
	11:55 AM	0.225	13.90	0.006	0.500	4.31	0.028	0.200	-	0.004
	Max	0.550	13.90	0.015	0.850	31.30	0.036	0.550	41.70	0.017
Standard		5.975	13.90	-	10.325	31.30	-	12.925	41.70	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number : 22121126-15
Sample Description : Air Quality
Location : สถานีที่ 5 บริเวณโรงเชื่อมรางแขวน (GPS 47P 0669409, 1532958)
Sampled Date : Oct 08-09, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 08, 2022	02:55 PM	0.200	14.00	0.004	0.500	3.62	0.024	0.225	-	0.005
	03:07 PM	0.350	5.43	0.013	0.475	27.80	0.023	0.200	-	0.003
	06:05 PM	0.300	7.35	0.011	0.525	12.50	0.018	0.275	-	0.006
	06:10 PM	0.325	7.14	0.009	0.500	6.41	0.034	0.500	3.16	0.025
	07:45 PM	0.400	5.81	0.01	0.600	4.46	0.019	0.350	10.00	0.015

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Sample Number : 22121126-15
Sample Description : Air Quality
Location : สถานีที่ 5 บริเวณโรงเชื่อมรางแขวน (GPS 47P 0669409, 1532958)
Sampled Date : Oct 08-09, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 09, 2022	05:55 AM	0.225	27.80	0.006	0.450	12.50	0.026	0.425	4.17	0.022
	06:23 AM	0.500	3.68	0.012	0.675	7.14	0.036	0.325	27.80	0.011
	07:54 AM	0.350	5.32	0.009	0.625	3.57	0.037	0.250	15.70	80.007
	09:10 AM	0.225	11.90	0.003	0.300	15.80	0.013	0.200	-	0.003
	10:00 AM	0.275	4.55	0.009	0.475	4.03	0.023	0.275	4.17	0.009
	11:47 AM	0.325	4.55	0.009	0.575	6.25	0.03	0.350	4.24	0.015
Max		0.500	27.80	0.013	0.675	27.80	0.037	0.500	27.80	80.007
Standard		9.450	27.80	-	9.450	27.80	-	9.450	27.80	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37, B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Sample Number : 22121126-16
Sample Description : Air Quality
Location : สถานีที่ 6 บริเวณตลาดหลักสี่ (GPS 47P 0670741, 1535417)
Sampled Date : Oct 14-15, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 14, 2022	11:05 AM	0.125	-	0.001	0.600	2.94	0.005	0.200	-	0.003
	12:03 PM	0.175	23.20	0.002	0.375	19.20	0.028	0.425	27.80	0.013
	03:52 PM	0.350	6.10	0.011	0.600	3.97	0.015	0.300	9.62	0.008
	04:02 PM	0.125	-	0.001	0.350	37.50	0.044	0.275	31.30	0.009
	06:14 PM	0.300	4.39	0.01	0.500	3.52	0.018	0.325	7.58	0.008
	07:18 PM	0.300	13.90	0.01	0.450	4.39	0.027	0.258	13.90	0.009
	10:00 PM	0.300	6.10	0.01	0.625	4.31	0.014	0.200	25.80	0.006

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Date Received : Oct 24, 2022
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Sample Number : 22121126-16
Sample Description : Air Quality
Location : สถานีที่ 6 บริเวณตลาดหลักสี่ (GPS 47P 0670741, 1535417)
Sampled Date : Oct 14-15, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 15, 2022	05:52 AM	0.150	-	0.002	0.400	8.62	0.029	0.200	-	0.006
	06:02 AM	0.200	17.90	0.005	0.575	5.10	0.014	0.200	-	0.004
	08:11 AM	0.300	6.58	0.011	0.600	5.68	0.022	0.250	6.94	0.006
	08:47 AM	0.250	25.00	0.005	0.425	6.10	0.023	0.200	10.00	0.01
Max		0.350	25.00	0.011	0.625	37.50	0.044	0.425	31.30	0.013
Standard		8.750	25.00	-	11.875	37.50	-	10.325	31.30	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Sample Number : 22121126-17
Sample Description : Air Quality
Location : สถานีที่ 6 บริเวณตลาดหลักสี่ (GPS 47P 0670741, 1535417)
Sampled Date : Oct 15-16, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 15, 2022	11:05 AM	0.225	50.00	0.005	0.450	5.32	0.016	0.250	7.81	0.007
	11:53 AM	0.200	35.70	0.008	0.400	4.63	0.038	0.350	7.58	0.017
	12:08 PM	0.350	4.63	0.01	0.575	35.70	0.024	0.325	4.39	0.015
	02:10 PM	0.225	10.40	0.006	0.400	3.57	0.017	0.175	-	0.002
	05:05 PM	0.450	4.63	0.016	0.800	14.70	0.012	0.175	17.40	0.002
	07:10 PM	0.225	-	0.005	0.450	9.26	0.013	0.225	-	0.004
	07:15 PM	0.250	10.40	0.007	0.350	8.93	0.034	0.300	15.60	0.008
	10:00 PM	0.175	22.00	0.006	0.300	3.21	0.032	0.300	3.73	0.011
	10:03 PM	0.300	7.14	0.006	0.325	4.63	0.039	0.225	9.62	0.009

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Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
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Sample Number : 22121126-17
Sample Description : Air Quality
Location : สถานีที่ 6 บริเวณตลาดหลักสี่ (GPS 47P 0670741, 1535417)
Sampled Date : Oct 15-16, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 16, 2022	05:05 AM	0.650	10.00	0.015	0.675	5.68	0.025	0.375	7.81	0.011
	06:10 AM	0.250	11.90	0.004	0.400	2.69	0.026	0.250	5.21	0.012
	07:11 AM	0.850	16.70	0.008	0.900	15.60	0.019	0.675	22.70	0.012
	07:32 AM	0.250	7.81	0.008	0.400	4.10	0.02	0.275	10.40	0.007
Max		0.850	50.00	0.016	0.900	35.70	0.039	0.675	22.70	0.017
Standard		15.000	50.00	-	11.425	35.70	-	8.175	22.70	-
Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).										

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Sample Number : 22121126-18
Sample Description : Air Quality
Location : สถานีที่ 6 บริเวณตลาดหลักสี่ (GPS 47P 0670741, 1535417)
Sampled Date : Oct 16-17, 2022
Sampled by : Teeravut Sukdee

Equipment Data

Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 16, 2022	01:05 PM	0.325	3.05	0.017	0.625	3.73	0.037	0.225	6.76	0.009
	03:17 PM	0.375	9.62	0.019	0.750	3.68	0.039	0.200	27.80	0.006
	04:11 PM	0.200	3.33	0.009	0.400	6.41	0.022	0.325	6.41	0.01
	09:30 PM	0.150	6.25	0.005	0.350	25.00	0.016	0.250	13.90	0.005
	10:50 PM	0.325	11.40	0.015	0.500	7.35	0.022	0.300	10.40	0.023

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number : 22121126-18
Sample Description : Air Quality
Location : สถานีที่ 6 บริเวณตลาดหลักสี่ (GPS 47P 0670741, 1535417)
Sampled Date : Oct 16-17, 2022
Sampled by : Teeravut Sukdee

Equipment Data

Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 17, 2022	05:08 AM	0.250	8.93	0.009	0.400	5.43	0.015	0.275	4.81	0.009
	06:32 AM	0.700	-	0.002	1.030	-	0.002	0.275	4.10	0.008
	07:00 AM	0.275	7.14	0.006	0.525	2.87	0.034	0.175	17.90	0.004
	07:54 AM	0.325	7.81	0.013	0.575	6.94	0.023	0.250	14.10	0.007
	08:06 AM	0.325	8.93	0.013	0.475	20.80	0.016	0.225	10.90	0.006
	08:10 AM	0.350	3.16	0.017	0.600	4.24	0.038	0.675	-	0.003
	08:23 AM	0.350	12.50	0.009	0.550	6.58	0.026	0.300	8.06	0.012
	Max	0.700	12.50	0.019	1.030	25.00	0.039	0.675	27.80	0.023
Standard		5.625	12.50	-	8.750	25.00	-	9.450	27.80	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Sample Number : 22121126-19
Sample Description : Air Quality
Location : สถานี 7 บริเวณขบวนรถเคหะหลวง (GPS 47P 0671684, 1537181)
Sampled Date : Oct 20-21, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 20, 2022	03:00 PM	0.300	5.95	0.007	0.525	5.95	0.076	0.550	4.39	0.02
	06:26 PM	0.250	5.95	0.005	0.350	2.35	0.026	0.400	6.10	0.011
	07:10 PM	0.600	8.33	0.018	0.900	3.62	0.014	0.275	6.58	0.01
	10:05 PM	1.100	6.41	0.037	1.680	5.21	0.014	0.250	8.62	0.009

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Project Name :
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Sample Number : 22121126-19
Sample Description : Air Quality
Location : สถานี 7 บริเวณขบวนรถเคหะหลวง (GPS 47P 0671684, 1537181)
Sampled Date : Oct 20-21, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 21, 2022	05:07 AM	0.500	7.14	0.017	0.625	5.95	0.04	0.400	7.35	0.016
	06:10 AM	0.200	-	0.003	0.350	20.80	0.01	0.225	7.35	0.005
	07:45 AM	0.250	7.14	0.006	0.475	11.90	0.018	0.325	3.52	0.015
	11:25 AM	0.425	4.10	0.012	0.800	5.81	0.024	0.225	-	0.007
	12:03 PM	0.225	25.00	0.005	0.250	8.33	0.032	0.275	-	0.014
Max		1.100	25.00	0.037	1.680	20.80	0.076	0.550	8.62	0.02
Standard		8.750	25.00	-	7.700	20.80	-	4.655	8.62	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-20
Sample Description : Air Quality
Location : สถานี 7 บริเวณขบวนรถเคหะวังหลวง (GPS 47P 0671684, 1537181)
Sampled Date : Oct 21-22, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 21, 2022	02:02 PM	0.300	11.40	0.011	0.275	50.00	0.004	0.225	25.00	0.005
	04:32 PM	0.550	5.00	0.025	0.475	5.10	0.014	0.325	19.20	0.01
	05:05 PM	0.300	-	0.012	0.275	50.00	0.007	0.125	-	0.002
	06:52 PM	0.375	3.91	0.018	0.275	10.90	0.008	0.400	6.94	0.01
	09:03 PM	0.450	5.21	0.016	0.275	10.90	0.007	0.200	7.35	0.005
	10:30 PM	0.400	16.70	0.028	0.250	28.70	0.007	0.200	-	0.007

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Sample Number : 22121126-20
Sample Description : Air Quality
Location : สถานี 7 บริเวณขบวนรถเคหะวังหลวง (GPS 47P 0671684, 1537181)
Sampled Date : Oct 21-22, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 22, 2022	05:10 AM	0.575	3.52	0.03	0.325	5.32	0.008	0.225	18.00	0.005
	06:15 AM	0.400	5.32	0.016	0.250	7.81	0.007	0.200	35.70	0.008
	08:32 AM	0.800	4.63	0.038	0.350	7.58	0.017	0.350	4.63	0.01
	10:15 AM	0.450	27.50	0.024	0.325	4.39	0.015	0.225	10.40	0.006
	11:24 AM	0.350	3.57	0.017	0.175	-	0.002	0.450	4.63	0.016
	12:45 PM	0.300	41.70	0.012	0.175	41.70	0.002	0.225	-	0.005
Max		0.800	41.70	0.038	0.475	50.00	0.017	0.450	35.70	0.016
Standard		12.925	41.70	-	15.000	50.00	-	11.425	35.70	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Sample Number : 22121126-21
Sample Description : Air Quality
Location : สถานี 7 บริเวณขบวนรถโดยสารสองห้อง (GPS 47P 0671684, 1537181)
Sampled Date : Oct 22-23, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 22, 2022	03:02 PM	0.700	3.16	0.047	0.225	-	0.007	0.400	31.30	0.007
	04:30 PM	0.475	3.33	0.028	0.250	17.50	0.011	0.375	4.90	0.012
	06:10 PM	0.225	22.70	0.006	0.750	14.70	0.01	0.225	25.60	0.008
	10:15 PM	0.575	25.00	0.023	0.250	-	0.005	0.200	-	0.004

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Sample Number : 22121126-21
Sample Description : Air Quality
Location : สถานี 7 บริเวณขบวนรถโดยสารสองห้อง (GPS 47P 0671684, 1537181)
Sampled Date : Oct 22-23, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1852	1852	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 23, 2022	04:20 AM	0.475	3.85	0.031	0.275	-	0.008	0.175	-	0.002
	06:15 AM	0.450	7.14	0.013	0.250	17.90	0.01	0.325	7.81	0.01
	08:35 AM	0.425	13.50	0.015	0.300	7.14	0.011	0.250	-	0.009
	11:10 AM	0.500	3.62	0.025	0.250	-	0.009	0.250	7.81	0.009
	11:55 AM	0.475	3.42	0.033	0.225	41.70	0.008	0.225	6.41	0.01
	12:03 PM	0.500	6.76	0.023	0.325	6.94	0.012	0.275	14.70	0.005
	12:10 PM	0.450	-	0.027	0.250	16.70	0.01	0.225	20.80	0.004
Max		0.700	25.00	0.047	0.750	41.70	0.012	0.400	31.30	0.012
Standard		8.750	25.00	-	12.925	41.70	-	10.325	31.30	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Sample Number : 22121126-22
Sample Description : Air Quality
Location : สถานี 8 บริเวณวัดดอนเมือง (GPS 47P 0672958, 1539708)
Sampled Date : Oct 14-15, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 14, 2022	12:05 PM	0.450	12.50	0.019	0.350	10.00	0.015	0.350	5.32	0.009
	03:10 PM	0.675	7.14	0.026	0.425	4.17	0.022	0.300	8.06	0.009
	03:23 PM	0.625	3.57	0.036	0.325	17.80	0.011	0.150	18.20	0.003
	06:05 PM	0.575	4.31	0.037	0.250	41.70	80.007	0.225	9.26	0.007
	07:10 PM	0.450	2.60	0.022	0.350	8.33	0.011	0.250	11.40	0.004

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number : 22121126-22
Sample Description : Air Quality
Location : สถานี 8 บริเวณวัดดอนเมือง (GPS 47P 0672958, 1539708)
Sampled Date : Oct 14-15, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 15, 2022	06:15 AM	0.350	10.04	0.01	0.275	17.90	0.006	0.250	6.50	0.006
	07:14 AM	0.375	4.17	0.022	0.275	19.20	0.008	0.375	11.90	0.012
	08:55 AM	0.350	15.60	0.019	0.250	-	0.006	0.225	11.90	0.003
	09:02 AM	0.700	3.73	0.036	0.275	10.90	0.01	0.225	3.57	0.013
	09:10 AM	0.300	28.70	0.013	0.200	-	0.003	0.225	11.90	0.003
	09:15 AM	0.400	4.81	0.011	0.200	6.10	80.008	0.275	4.55	0.009
Max		0.700	28.70	0.037	0.425	41.70	80.008	0.375	18.20	0.013
Standard		9.675	28.70	-	12.925	41.70	-	7.050	18.20	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-23
Sample Description : Air Quality
Location : สถานี 8 บริเวณวัดดอนเมือง (GPS 47P 0672958, 1539708)
Sampled Date : Oct 15-16, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 15, 2022	11:15 AM	0.375	11.90	0.012	0.700	3.73	0.036	0.200	6.10	80.008
	01:07 PM	0.225	10.60	0.003	0.300	27.80	0.013	0.200	-	0.003
	03:10 PM	0.225	3.57	0.013	0.400	4.81	0.011	0.275	4.17	0.009
	07:13 PM	0.225	11.90	0.003	0.300	28.30	0.013	0.350	4.24	0.015
	07:15 PM	0.275	4.55	0.009	0.475	4.03	0.023	0.275	11.30	0.008
	10:01 PM	0.325	4.55	0.009	0.575	6.25	0.03	0.300	7.14	0.011

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Project Name :
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Sample Number : 22121126-23
Sample Description : Air Quality
Location : สถานี 8 บริเวณวัดดอนเมือง (GPS 47P 0672958, 1539708)
Sampled Date : Oct 15-16, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 16, 2022	04:55 AM	0.225	35.70	0.008	0.475	3.85	0.031	0.275	11.90	0.01
	06:10 AM	0.175	-	0.002	0.425	31.30	0.015	0.250	-	0.005
	07:35 AM	0.225	20.80	0.004	0.425	5.81	0.018	0.675	22.70	0.012
	09:12 AM	0.375	4.90	0.012	0.575	25.00	0.023	0.200	-	0.005
	09:56 AM	0.850	16.70	0.008	0.900	15.60	0.019	0.250	5.21	0.012
	Max	0.850	35.70	0.013	0.900	31.30	0.036	0.675	22.70	80.008
Standard		11.425	35.70	-	10.325	31.30	-	8.175	22.70	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
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Date Received : Oct 24, 2022
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Sample Number : 22121126-24
Sample Description : Air Quality
Location : สถานี 8 บริเวณวัดดอนเมือง (GPS 47P 0672958, 1539708)
Sampled Date : Oct 16-17, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 16, 2022	03:35 PM	0.250	25.00	0.005	0.425	6.10	0.018	0.775	15.60	0.016
	04:10 PM	0.200	8.06	0.006	0.400	5.43	0.037	0.325	0.33	0.011
	07:55 PM	0.875	32.30	0.005	0.550	4.31	0.014	0.200	0.87	0.004
	09:10 PM	0.325	3.97	0.012	0.725	3.68	0.02	0.200	13.90	0.007
	10:07 PM	0.250	11.90	0.006	0.400	12.70	0.046	0.325	7.14	0.015

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Sample Number : 22121126-24
Sample Description : Air Quality
Location : สถานี 8 บริเวณวัดดอนเมือง (GPS 47P 0672958, 1539708)
Sampled Date : Oct 16-17, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 17, 2022	06:00 AM	0.125	-	0.001	0.375	4.63	0.025	0.250	5.68	0.009
	07:45 AM	0.200	20.80	0.004	0.575	4.10	0.015	0.225	10.00	0.007
	08:10 AM	0.150	25.00	0.004	0.550	2.91	0.031	0.300	3.21	0.009
	09:56 AM	0.325	8.62	0.011	0.550	17.90	0.022	0.225	27.80	0.008
Max		0.875	32.30	0.012	0.725	17.90	0.046	0.775	27.80	0.016
Standard		10.575	32.30	-	6.975	17.90	-	9.450	27.80	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Bangkok Thailand 10900

Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-25
Sample Description : Air Quality
Location : สถานี 9 บริเวณทางผ่านประตู (GPS 47P 0673425, 1544724)
Sampled Date : Oct 14-15, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 14, 2022	01:00 PM	0.275	11.90	0.006	0.475	4.03	0.019	0.275	8.93	0.009
	05:45 PM	0.325	8.93	0.01	0.575	8.33	0.026	0.500	7.14	0.013
	06:10 PM	0.200	18.30	0.004	0.600	4.10	0.021	0.325	10.40	0.008
	10:03 PM	0.325	10.40	0.006	0.500	7.35	0.015	0.300	7.35	0.011
	10:05 PM	0.275	5.21	0.008	0.525	9.26	0.022	0.325	4.55	0.014

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Project Name :
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Sample Number : 22121126-25
Sample Description : Air Quality
Location : สถานี 9 บริเวณทางผ่านประตู (GPS 47P 0673425, 1544724)
Sampled Date : Oct 14-15, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 15, 2022	06:12 AM	0.175	35.70	0.002	0.450	8.62	0.014	0.375	22.70	0.006
	07:25 AM	0.550	-	0.004	0.375	7.35	0.033	0.375	5.81	0.011
	07:57 AM	0.200	9.26	0.008	0.525	15.80	0.022	0.200	-	0.002
	09:23 AM	0.150	25.00	0.004	0.450	4.17	0.025	0.325	6.58	0.014
	09:25 AM	0.150	-	0.003	0.375	4.63	0.015	0.225	12.50	0.01
	09:45 AM	0.125	-	0.004	0.775	3.13	0.054	0.400	3.42	0.024
Max		0.550	35.70	0.01	0.775	15.80	0.054	0.500	22.70	0.024
Standard		11.425	35.70	-	6.450	15.80	-	8.175	22.70	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number 22121126-26
Sample Description Air Quality
Location สถานี 9 บริเวณทางเข้าประตู (GPS 47P 0673425, 1544724)
Sampled Date Oct 15-16, 2022
Sampled by Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 15, 2022	03:05 PM	0.175	7.81	0.006	0.275	17.90	0.023	0.350	5.95	0.013
	04:10 PM	0.200	5.21	0.006	0.300	7.35	0.019	0.300	4.63	0.007
	07:03 PM	0.200	5.43	0.008	0.550	4.63	0.019	0.225	-	0.006
	10:45 PM	0.250	7.35	0.008	0.475	5.00	0.026	0.400	6.94	0.022

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Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number 22121126-26
Sample Description Air Quality
Location สถานี 9 บริเวณทางเข้าประตู (GPS 47P 0673425, 1544724)
Sampled Date Oct 15-16, 2022
Sampled by Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 16, 2022	05:02 AM	0.125	-	0.004	0.425	5.00	0.029	0.250	17.90	0.009
	07:45 AM	0.125	25.00	0.003	0.500	3.91	0.024	0.250	4.46	0.012
	08:00 AM	0.300	3.79	0.012	0.550	12.90	0.026	0.200	17.50	0.01
	08:15 AM	0.300	17.90	0.013	0.425	4.03	0.039	0.250	2.81	0.009
	08:22 AM	0.150	11.40	0.003	0.375	25.00	0.013	0.225	4.63	0.009
	09:04 AM	0.150	7.14	0.008	0.450	4.03	0.013	0.225	6.76	0.009
Max		0.300	25.00	0.013	0.550	25.00	0.039	0.400	17.90	0.022
Standard		8.750	25.00	-	8.750	25.00	-	6.975	17.90	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number 22121126-27
Sample Description Air Quality
Location สถานีที่ 9 บริเวณทางผ่านประตู (GPS 47P 0673425, 1544724)
Sampled Date Oct 16-17, 2022
Sampled by Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 16, 2022	01:00 PM	0.600	31.30	0.023	0.250	27.80	0.015	0.625	0.735	0.025
	01:52 PM	0.650	35.70	0.029	0.175	3.21	0.028	0.325	8.33	0.014
	03:05 PM	1.250	5.00	0.04	0.275	3.79	0.027	0.225	2.75	0.009
	05:10 PM	0.550	27.80	0.015	0.200	5.10	0.05	0.25	11.9	0.012
	06:55 PM	0.500	3.21	0.028	0.300	35.70	0	0.4	7.58	0.015

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number 22121126-27
Sample Description Air Quality
Location สถานีที่ 9 บริเวณทางผ่านประตู (GPS 47P 0673425, 1544724)
Sampled Date Oct 16-17, 2022
Sampled by Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 17, 2022	06:50 AM	0.700	3.79	0.027	0.425	6.25	0.031	0.325	-	0.002
	06:52 AM	0.750	5.10	0.05	0.450	1.50	0.01	0.275	7.58	0.011
	07:05 AM	0.125	35.70	0	0.250	27.80	0.006	0.2	12.5	0.008
	07:10 AM	0.750	6.25	0.031	0.400	6.25	0.018	0.25	-	0.002
	07:55 AM	0.350	25.80	0.01	0.225	4.72	0.034	0.225	5.1	0.007
	08:05 AM	0.300	27.80	0.006	0.400	14.70	0.024	0.3	5	0.011
Max		1.250	35.70	0.05	0.450	35.70	0.05	0.625	12.50	0.025
Standard		11.425	35.70	-	11.425	35.70	-	5.625	12.50	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 1 of 6

Sample Number : 22121126-28
Sample Description : Air Quality
Location : สถานีที่ 10 บริเวณโรงเขี่ยรถคนโกสินทร์ วงสิด (GPS 47P 0673306, 1547291)
Sampled Date : Oct 14-15, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 14, 2022	02:25 PM	0.250	11.90	0.012	0.700	3.79	0.027	0.250	-	0.002
	05:30 PM	0.400	7.58	0.015	0.750	5.10	0.05	0.225	5.10	0.007
	08:05 PM	0.325	-	0.002	0.125	35.70	0	0.300	5.00	0.011
	09:00 PM	0.275	7.58	0.011	0.750	6.25	0.031	0.250	9.62	0.01

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 2 of 6

Sample Number : 22121126-28
Sample Description : Air Quality
Location : สถานีที่ 10 บริเวณโรงเขี่ยรถคนโกสินทร์ วงสิด (GPS 47P 0673306, 1547291)
Sampled Date : Oct 14-15, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 15, 2022	05:45 AM	0.200	12.50	0.008	0.350	27.60	0.01	0.300	13.90	0.017
	06:05 AM	0.250	-	0.002	0.300	27.80	0.006	0.325	7.35	0.012
	06:32 AM	0.225	5.10	0.007	0.575	6.25	0.018	0.525	5.81	0.021
	07:10 AM	0.300	5.00	0.011	0.775	4.72	0.034	0.250	19.10	0.012
	10:45 AM	0.250	9.62	0.01	0.600	14.70	0.024	0.300	9.62	0.002
	11:10 AM	0.300	13.90	0.017	0.650	4.81	0.042	0.375	6.41	0.02
	11:32 AM	0.325	7.35	0.012	0.475	31.30	0.018	0.175	27.80	0.008
Max		0.400	13.90	0.017	0.775	35.70	0.05	0.525	27.80	0.021
Standard		5.975	13.90	-	11.425	35.70	-	9.450	27.80	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-29
Sample Description : Air Quality
Location : สถานีที่ 10 บริเวณโรงเรือนรถคนโดยสารรถไฟฟ้า วงสิด (GPS 47P 0673306, 1547291)
Sampled Date : Oct 15-16, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 15, 2022	02:03 PM	0.325	7.81	0.013	0.350	25.00	0.016	0.175	1.90	0.004
	03:10 PM	0.325	8.93	0.013	0.500	7.35	0.022	0.250	11.40	0.007
	04:55 PM	0.350	3.16	0.017	0.400	5.43	0.015	0.225	10.90	0.006
	05:58 PM	0.350	12.50	0.009	1.030	3.20	0.002	0.675	1.30	0.003
	08:04 PM	0.175	6.94	0.006	0.525	2.87	0.034	0.300	8.06	0.012

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Bangkok Thailand 10900

Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number : 22121126-29
Sample Description : Air Quality
Location : สถานีที่ 10 บริเวณโรงเรือนรถคนโดยสารรถไฟฟ้า วงสิด (GPS 47P 0673306, 1547291)
Sampled Date : Oct 15-16, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 16, 2022	05:55 AM	0.225	19.20	0.003	0.575	6.94	0.023	0.350	6.41	0.011
	06:52 AM	0.300	6.25	0.008	0.475	20.80	0.016	0.300	8.62	0.011
	10:05 AM	0.225	5.81	0.009	0.600	4.24	0.038	0.375	8.33	0.012
	11:06 AM	0.175	-	0.002	0.550	6.58	0.026	0.300	19.20	0.012
	11:35 AM	0.225	4.46	0.006	0.475	8.93	0.021	0.300	7.81	0.014
	11:55 AM	0.250	3.62	0.01	0.300	5.68	0.016	0.200	25.00	0.007
Max		0.350	19.20	0.017	1.030	25.00	0.038	0.675	25.00	0.014
Standard		7.300	19.20	-	8.750	25.00	-	8.750	25.00	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Bangkok Thailand 10900

Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number : 22121126-30
Sample Description : Air Quality
Location : สถานีที่ 10 บริเวณโรงเขี่ยรถคนโกสินทร์ วงสิด (GPS 47P 0673306, 1547291)
Sampled Date : Oct 16-17, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 16, 2022	02:15 PM	0.650	4.81	0.042	0.150	6.25	0.005	0.425	6.94	0.016
	03:03 PM	0.475	3.25	0.018	0.325	11.40	0.015	0.375	7.14	0.014
	04:05 PM	0.950	7.35	0.055	0.250	8.93	0.009	0.225	-	0.001
	04:10 PM	0.700	3.79	0.027	0.700	0.57	0.002	0.325	5.81	0.011
	07:25 PM	0.600	4.03	0.024	0.275	7.14	0.006	0.350	4.31	0.016

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
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Sample Number : 22121126-30
Sample Description : Air Quality
Location : สถานีที่ 10 บริเวณโรงเขี่ยรถคนโกสินทร์ วงสิด (GPS 47P 0673306, 1547291)
Sampled Date : Oct 16-17, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 17, 2022	05:56 AM	0.750	4.81	0.039	0.325	7.81	0.013	0.350	7.35	0.012
	06:10 AM	0.350	14.70	0.015	0.325	8.93	0.013	0.375	7.14	0.016
	06:55 AM	0.275	8.10	0.01	0.350	3.16	0.017	0.300	6.41	0.013
	08:10 AM	0.300	11.90	0.012	0.350	12.50	0.009	0.175	-	0.004
	08:53 AM	0.550	17.90	0.023	0.175	6.94	0.006	0.325	7.14	0.011
	10:24 AM	0.475	7.35	0.019	0.225	19.20	0.003	0.225	20.80	0.006
	10:55 AM	0.425	4.63	0.019	0.300	6.25	0.008	0.325	1.60	0.012
Max		0.950	17.90	0.055	0.700	19.20	0.017	0.425	20.80	0.016
Standard		6.975	17.90	-	7.300	19.20	-	7.700	20.80	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Bangkok Thailand 10900

Lot ID : 22133470
Date Received : Nov 16, 2022
Date Reported : Dec 22, 2022
Report Number : 2480021-1

P/O :
Project Name :
Project Location :

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Sample Number : 22133470-4
Sample Description : Air Quality
Location : สถานี 11 บริเวณหมู่บ้านโสมเพลส (GPS 47P 0672967, 1547422)
Sampled Date : Nov 10-11, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Nov 10, 2022	11:32 AM	0.850	16.70	0.008	0.575	3.52	0.03	0.250	7.81	0.008
	12:25 PM	0.250	7.81	0.008	0.400	5.32	0.016	0.175	2.65	0.001
	04:45 PM	0.175	-	0.001	0.800	4.63	0.038	0.150	-	0.002
	07:32 PM	0.150	3.50	0.002	0.450	35.70	0.024	0.250	6.41	0.007
	09:05 PM	0.250	6.41	0.007	0.350	3.57	0.017	0.125	-	0

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Lot ID : 22133470
Date Received : Nov 16, 2022
Date Reported : Dec 22, 2022
Report Number : 2480021-1

P/O :
Project Name :
Project Location :

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Sample Number : 22133470-4
Sample Description : Air Quality
Location : สถานี 11 บริเวณหมู่บ้านโสมเพลส (GPS 47P 0672967, 1547422)
Sampled Date : Nov 10-11, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Nov 11, 2022	06:32 AM	0.125	-	0	0.300	32.30	0.012	0.325	4.24	0.008
	07:13 AM	0.325	4.24	0.008	0.325	9.26	0.013	0.175	-	0.003
	07:30 AM	0.175	-	0.003	0.675	8.93	0.034	0.200	50.00	0.004
	07:55 AM	0.200	50.00	0.004	0.550	3.21	0.032	0.325	17.90	0.006
	08:32 AM	0.325	17.90	0.006	0.575	4.63	0.039	0.225	-	0.002
Max		0.850	50.00	0.008	0.800	35.70	0.039	0.325	50.00	0.008
Standard		15.000	50.00	-	11.425	35.70	-	15.000	50.00	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22133470
Date Received : Nov 16, 2022
Date Reported : Dec 22, 2022
Report Number : 2480021-1

P/O :
Project Name :
Project Location :

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Sample Number : 22133470-5
Sample Description : Air Quality
Location : สถานี 11 บริเวณหมู่บ้านโสมเพลส (GPS 47P 0672967, 1547422)
Sampled Date : Nov 11-12, 2022
Sampled by : Teeravut Sukdee

Equipment Data

Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Nov 11, 2022	08:05 AM	0.475	2.50	0.027	0.225	-	0.004	0.325	17.90	0.006
	10:32 AM	0.575	6.94	0.025	0.300	15.60	0.008	0.225	-	0.002
	12:14 PM	0.350	6.58	0.015	0.300	3.73	0.011	0.225	-	0.002
	04:46 PM	0.500	7.14	0.029	0.225	9.62	0.009	0.200	17.00	0.004
	06:01 PM	0.525	4.90	0.021	0.375	7.81	0.011	0.350	5.43	0.013
	07:10 PM	0.300	23.30	0.015	0.250	12.50	0.008	0.300	7.35	0.011
	09:54 PM	0.350	7.81	0.022	0.225	-	0.007	0.325	7.14	0.009

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Date Received : Nov 16, 2022
Date Reported : Dec 22, 2022
Report Number : 2480021-1

P/O :
Project Name :
Project Location :

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Sample Number : 22133470-5
Sample Description : Air Quality
Location : สถานี 11 บริเวณหมู่บ้านโสมเพลส (GPS 47P 0672967, 1547422)
Sampled Date : Nov 11-12, 2022
Sampled by : Teeravut Sukdee

Equipment Data

Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Nov 12, 2022	06:05 AM	0.550	6.58	0.028	0.250	41.70	0.011	0.400	5.81	0.01
	07:10 AM	0.300	11.40	0.011	0.750	14.70	0.01	0.225	27.80	0.006
	08:10 AM	0.550	5.00	0.025	0.250	-	0.005	0.500	3.68	0.012
	08:45 AM	0.300	-	0.012	0.275	-	0.008	0.350	5.32	0.009
	Max	0.575	23.30	0.029	0.750	41.70	0.011	0.500	27.80	0.013
Standard		8.325	23.30	-	12.925	41.70	-	9.450	27.80	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22133470
Date Received : Nov 16, 2022
Date Reported : Dec 22, 2022
Report Number : 2480021-1

P/O :
Project Name :
Project Location :

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Sample Number : 22133470-6
Sample Description : Air Quality
Location : สถานี 11 บริเวณหมู่บ้านโสมเพลส (GPS 47P 0672967, 1547422)
Sampled Date : Nov 12-13, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Nov 12, 2022	12:10 PM	0.525	4.90	0.022	0.325	17.90	0.006	0.350	6.58	0.015
	01:05 PM	0.300	9.40	0.013	0.225	-	0.002	0.500	7.14	0.029
	04:07 PM	0.625	3.09	0.041	0.225	-	0.002	0.525	4.90	0.021
	06:35 PM	0.575	6.25	0.03	0.200	41.70	0.004	0.300	13.00	0.015
	09:10 PM	0.150	-	0.001	0.350	5.43	0.013	0.350	7.81	0.022

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Date Received : Nov 16, 2022
Date Reported : Dec 22, 2022
Report Number : 2480021-1

P/O :
Project Name :
Project Location :

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Sample Number : 22133470-6
Sample Description : Air Quality
Location : สถานี 11 บริเวณหมู่บ้านโสมเพลส (GPS 47P 0672967, 1547422)
Sampled Date : Nov 12-13, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Nov 13, 2022	06:37 AM	0.525	5.56	0.027	0.300	7.35	0.011	0.550	6.58	0.028
	07:45 AM	0.400	4.81	0.011	0.325	7.14	0.009	0.300	1.40	0.011
	08:10 AM	0.450	3.85	0.025	0.400	5.81	0.01	0.550	5.00	0.025
	08:30 AM	0.475	4.03	0.023	0.225	27.80	0.006	0.300	-	0.012
	08:45 AM	0.325	4.63	0.019	0.500	3.68	0.012	0.375	3.91	0.018
	08:55 AM	0.375	3.13	0.024	0.350	5.32	0.009	0.450	5.21	0.016
	08:57 AM	0.475	3.05	0.036	0.300	8.06	0.009	0.400	6.70	0.028
Max		0.625	9.40	0.041	0.500	41.70	0.013	0.550	13.00	0.029
Standard		4.850	9.40	-	12.925	41.70	-	5.750	13.00	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 1 of 6

Sample Number : 22121126-34
Sample Description : Air Quality
Location : สถานีที่ 12 บริเวณอาคารฟักดาชัยเนโทรสกาย ประชาชน (GPS 47P 0665929, 1528619)
Sampled Date : Oct 20-21, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 20, 2022	01:05 PM	0.250	3.62	0.01	1.350	3.05	0.072	0.250	-	0.009
	03:52 PM	0.375	6.25	0.011	0.425	5.21	0.021	0.450	12.50	0.015
	05:03 PM	0.125	7.35	0.003	0.275	4.46	0.014	0.550	4.39	0.02
	07:10 PM	0.250	31.30	0.008	0.450	4.72	0.027	0.400	6.10	0.011
	08:54 PM	0.300	5.95	0.007	0.300	6.94	0.012	0.275	6.58	0.01

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-34
Sample Description : Air Quality
Location : สถานีที่ 12 บริเวณอาคารฟักดาชัยเนโทรสกาย ประชาชน (GPS 47P 0665929, 1528619)
Sampled Date : Oct 20-21, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 21, 2022	04:05 AM	0.250	5.95	0.005	0.500	4.17	0.022	0.250	8.62	0.009
	06:10 AM	0.600	8.33	0.018	0.350	2.94	0.015	0.400	7.35	0.016
	09:25 AM	1.100	6.41	0.037	0.750	4.46	0.029	0.225	35.70	0.005
	10:03 AM	0.500	7.14	0.017	0.700	3.38	0.041	0.325	3.52	0.015
	10:55 AM	0.200	-	0.003	0.350	11.70	0.007	0.225	0.30	0.007
	11:32 AM	0.250	7.14	0.006	0.275	2.81	0.01	0.275	-	0.014
	11:35 AM	0.425	4.10	0.012	0.700	2.87	0.04	0.225	-	0.01
	Max	1.100	31.30	0.037	1.350	11.70	0.072	0.550	35.70	0.02
Standard		10.325	31.30	-	5.425	11.70	-	11.425	35.70	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-35
Sample Description : Air Quality
Location : สถานีที่ 12 บริเวณอาคารฟักอากาศในโหลสาย ประชาชน (GPS 47P 0665929, 1528619)
Sampled Date : Oct 21-22, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 21, 2022	02:03 PM	0.300	13.90	0.008	0.500	7.14	0.029	0.425	6.94	0.016
	04:10 PM	0.275	13.90	0.006	0.525	4.90	0.021	0.375	7.14	0.014
	05:25 PM	0.150	1.80	0.004	0.300	3.25	0.015	0.225	-	0.001
	07:54 PM	0.225	25.00	0.005	0.350	7.81	0.022	0.325	5.81	0.011
	09:32 PM	0.325	19.20	0.01	0.550	6.58	0.028	0.350	4.31	0.016

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

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Sample Number : 22121126-35
Sample Description : Air Quality
Location : สถานีที่ 12 บริเวณอาคารฟักอากาศในโหลสาย ประชาชน (GPS 47P 0665929, 1528619)
Sampled Date : Oct 21-22, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 22, 2022	05:09 AM	0.125	-	0.002	0.300	11.40	0.011	0.350	7.35	0.012
	06:10 AM	0.400	6.94	0.01	0.550	5.00	0.025	0.375	3.50	0.016
	08:34 AM	0.200	7.35	0.005	0.300	-	0.012	0.300	6.41	0.013
	09:50 AM	0.200	-	0.007	0.375	3.91	0.018	0.175	-	0.004
	10:12 AM	0.225	50.00	0.005	0.450	5.21	0.016	0.325	7.14	0.011
Max		0.400	50.00	0.01	0.550	11.40	0.029	0.425	7.35	0.016
Standard		15.000	50.00	-	5.350	11.40	-	4.338	7.35	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Sample Number 22121126-36
Sample Description Air Quality
Location สถานีที่ 12 บริเวณอาคารฟักดาชัยเนโทรสกาย ประชาชน (GPS 47P 0665929, 1528619)
Sampled Date Oct 22-23, 2022
Sampled by Teeravut Sukdee

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Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 22, 2022	01:05 PM	0.700	3.79	0.027	0.175	25.00	0.007	0.225	5.70	0.005
	03:10 PM	0.750	5.10	0.05	0.275	1.40	0.012	0.325	3.52	0.015
	04:25 PM	0.125	35.70	0	0.325	3.05	0.017	0.225	-	0.007
	04:55 PM	0.750	6.25	0.031	0.375	9.62	0.019	0.275	-	0.014
	06:03 PM	0.350	35.00	0.01	0.200	3.33	0.009	0.225	3.25	0.01
	06:30 PM	0.300	27.80	0.006	0.150	6.25	0.005	0.200	-	0.004
	07:24 PM	0.575	6.25	0.018	0.325	11.40	0.015	0.250	-	0.011
	11:02 PM	0.775	4.72	0.034	0.250	8.93	0.009	0.375	-	0.002

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Sample Number 22121126-36
Sample Description Air Quality
Location สถานีที่ 12 บริเวณอาคารฟักดาชัยเนโทรสกาย ประชาชน (GPS 47P 0665929, 1528619)
Sampled Date Oct 22-23, 2022
Sampled by Teeravut Sukdee

Page 6 of 6

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1822	1822	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 23, 2022	05:55 AM	0.600	14.70	0.024	0.700	-	0.002	0.275	-	0.001
	06:34 AM	0.650	4.81	0.042	0.275	7.14	0.006	0.300	-	0.001
	08:21 AM	0.475	31.30	0.018	0.325	7.81	0.013	0.450	4.31	0.016
	09:07 AM	0.950	7.35	0.055	0.325	8.93	0.013	0.425	6.94	0.016
	10:45 AM	0.700	3.79	0.027	0.350	3.16	0.017	0.375	7.14	0.014
	11:03 AM	0.600	4.03	0.024	0.350	12.50	0.009	0.225	-	0.001
	Max	0.950	35.700	0.055	0.700	25.000	0.019	0.450	7.140	0.016
Standard		11.425	35.70	-	8.750	25.00	-	4.285	7.14	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 1 of 6

Sample Number 22121126-37
Sample Description Air Quality
Location สถานี 13 บริเวณขบวนสีหิธร (GPS 47P 0659723, 1585094)
Sampled Date Oct 20-21, 2022
Sampled by Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 20, 2022	01:32 PM	0.475	6.70	0.029	0.350	5.81	0.027	0.150	15.60	0.001
	03:12 PM	0.750	7.35	0.031	0.425	-	0.004	0.425	11.40	0.013
	06:07 PM	0.475	5.43	0.021	0.250	3.25	0.002	0.525	4.46	0.014
	09:10 PM	0.375	4.10	0.02	0.225	-	0.001	0.200	-	0.005

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 2 of 6

Sample Number 22121126-37
Sample Description Air Quality
Location สถานี 13 บริเวณขบวนสีหิธร (GPS 47P 0659723, 1585094)
Sampled Date Oct 20-21, 2022
Sampled by Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 21, 2022	05:40 AM	0.525	5.95	0.021	0.975	3.79	0.049	0.225	-	0.002
	07:23 AM	0.350	22.70	0.017	0.600	6.10	0.03	0.175	-	0.002
	08:40 AM	0.900	3.62	0.05	0.600	3.16	0.035	0.225	22.70	0.005
	10:17 AM	1.680	5.21	0.076	0.200	-	0.002	0.275	9.26	0.008
	10:25 AM	0.625	5.95	0.026	0.550	6.76	0.022	0.225	13.90	0.005
	10:32 AM	0.350	20.80	0.014	0.775	5.68	0.052	0.275	6.25	0.007
Max		1.680	22.70	0.076	0.975	6.76	0.052	0.525	22.70	0.014
Standard		8.175	22.70	-	4.190	6.76	-	8.175	22.70	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 3 of 6

Sample Number : 22121126-38
Sample Description : Air Quality
Location : สถานี 13 บริเวณขบวนสีหิธร (GPS 47P 0659723, 1585094)
Sampled Date : Oct 21-22, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 21, 2022	02:05 PM	0.275	4.10	0.008	0.250	8.93	0.009	0.350	22.70	0.017
	02:52 PM	0.175	17.90	0.004	0.700	1.30	0.002	0.900	3.62	0.05
	05:26 PM	0.250	11.40	0.007	0.275	7.14	0.006	1.680	5.21	0.076
	07:02 PM	0.225	10.90	0.006	0.325	7.81	0.013	0.625	5.95	0.026
	10:10 PM	0.675	3.20	0.003	0.325	8.93	0.013	0.350	2.30	0.014

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Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

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Sample Number : 22121126-38
Sample Description : Air Quality
Location : สถานี 13 บริเวณขบวนสีหิธร (GPS 47P 0659723, 1585094)
Sampled Date : Oct 21-22, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 22, 2022	06:03 AM	0.300	8.06	0.012	0.350	3.16	0.017	0.475	11.90	0.014
	07:10 AM	0.350	6.41	0.011	0.350	2.50	0.009	0.800	5.81	0.04
	08:12 AM	0.300	8.62	0.011	0.175	6.94	0.006	0.250	8.33	0.01
	09:25 AM	0.375	8.33	0.012	0.225	19.20	0.003	0.375	4.46	0.018
	10:03 AM	0.300	19.20	0.012	0.300	6.25	0.008	0.350	6.58	0.024
	10:10 AM	0.300	7.81	0.014	0.225	5.81	0.009	0.425	2.84	0.032
	10:45 AM	0.200	25.00	0.007	0.175	-	0.002	0.425	3.57	0.027
Max		0.675	25.00	0.014	0.700	19.20	0.017	1.680	22.70	0.076
Standard		8.750	25.00	-	7.300	19.20	-	8.175	22.70	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Report Number : 2451257-1

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Project Name :
Project Location :

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Sample Number 22121126-39
Sample Description Air Quality
Location สถานี 13 บริเวณขบวนสีหิธร (GPS 47P 0659723, 1585094)
Sampled Date Oct 22-23, 2022
Sampled by Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 22, 2022	01:05 PM	0.200	5.70	0.008	0.675	8.93	0.034	0.300	10.40	0.011
	03:17 PM	0.350	4.63	0.01	0.550	3.21	0.032	0.250	13.20	0.008
	06:03 PM	0.225	10.40	0.006	0.575	4.63	0.039	0.350	16.70	0.011
	07:00 PM	0.450	4.63	0.016	0.575	5.68	0.025	0.350	5.10	0.015
	10:24 PM	0.225	-	0.005	0.525	3.68	0.03	0.275	10.90	0.007

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Chatuchak,
Bangkok Thailand 10900

Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 6 of 6

Sample Number 22121126-39
Sample Description Air Quality
Location สถานี 13 บริเวณขบวนสีหิธร (GPS 47P 0659723, 1585094)
Sampled Date Oct 22-23, 2022
Sampled by Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibroek	Vibroek	-
Model	V901	V901	-
S/N	1618	1618	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 23, 2022	05:55 AM	0.250	10.40	0.007	0.700	3.16	0.047	0.350	7.35	0.017
	06:45 AM	0.175	25.00	0.006	0.475	3.33	0.028	0.325	14.70	0.012
	08:02 AM	0.300	7.14	0.006	0.225	2.70	0.006	0.225	19.20	0.006
	09:10 AM	0.650	10.00	0.015	0.575	25.00	0.023	0.275	1.30	0.007
	10:32 AM	0.350	3.85	0.01	0.475	3.85	0.031	0.275	27.80	0.007
	10:57 AM	0.325	4.46	0.01	0.450	7.14	0.013	0.275	50.00	0.004
Max		0.650	25.00	0.016	0.700	25.00	0.047	0.350	50.00	0.017
Standard		8.750	25.00	-	8.750	25.00	-	15.000	50.00	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 1 of 6

Sample Number : 22121126-40
Sample Description : Air Quality
Location : สถานี 14 บริเวณถนนจันทพล (GPS 47P 0655268, 1524394)
Sampled Date : Oct 20-21, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 20, 2022	11:05 AM	0.275	10.00	0.005	0.475	3.85	0.031	0.350	2.94	0.015
	01:14 PM	0.325	6.76	0.007	0.450	7.14	0.013	0.750	4.46	0.029
	03:25 PM	0.325	4.63	0.01	0.425	31.30	0.015	0.700	3.38	0.041
	06:10 PM	0.250	11.90	0.004	0.500	3.62	0.025	0.350	3.70	0.007
	09:03 PM	0.850	6.70	0.008	0.475	3.42	0.033	0.275	2.81	0.01

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 2 of 6

Sample Number : 22121126-40
Sample Description : Air Quality
Location : สถานี 14 บริเวณถนนจันทพล (GPS 47P 0655268, 1524394)
Sampled Date : Oct 20-21, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 21, 2022	05:45 AM	0.250	7.81	0.008	0.500	6.76	0.023	0.700	2.87	0.04
	06:03 AM	0.175	-	0.001	0.450	-	0.027	0.875	4.46	0.06
	08:42 AM	0.150	-	0.002	0.375	6.41	0.018	0.400	3.85	0.027
	08:55 AM	0.250	6.41	0.007	0.425	5.81	0.018	0.300	35.70	0.013
	09:45 AM	0.125	-	0	0.400	4.81	0.017	0.425	4.46	0.019
Max		0.850	11.90	0.01	0.500	31.30	0.033	0.875	35.70	0.06
Standard		5.475	11.90	-	10.325	31.30	-	11.425	35.70	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 3 of 6

Sample Number : 22121126-41
Sample Description : Air Quality
Location : สถานี 14 บริเวณถนนจันทพล (GPS 47P 0655268, 1524394)
Sampled Date : Oct 21-22, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 21, 2022	12:23 PM	0.225	2.75	0.009	0.550	17.90	0.023	0.600	8.33	0.018
	06:10 PM	0.250	11.90	0.012	0.475	7.35	0.019	1.100	6.41	0.037
	09:04 PM	0.400	7.58	0.015	0.425	4.63	0.019	0.500	7.14	0.017

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 4 of 6

Sample Number : 22121126-41
Sample Description : Air Quality
Location : สถานี 14 บริเวณถนนจันทพล (GPS 47P 0655268, 1524394)
Sampled Date : Oct 21-22, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 22, 2022	06:25 AM	0.325	-	0.002	0.500	5.00	0.026	0.200	-	0.003
	08:32 AM	0.275	7.58	0.011	0.550	5.00	0.029	0.250	7.14	0.006
	09:12 AM	0.200	12.50	0.008	0.425	3.91	0.024	0.425	4.10	0.012
	09:54 AM	0.250	-	0.002	0.375	19.20	0.026	0.225	5.20	0.005
	09:56 AM	0.225	5.10	0.007	0.450	4.03	0.039	0.150	-	0.001
Max		0.400	12.50	0.015	0.550	19.20	0.039	1.100	8.33	0.037
Standard		5.625	12.50	-	7.300	19.20	-	4.583	8.33	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 5 of 6

Sample Number : 22121126-42
Sample Description : Air Quality
Location : สถานีที่ 14 บริเวณถนนจันทพล (GPS 47P 0655268, 1524394)
Sampled Date : Oct 22-23, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 22, 2022	01:05 PM	0.300	27.80	0.013	0.300	7.35	0.011	0.475	3.42	0.033
	03:06 PM	0.625	3.09	0.041	0.325	7.14	0.009	0.500	6.76	0.023
	07:24 PM	0.575	6.25	0.03	0.400	5.81	0.01	0.450	-	0.027
	07:30 PM	0.150	-	0.001	0.225	27.80	0.006	0.375	6.41	0.018

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Lot ID : 22121126
Date Received : Oct 24, 2022
Date Reported : Dec 22, 2022
Report Number : 2451257-1

P/O :
Project Name :
Project Location :

Page 6 of 6

Sample Number : 22121126-42
Sample Description : Air Quality
Location : สถานีที่ 14 บริเวณถนนจันทพล (GPS 47P 0655268, 1524394)
Sampled Date : Oct 22-23, 2022
Sampled by : Teeravut Sukdee

Equipment Data			
Description	Data Logger	Geophone	Microphone
Brand	Vibrocock	Vibrocock	-
Model	V901	V901	-
S/N	1617	1617	-
Sensitivity	-	0.254 mm/s	-

Date	Time	Transverse			Vertical			Longitudinal		
		PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)	PPV (mm/s)	Frequency (Hz)	PD (mm)
Oct 23, 2022	05:07 AM	0.525	5.56	0.027	0.500	3.68	0.012	0.425	5.81	0.018
	06:10 AM	0.400	4.81	0.011	0.350	5.32	0.009	0.400	4.81	0.017
	08:32 AM	0.450	3.85	0.025	0.300	8.06	0.009	0.425	6.41	0.018
	09:01 AM	0.475	4.03	0.023	0.150	20.80	0.003	0.450	7.81	0.014
	09:33 AM	0.325	4.63	0.019	0.225	9.26	0.007	0.400	2.69	0.026
	09:45 AM	0.375	3.13	0.024	0.250	11.40	0.004	0.900	15.60	0.019
	09:55 AM	0.475	3.05	0.036	-	-	-	0.400	4.10	0.02
Max		0.625	27.80	0.041	0.500	27.80	0.012	0.900	15.60	0.033
Standard		9.450	27.80	-	9.450	27.80	-	6.400	15.60	-

Remark : - PPV = Peak Particle Velocity - PD = Peak Displacement
Standard (s) : Notification of Environmental Board No.37 , B.E. 2553 (2010).

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Thailand 10900
P/O : สัญญาเลขที่รฟท.จ.650089
Project Name :
Project Location :



TESTING
No.0009
Lot ID: 22122277
Date Received : Oct 27, 2022
Date Reported : Jan 19, 2023
Report Number : 2453655-1 Rev. No.1

Page 1 of 16

Sample Number	22122277-1							
Sampled Date	Oct 27, 2022 9:30 AM							
Sample Description	Surface Water							
Location	สถานีที่ 1 บริเวณคลองบางซื่อ							
Date Analysis Commenced	Oct 27, 2022							
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
Total Coliform	MPN/100mL	-	-	330000.0	≤20000	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing								
BOD (5 days at 20 degree C) *	mg/L	-	2.0	4	≤2	≤4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)	Bangkok
Depth *	m	-	-	1.50	No Standard	No Standard	Water Level Meter	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	2.0	≥4	≥2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C	-	-	-	7.6	5.0-9.0	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
Temperature *	Degree C	-	-	29.1	(c)	(c)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	13	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

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Analysis / Test Report

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Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok
Thailand 10900
P/O : สัญญาเลขที่รฟท.จ.650089
Project Name :
Project Location :



TESTING
No.0009
Lot ID: 22122277
Date Received : Oct 27, 2022
Date Reported : Jan 19, 2023
Report Number : 2453655-1 Rev. No.1

Page 2 of 16

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

Note : This Analysis test report is reassessed to supersede report No.2453655-1, Date Reported : Nov 03, 2022 due to revise guideline/specification

Sampling By : Chulladet Warin ทะเบียนเลขที่ ร-204-จ-6120

Remark :

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

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TESTING
No.0009
Lot ID: 22122277
Date Received : Oct 27, 2022
Date Reported : Jan 19, 2023
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Sample Number	22122277-2							
Sampled Date	Oct 27, 2022 9:50 AM							
Sample Description	Surface Water							
Location	สถานีที่ 2 บริเวณคลองเปรมประชากร (บางเขน)							
Date Analysis Commenced	Oct 27, 2022							
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
Total Coliform	MPN/100mL	-	-	790000.0	≤20000	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing								
BOD (5 days at 20 degree C) *	mg/L	-	2.0	3	≤2	≤4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)	Bangkok
Depth *	m	-	-	1.60	No Standard	No Standard	Water Level Meter	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	2.1	≥4	≥2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C	-	-	-	7.6	5.0-9.0	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
Temperature *	Degree C	-	-	29.0	(c)	(c)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	82	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

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

Note : This Analysis test report is reissued to supersede report No.2453655-1, Date Reported : Nov 03, 2022 due to revise guideline/specification

Sampling By : Chulladet Warin ทะเบียนเลขที่ 7-204-จ-6120

Remark :

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

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Date Received : Oct 27, 2022
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Sample Number	22122277-3							
Sampled Date	Oct 27, 2022 11:35 AM							
Sample Description	Surface Water							
Location	สถานีที่ 3 บริเวณคลองเปรมประชากร (วังสิด)							
Date Analysis Commenced	Oct 27, 2022							
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
Total Coliform	MPN/100mL	-	-	3300.0	≤20000	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing								
BOD (5 days at 20 degree C) *	mg/L	-	2.0	3	≤2	≤4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)	Bangkok
Depth *	m	-	-	2.90	No Standard	No Standard	Water Level Meter	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	3.4	≥4	≥2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C	-	-	-	7.5	5.0-9.0	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
Temperature *	Degree C	-	-	30.2	(c)	(c)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	12	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

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

Note : This Analysis test report is reassessed to supersede report No.2453655-1, Date Reported : Nov 03, 2022 due to revise guideline/specification

Sampling By : Chulladet Warin ทะเบียนเลขที่ ร-204-จ-6120

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Sample Number	22122277-4							
Sampled Date	Oct 27, 2022 10:10 AM							
Sample Description	Surface Water							
Location	สถานีที่ 4 บริเวณคลองบางเขน							
Date Analysis Commenced	Oct 27, 2022							
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
Total Coliform	MPN/100mL	-	-	940000.0	≤20000	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing								
BOD (5 days at 20 degree C) *	mg/L	-	2.0	3	≤2	≤4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)	Bangkok
Depth *	m	-	-	1.45	No Standard	No Standard	Water Level Meter	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	1.9	≥4	≥2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C	-	-	-	7.5	5.0-9.0	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
Temperature *	Degree C	-	-	29.2	(c)	(c)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	12	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

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

Note : This Analysis test report is reissued to supersede report No.2453655-1, Date Reported : Nov 03, 2022 due to revise guideline/specification

Sampling By : Chulladet Warin ทะเบียนเลขที่ ร-204-จ-6120

Remark :

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Sample Number	22122277-5							
Sampled Date	Oct 27, 2022 10:25 AM							
Sample Description	Surface Water							
Location	สถานีที่ 5 บริเวณคลองวัดหลักสี่							
Date Analysis Commenced	Oct 27, 2022							
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
Total Coliform	MPN/100mL	-	-	700000.0	≤20000	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing								
BOD (5 days at 20 degree C) *	mg/L	-	2.0	4	≤2	≤4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)	Bangkok
Depth *	m	-	-	1.20	No Standard	No Standard	Water Level Meter	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	1.5	≥4	≥2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.4	5.0-9.0	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
Temperature *	Degree C	-	-	28.6	(c)	(c)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	37	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

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(b) Non Objectionable
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Sampling By : Chulladet Warin ทะเบียนเลขที่ ร-204-จ-6120

Remark :

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Sample Number	22122277-6							
Sampled Date	Oct 27, 2022 10:55 AM							
Sample Description	Surface Water							
Location	สถานีที่ 6 บริเวณคลองวัดรังสิต							
Date Analysis Commenced	Oct 27, 2022							
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
Total Coliform	MPN/100mL	-	-	2400000.0	≤20000	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing								
BOD (5 days at 20 degree C) *	mg/L	-	2.0	4	≤2	≤4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)	Bangkok
Depth *	m	-	-	1.70	No Standard	No Standard	Water Level Meter	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	1.3	≥4	≥2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C	-	-	-	7.5	5.0-9.0	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
Temperature *	Degree C	-	-	28.7	(c)	(c)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	21	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

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Report Number : 2453655-1 Rev. No.1

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

Note : This Analysis test report is reissued to supersede report No.2453655-1, Date Reported : Nov 03, 2022 due to revise guideline/specification

Sampling By : Chulladet Warin ทะเบียนเลขที่ ร-204-จ-6120

Remark :

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

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Tuanjai Thangklang
Manager

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok
Thailand 10900
P/O : สัญญาเลขที่รฟท.จ.650089
Project Name :
Project Location :



TESTING
No.0009
Lot ID: 22122277
Date Received : Oct 27, 2022
Date Reported : Jan 19, 2023
Report Number : 2453655-1 Rev. No.1

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Sample Number	22122277-7							
Sampled Date	Oct 27, 2022 11:15 AM							
Sample Description	Surface Water							
Location	สถานีที่ 7 บริเวณคลองรังสิตประยูรศักดิ์							
Date Analysis Commenced	Oct 27, 2022							
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
Total Coliform	MPN/100mL	-	-	130000.0	≤20000	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing								
BOD (5 days at 20 degree C) *	mg/L	-	2.0	4	≤2	≤4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)	Bangkok
Depth *	m	-	-	5.00	No Standard	No Standard	Water Level Meter	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	3.9	≥4	≥2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C	-	-	-	7.5	5.0-9.0	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
Temperature *	Degree C	-	-	29.8	(c)	(c)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	26	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok
Thailand 10900
P/O : สัญญาเลขที่รฟท.จ.650089
Project Name :
Project Location :



TESTING
No.0009
Lot ID: 22122277
Date Received : Oct 27, 2022
Date Reported : Jan 19, 2023
Report Number : 2453655-1 Rev. No.1

Page 14 of 16

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Sampling By : Chulladet Warin ทะเบียนเลขที่ ร-204-จ-6120

Remark :

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
Bangsue Grand Station, 10, Kamphaeng Phet Road, Chatuchak, Bangkok
Thailand 10900
P/O : สัญญาเลขที่รฟท.จ.650089
Project Name :
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TESTING
No.0009
Lot ID: 22122277
Date Received : Oct 27, 2022
Date Reported : Jan 19, 2023
Report Number : 2453655-1 Rev. No.1

Page 15 of 16

Sample Number	22122277-8							
Sampled Date	Oct 27, 2022 8:55 AM							
Sample Description	Surface Water							
Location	สถานีที่ 8 บริเวณคลองบางกอกน้อย							
Date Analysis Commenced	Oct 27, 2022							
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
Total Coliform	MPN/100mL	-	-	33000.0	≤20000	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing								
BOD (5 days at 20 degree C) *	mg/L	-	2.0	<2	≤2	≤4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)	Bangkok
Depth *	m	-	-	3.50	No Standard	No Standard	Water Level Meter	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	3.5	≥4	≥2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C	-	-	-	7.5	5.0-9.0	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
Temperature *	Degree C	-	-	29.3	(c)	(c)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	34	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

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Analysis / Test Report

Client : S.R.T. Electrified Train Company Limited
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P/O : สัญญาเลขที่รฟท.จ.650089
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TESTING
No.0009
Lot ID: 22122277
Date Received : Oct 27, 2022
Date Reported : Jan 19, 2023
Report Number : 2453655-1 Rev. No.1

Page 16 of 16

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Sampling By : Chulladet Warin ทะเบียนเลขที่ ร-204-จ-6120

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เอกสารการสอบเทียบเครื่องมือตรวจวิเคราะห์



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รายการเครื่องมือที่ใช้ในการวิเคราะห์ / ทดสอบ

Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Ambient	Total Suspended Particulate	High Volume	BKK_FS1059	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS1057	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS0361	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS0362	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS0363	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS0363	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS1057	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS0362	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS1057	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS0361	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS0361	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS0362	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS0363	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	BKK_FS0363	-	-	On site Calibration
Ambient	Total Suspended Particulate	Digital Balance	BKK_EN0004	25-Feb-22	25-Feb-23	12
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS1062	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS1063	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0380	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0385	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0388	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0388	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS1063	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0385	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS1063	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0380	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0380	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0385	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0388	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0382	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	Digital Balance	BKK_EN0004	25-Feb-22	25-Feb-23	12
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS1070	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS0782	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS1098	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS0800	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS0776	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS1088	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS1086	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS0779	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS1086	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS1098	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS1098	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS0800	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS1088	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO ₂ Analyzer	BKK_FS1088	1-Jul-22	1-Jan-23	6
Ambient	Carbon Monoxide	CO Analyzer	BKK_FS0786	1-Jul-22	1-Jan-23	6
Ambient	Carbon Monoxide	CO Analyzer	SGK_FS0068	1-Jul-22	1-Jan-23	6
Ambient	Carbon Monoxide	CO Analyzer	BKK_FS0731	1-Jul-22	1-Jan-23	6
Ambient	Carbon Monoxide	CO Analyzer	RYG_FS0451	1-Jul-22	1-Jan-23	6
Ambient	Carbon Monoxide	CO Analyzer	BKK_FS0786	1-Jul-22	1-Jan-23	6
Ambient	Carbon Monoxide	CO Analyzer	RYG_FS0451	1-Jul-22	1-Jan-23	6
Ambient	Carbon Monoxide	CO Analyzer	BKK_FS1065	1-Jul-22	1-Jan-23	6
Ambient	Carbon Monoxide	CO Analyzer	RYG_FS0451	1-Jul-22	1-Jan-23	6
Ambient	Carbon Monoxide	CO Analyzer	SGK_FS0068	1-Jul-22	1-Jan-23	6
Ambient	Carbon Monoxide	CO Analyzer	SGK_FS0068	1-Jul-22	1-Jan-23	6
Ambient	Carbon Monoxide	CO Analyzer	BKK_FS0731	1-Jul-22	1-Jan-23	6



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รายการเครื่องมือที่ใช้ในการวิเคราะห์ / ทดสอบ

Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Ambient	Carbon Monoxide	CO Analyzer	BKK_FS0786	1-Jul-22	1-Jan-23	6
Ambient	Carbon Monoxide	CO Analyzer	BKK_FS0786	1-Jul-22	1-Jan-23	6
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	RYG_FS0435	26-Jan-22	27-Jul-23	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0919	30-Aug-21	28-Feb-23	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0167	11-May-21	9-Nov-22	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0910	6-May-21	4-Nov-22	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0975	26-Jan-22	27-Jul-23	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0910	6-May-21	4-Nov-22	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0163	17-Mar-22	15-Sep-23	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0167	11-May-21	9-Nov-22	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0918	30-Aug-21	28-Feb-23	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0919	30-Aug-21	28-Feb-23	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0910	6-May-21	4-Nov-22	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0918	30-Aug-21	28-Feb-23	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0919	30-Aug-21	28-Feb-23	18
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	BKK_FS0165	3-May-22	1-Nov-23	18
Noise	Leq 24 hrs	Sound Calibrator	BKK_FS0632	14-Jan-22	14-Jan-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0877	25-Oct-22	25-Oct-23	12
Noise	Leq 24 hrs	Sound Calibrator	BKK_FS0632	14-Jan-22	14-Jan-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0033	25-Oct-21	25-Oct-22	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0880	25-Oct-21	25-Oct-22	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0929	28-Oct-21	28-Oct-22	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0032	15-Aug-22	15-Aug-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0032	15-Aug-22	15-Aug-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0111	14-Dec-21	14-Dec-22	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0031	12-Jan-22	12-Jan-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0033	25-Oct-21	25-Oct-22	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0029	9-Jun-22	9-Jun-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0108	12-Jan-22	12-Jan-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0032	15-Aug-22	15-Aug-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0031	12-Jan-22	12-Jan-23	12
Noise	Leq 24 hrs	Sound Calibrator	BKK_FS0632	14-Jan-22	14-Jan-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0022	9-Jun-22	9-Jun-23	12
Ambient	Vibration	VIBRATION METER	BKK_FS0858	21-Sep-21	22-Mar-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0856	25-May-22	25-Nov-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0855	16-May-22	16-Nov-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0858	21-Sep-21	22-Mar-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0857	7-Jul-21	5-Jan-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0858	21-Sep-21	22-Mar-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0858	21-Sep-21	22-Mar-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0856	25-May-22	25-Nov-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0855	16-May-22	16-Nov-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0857	7-Jul-21	5-Jan-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0857	7-Jul-21	5-Jan-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0856	25-May-22	25-Nov-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0855	16-May-22	16-Nov-23	18
Ambient	Vibration	VIBRATION METER	BKK_FS0855	16-May-22	16-Nov-23	18
Water Lab	pH at 25 °C	pH meter	BKK_EN0072	12-Sep-22	12-Mar-24	18
Water Lab	Dissolved Oxygen	Burette	BKK_EN0171	30-Aug-22	1-Mar-24	18
Water Lab	Dissolved Oxygen	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Water Lab	Oil & Grease	Electronic Top-Loading Balance	BKK_EN0002	25-Feb-22	25-Feb-23	12
Water Lab	Oil & Grease	Water Bath	BKK_EN0148	31-Jan-22	1-Aug-23	18
Water Lab	Total Dissolved Solids 103-105°C	Electronic Top-Loading Balance	BKK_EN0002	25-Feb-22	25-Feb-23	12
Water Lab	Total Dissolved Solids 103-105°C	Oven	BKK_EN0009	2-Sep-21	3-Mar-23	18
Water Lab	BOD	DO Meter	BKK_EN0017	24-May-22	24-Nov-23	18
Water Lab	BOD	Incubator	BKK_EN0005	4-Oct-21	4-Apr-23	18



right solutions.
right partner.

รายการเครื่องมือที่ใช้ในการวิเคราะห์ / ทดสอบ

Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Water Lab	Temperature	Digital Thermometer Wite Sensor	BKK_LG0059	12-Sep-22	12-Sep-23	12
Water Lab	Total Coliform	Autoclave	BKK_ML0041	20-May-22	20-Nov-23	18
Water Lab	Total Coliform	Incubator	BKK_ML0010	21-Jan-22	22-Jul-23	18
Water Lab	Total Coliform	Hot Air Oven	BKK_ML0013	7-Jun-21	6-Dec-22	18



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg): 758

Calibrate Location: สถานีที่ 1 บริษัท ขนส่ง จำกัด Temperature (°C): 30

Calibrate Date: 4-Nov-22 High Volume ID: BKK_FS1059

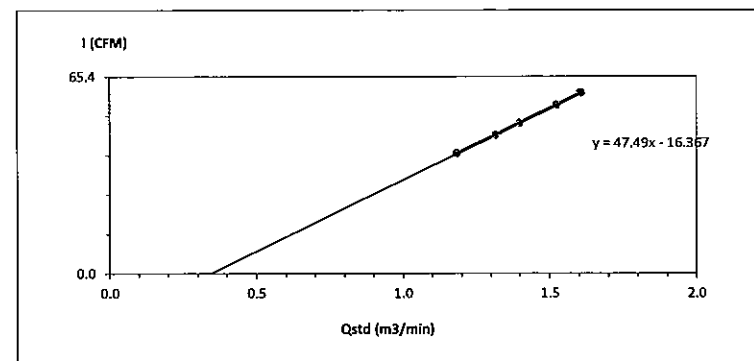
Calibration Sheet No.: C-041122-BKK_FS1059 High Volume Model: TE-5009X

Calibrator ID: BKK_FS0624 High Volume S/N: 5693

Calibrator Model: TE-5028A Calibrator Slope: 1.64942

Calibrator S/N: 2584 Calibrator Intercept: -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I: Chart (CFM)	Linear Regression
1	3.7	1.1840	40	Slope: 47.4905 Intercept: -16.3675 Correlation Coefficient: 0.9999
2	4.6	1.3169	46	
3	5.2	1.3983	50	
4	6.2	1.5241	56	
5	6.9	1.6063	60	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by:

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location : สถานีที่ 2 บริเวณวัดเขมาภิรตาราม Temperature (°C) : 30

Calibrate Date : 6-Oct-22 High Volume ID : BKK_FS1057

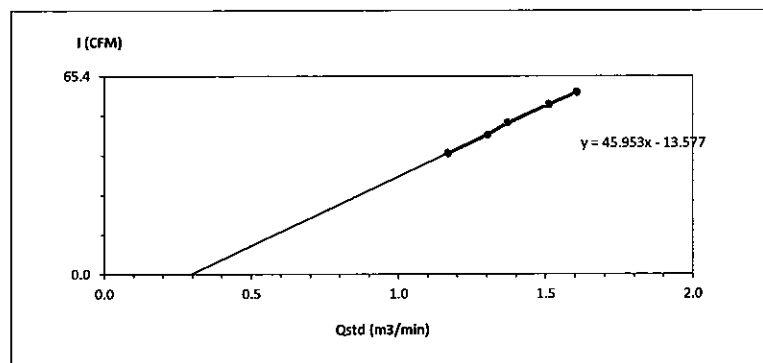
Calibration Sheet No.: C-061022-BKK_FS1057 High Volume Model : TE-5009X

Calibrator ID: BKK_FS0624 High Volume S/N: 5500

Calibrator Model : TE-5028A Calibrator Slope : 1.64942

Calibrator S/N: 2584 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	3.6	1.1683	40	Slope: 45.9531 Intercept: -13.5766 Correlation Coefficient: 0.9991
2	4.5	1.3028	46	
3	5.0	1.3717	50	
4	6.1	1.5120	56	
5	6.9	1.6063	60	



Calibrated by Mr. Teeravut Sukdee
(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by Mr. Noppong Juntarupan
(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location : สถานีที่ 3 บริเวณวัดเขมาภิรตาราม Temperature (°C) : 30

Calibrate Date : 6-Oct-22 High Volume ID : BKK_FS0361

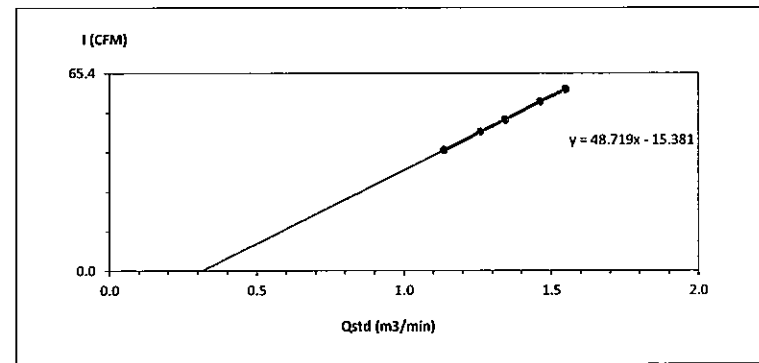
Calibration Sheet No.: C-061022-BKK_FS0361 High Volume Model : G1051

Calibrator ID: BKK_FS0624 High Volume S/N: 1329

Calibrator Model : TE-5028A Calibrator Slope : 1.64942

Calibrator S/N: 2584 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	3.4	1.1362	40	Slope: 48.7193 Intercept: -15.3808 Correlation Coefficient: 0.9999
2	4.2	1.2596	46	
3	4.8	1.3446	50	
4	5.7	1.4626	56	
5	6.4	1.5481	60	



Calibrated by Mr. Teeravut Sukdee
(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by Mr. Noppong Juntarupan
(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location: สถานีที่ 4 บริเวณโรงเรียนอนุบาลวัดหลักซด Temperature (°C) : 30

Calibrate Date: 6-Oct-22 High Volume ID: BKK_FS0362

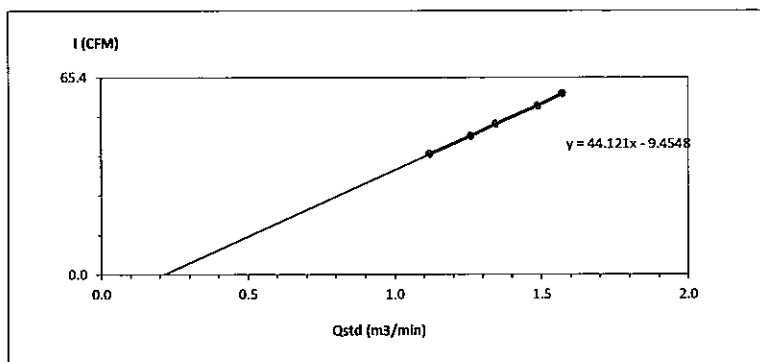
Calibration Sheet No.: C-061022-BKK_FS0362 High Volume Model: G1051

Calibrator ID: BKK_FS0624 High Volume S/N: 1452

Calibrator Model: TE-5028A Calibrator Slope: 1.64942

Calibrator S/N: 2584 Calibrator Intercept: -0.02902

Test No.	Delta H ₂ O (inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	3.3	1.1198	40	Slope: 44.1207 Intercept: -9.4548 Correlation Coefficient: 0.9998
2	4.2	1.2596	46	
3	4.8	1.3446	50	
4	5.9	1.4875	56	
5	6.6	1.5716	60	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location: สถานีที่ 5 บริเวณโรงเรียนบางเขน Temperature (°C) : 30

Calibrate Date: 6-Oct-22 High Volume ID: BKK_FS0363

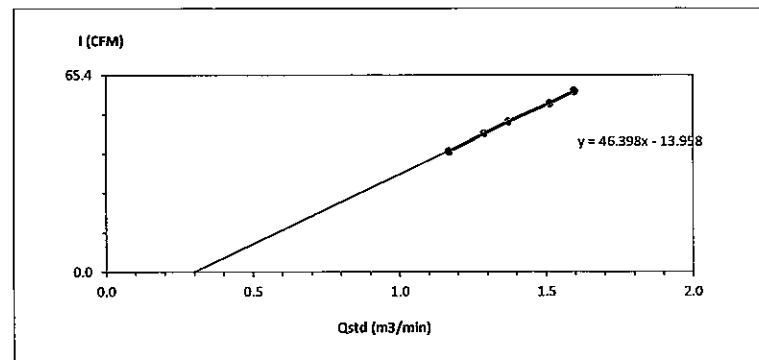
Calibration Sheet No.: C-061022-BKK_FS0363 High Volume Model: TE-5009X

Calibrator ID: BKK_FS0624 High Volume S/N: 4160

Calibrator Model: TE-5028A Calibrator Slope: 1.64942

Calibrator S/N: 2584 Calibrator Intercept: -0.02902

Test No.	Delta H ₂ O (inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	3.6	1.1683	40	Slope: 46.3984 Intercept: -13.9581 Correlation Coefficient: 0.9995
2	4.4	1.2885	46	
3	5.0	1.3717	50	
4	6.1	1.5120	56	
5	6.8	1.5948	60	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg): 758

Calibrate Location: สถานี 6 บริเวณตลาดหลักสี่ Temperature (°C): 32

Calibrate Date: 14-Oct-22 High Volume ID: BKK_FS0363

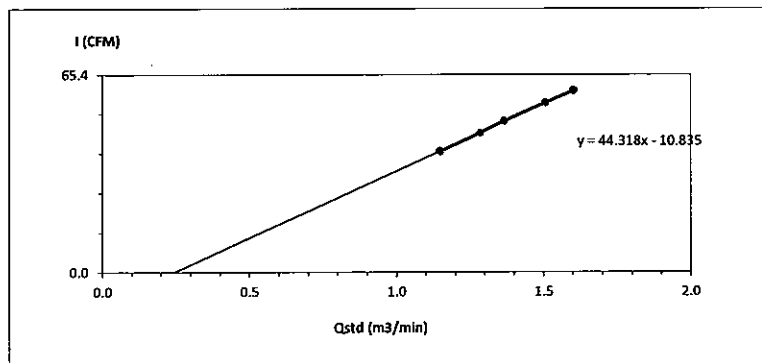
Calibration Sheet No.: C-141022-BKK_FS0363 High Volume Model: TE-5009X

Calibrator ID: BKK_FS0624 High Volume S/N: 4160

Calibrator Model: TE-5028A Calibrator Slope: 1.64942

Calibrator S/N: 2584 Calibrator Intercept: -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I: Chart (CFM)	Linear Regression
1	3.5	1.1487	40	Slope: 44.3179 Intercept: -10.8351 Correlation Coefficient: 0.9998
2	4.4	1.2844	46	
3	5.0	1.3673	50	
4	6.1	1.5072	56	
5	6.9	1.6011	60	



Calibrated by

Mr. Teeravut Sukdee
(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

Mr. Noppong Juntarupan
(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg): 758

Calibrate Location: สถานี 7 บริเวณถนนพหลโยธิน Temperature (°C): 30

Calibrate Date: 20-Oct-22 High Volume ID: BKK_FS1057

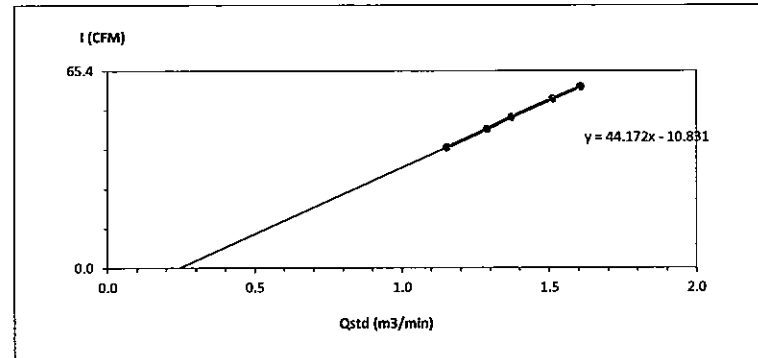
Calibration Sheet No.: C-201022-BKK_FS1057 High Volume Model: TE-5009X

Calibrator ID: BKK_FS0624 High Volume S/N: 5500

Calibrator Model: TE-5028A Calibrator Slope: 1.64942

Calibrator S/N: 2584 Calibrator Intercept: -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I: Chart (CFM)	Linear Regression
1	3.5	1.1524	40	Slope: 44.1723 Intercept: -10.8309 Correlation Coefficient: 0.9998
2	4.4	1.2885	46	
3	5.0	1.3717	50	
4	6.1	1.5120	56	
5	6.9	1.6063	60	



Calibrated by

Mr. Teeravut Sukdee
(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

Mr. Noppong Juntarupan
(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg): 758

Calibrate Location: สถานี 8 บริเวณวัดดอนเมือง Temperature (°C): 32

Calibrate Date: 14-Oct-22 High Volume ID: BKK_FS0362

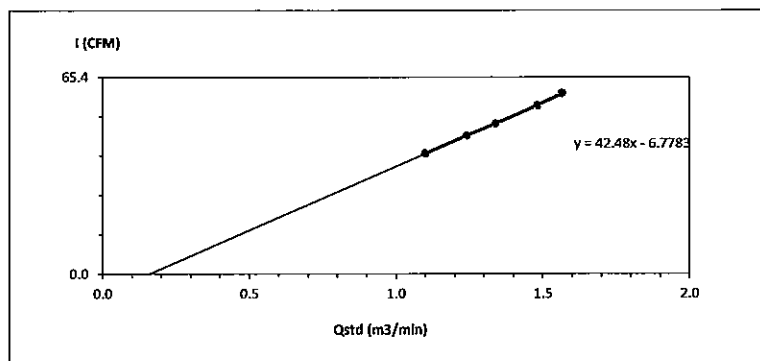
Calibration Sheet No.: C-141022-BKK_FS0362 High Volume Model: G1051

Calibrator ID: BKK_FS0624 High Volume S/N: 1452

Calibrator Model: TE-5028A Calibrator Slope: 1.64942

Calibrator S/N: 2584 Calibrator Intercept: -0.02902

Test No.	Delta H ₂ O (inch)	Q _{std} (m ³ /min)	I: Chart (CFM)	Linear Regression
1	3.2	1.0996	40	Slope: 42.4803 Intercept: -6.7783 Correlation Coefficient: 0.9997
2	4.1	1.2409	46	
3	4.8	1.3402	50	
4	5.9	1.4827	56	
5	6.6	1.5666	60	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg): 758

Calibrate Location: สถานี 9 บริเวณหน้ามัสยิด Temperature (°C): 32

Calibrate Date: 14-Oct-22 High Volume ID: BKK_FS1057

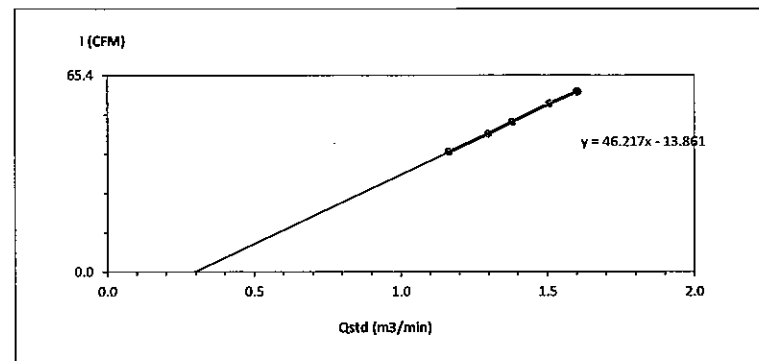
Calibration Sheet No.: C-141022-BKK_FS1057 High Volume Model: TE-S009X

Calibrator ID: BKK_FS0624 High Volume S/N: 5500

Calibrator Model: TE-5028A Calibrator Slope: 1.64942

Calibrator S/N: 2584 Calibrator Intercept: -0.02902

Test No.	Delta H ₂ O (inch)	Q _{std} (m ³ /min)	I: Chart (CFM)	Linear Regression
1	3.6	1.1646	40	Slope: 46.2174 Intercept: -13.8608 Correlation Coefficient: 0.9998
2	4.5	1.2986	46	
3	5.1	1.3806	50	
4	6.1	1.5072	56	
5	6.9	1.6011	60	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location: สถานีที่ 10 บริเวณโรงเรือนรถคนโดยสารรังสิต Temperature (°C) : 32

Calibrate Date: 14-Oct-22 High Volume ID : BKK_FS0361

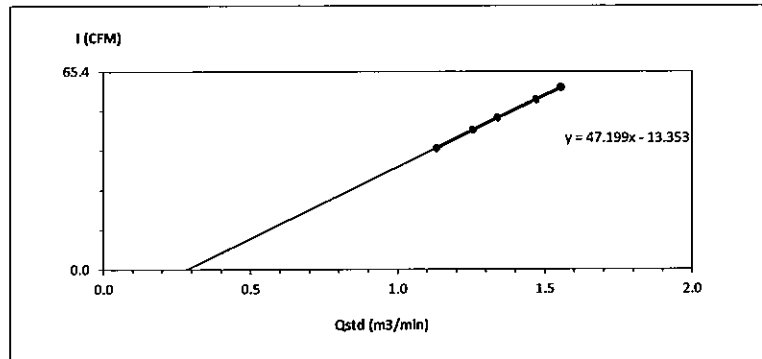
Calibration Sheet No.: C-141022-BKK_FS0361 High Volume Model : G1051

Calibrator ID: BKK_FS0624 High Volume S/N : 1329

Calibrator Model: TE-5028A Calibrator Slope : 1.64942

Calibrator S/N : 2584 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	3.4	1.1326	40	Slope : 47.1993 Intercept : -13.3526 Correlation Coefficient : 0.9999
2	4.2	1.2555	46	
3	4.8	1.3402	50	
4	5.8	1.4704	56	
5	6.5	1.5549	60	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location: สถานีที่ 12 บริเวณอาคารพักอาศัย เมโทรสกาย ประชาชื่น Temperature (°C) : 30

Calibrate Date: 20-Oct-22 High Volume ID : BKK_FS0361

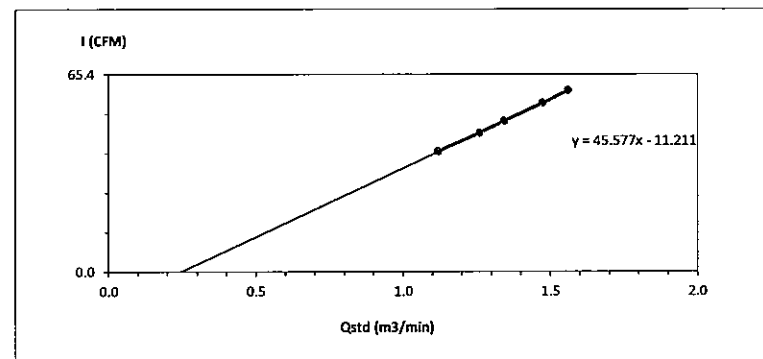
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Calibrator ID: BKK_FS0624 High Volume S/N : 1329

Calibrator Model: TE-5028A Calibrator Slope : 1.64942

Calibrator S/N : 2584 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	3.3	1.1198	40	Slope : 45.5774 Intercept : -11.2109 Correlation Coefficient : 0.9998
2	4.2	1.2596	46	
3	4.8	1.3446	50	
4	5.8	1.4751	56	
5	6.5	1.5599	60	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg): 758

Calibrate Location: สถานี 13 บริเวณชานชาลา Temperature (°C): 30

Calibrate Date: 20-Oct-22 High Volume ID: BKK_FS0362

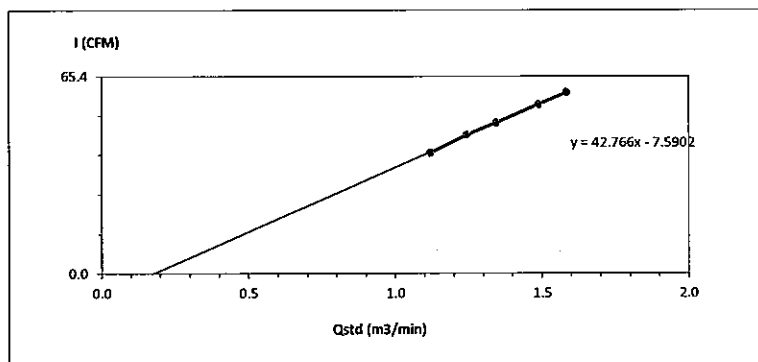
Calibration Sheet No.: C-201022-BKK_FS0362 High Volume Model: G1051

Calibrator ID: BKK_FS0624 High Volume S/N: 1452

Calibrator Model: TE-5028A Calibrator Slope: 1.64942

Calibrator S/N: 2584 Calibrator Intercept: -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I: Chart (CFM)	Linear Regression
1	3.3	1.1198	40	Slope: 42.7657 Intercept: -7.5902 Correlation Coefficient: 0.9995
2	4.1	1.2448	46	
3	4.8	1.3446	50	
4	5.9	1.4875	56	
5	6.7	1.5833	60	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg): 758

Calibrate Location: สถานี 14 บริเวณถนนพหลโยธิน Temperature (°C): 30

Calibrate Date: 20-Oct-22 High Volume ID: BKK_FS0363

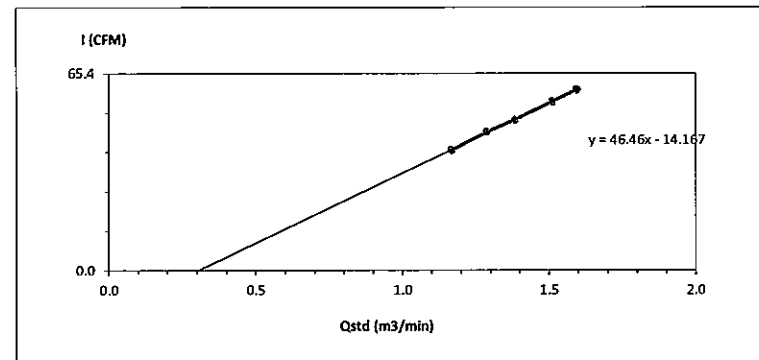
Calibration Sheet No.: C-201022-BKK_FS0363 High Volume Model: TE-5009X

Calibrator ID: BKK_FS0624 High Volume S/N: 4160

Calibrator Model: TE-5028A Calibrator Slope: 1.64942

Calibrator S/N: 2584 Calibrator Intercept: -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I: Chart (CFM)	Linear Regression
1	3.6	1.1683	40	Slope: 46.4596 Intercept: -14.1672 Correlation Coefficient: 0.9997
2	4.4	1.2885	46	
3	5.1	1.3850	50	
4	6.1	1.5120	56	
5	6.8	1.5948	60	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site: S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg): 758

Calibrate Location: สถานี 11 บริเวณหน้าห้องพัสดุ Temperature (°C): 32

Calibrate Date: 10-Nov-22 High Volume ID: BKK_FS0363

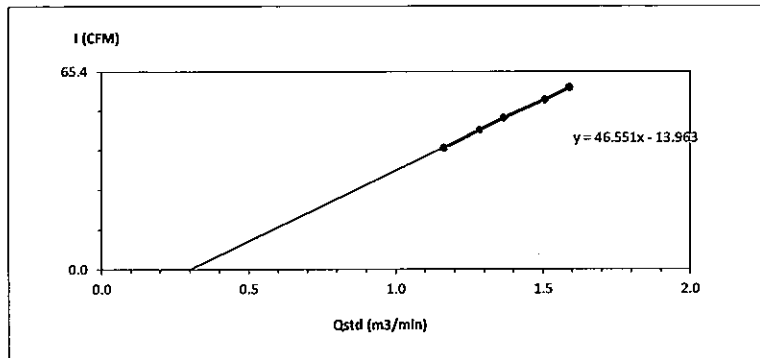
Calibration Sheet No.: C-101122-BKK_FS0363 High Volume Model: TE-5009X

Calibrator ID: BKK_FS0624 High Volume S/N: 4160

Calibrator Model: TE-5028A Calibrator Slope: 1.64942

Calibrator S/N: 2584 Calibrator Intercept: -0.02902

Test No.	Delta H ₂ O (inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	3.6	1.1646	40	Slope: 46.5513 Intercept: -13.9626 Correlation Coefficient: 0.9995
2	4.4	1.2844	46	
3	5.0	1.3673	50	
4	6.1	1.5072	56	
5	6.8	1.5897	60	



Calibrated by: (Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by: (Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



PENTA
CALIBRATION

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66/124 The Connect 33 Village Kanchanaphisek Road
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www.pentalcal.com

Certificate of Calibration

Represent to Certificate of Calibration :PTC/07/22072

Certificate No.: PTC/07/22072 Page: 1 of 3

Equipment: Digital Balance Condition: Normal

Manufacturer: METTLER TOLEDO Serial No: 1123091884

Model: XP105 ID No: BKK_EN0004

Type of Balance: Multi interval



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

Environment Condition: Temperature 21.0 °C ± 0.4 °C
Humidity 62.8 %RH ± 3.7 %RH
Air density 1.20 kg/m³

Calibration Place: ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakarn 40 Phatthanakarn Rd.,
khwaeng Phatthanakarn, Khet Suan Luang, Bangkok 10250.

The Method used: In house method, PTC-WI-07, base on Euramet cg. 18

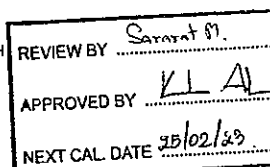
Traceability: This certificate is traceable to the SI Units through Thai Calibration Service Co.,Ltd.
. NSC-ONSC Accreditation No.: Calibration 0189

Date Received: February 25, 2022

Calibration Date: February 25, 2022

Issued Date: March 01, 2022

Calibration By: Mr. Rungroje Metakul



PENTA CALIBRATION CO., LTD.

(Mr. Knangsak Kalasri)
Reviewed by

Approved By: (Mr. Keattisak Kerdto)
Laboratory Manager

This certificate is issued the units of measurement according to the International System of Units (SI). It provides traceability of measurement to international or national standard or other recognised national standard laboratories.

The measurement uncertainty stated is the expanded uncertainty which is obtained from the standard uncertainty multiplied by the coverage factor (k=2) to provide a level of confidence of approximately 95%. It is determined in accordance with the Guide to Expression of Uncertainty in Measurement (GUM). The effect that the results relate only to the items calibrated.

This calibration certificate shall not be reproduced except in full only, without written approval from penta calibration co., ltd

Represent to Certificate of Calibration ,PTC/07/22072

Certificate No.: PTC/07/22072

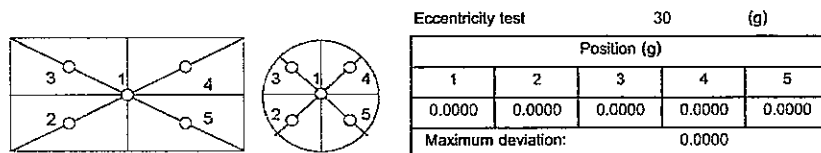
Page: 2 of 3

Measurement Results:

Without Adjustment :

Function Calibration: Non Adjustment

Eccentric Error: Weight to be 1/3 ,1/2 or of Maximum capacity


 Repeatability Test : Weight to be $1/2 \leq L_1 \leq$ Maximum capacity

Determination of the standard deviation of weighing balance., Readability 0.0001 (g)

Nominal test value (g)	Standard Deviation
100	0.00005

Error of indication : from nominal value., Readability 0.0001 (g)

Nominal Value (g)	Conventional Mass (g)	Indication (g)	Correction of Balance (g)	Uncertainty (g)	k
40	40.00005	40.0000	0.0000	0.00016	2.11
50	50.00001	50.0000	0.0000	0.00015	2.13
60	60.00003	60.0000	0.0000	0.00016	2.08
70	70.00003	70.0000	0.0000	0.00017	2.07
80	80.00005	80.0001	-0.0001	0.00019	2.04
90	90.00006	90.0001	0.0000	0.00020	2.03
100	100.00002	99.9999	0.0001	0.00018	2.06

Note: Weight of adjust - (g)

Represent to Certificate of Calibration ,PTC/07/22072

Certificate No.: PTC/07/22072

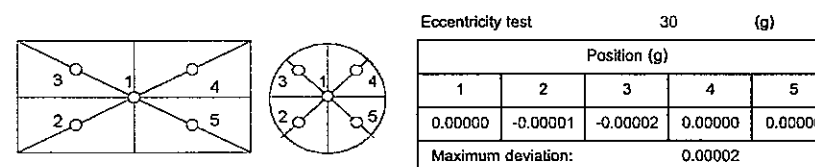
Page: 3 of 3

Measurement Results:

Without Adjustment :

Function Calibration: Non Adjustment

Eccentric Error: Weight to be 1/3 ,1/2 or of Maximum capacity


 Repeatability Test : Weight to be $1/2 \leq L_1 \leq$ Maximum capacity

Determination of the standard deviation of weighing balance., Readability 0.00001 (g)

Nominal test value (g)	Standard Deviation
20	0.000005

Error of indication : from nominal value., Readability 0.00001 (g)

Nominal Value (g)	Conventional Mass (g)	Indication (g)	Correction of Balance (g)	Uncertainty (g)	k
0	0.000000	0.00000	0.00000	0.000016	2.52
0.1	0.100000	0.10000	0.00000	0.000019	2.00
0.5	0.499999	0.50000	0.00000	0.000019	2.00
2	2.000010	1.99999	0.00002	0.000024	2.00
5	5.000005	5.00001	0.00000	0.000027	2.00
10	10.000015	10.00001	0.00000	0.000031	2.00
20	20.000019	20.00001	0.00001	0.000042	2.00
30	30.000034	30.00006	-0.00003	0.000059	2.00

Note: Weight of adjust - (g)

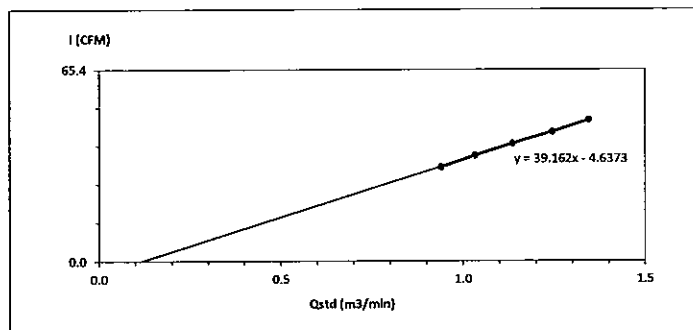
The End of Certificate



High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited
 Calibrate Location : สถานีที่ 1 บริเวณอาคารผู้โดยสารรถไฟ
 Calibrate Date : 24-Nov-22
 Calibration Sheet No.: C-241122-BKK_FS1062
 Calibrator ID: BKK_FS0624
 Calibrator Model: TE-S028A
 Calibrator S/N: 2584
 Barometric Pressure (mm Hg) : 758
 Temperature (°C) : 30
 High Volume ID: BKK_FS1062
 High Volume Model: TE-S009X
 High Volume S/N: 5686
 Calibrator Slope : 1.64942
 Calibrator Intercept: -0.02902

Test No.	Delta H ₂ O (inch)	Q _{std} (m ³ /min)	I: Chart (CFM)	Linear Regression
1	2.3	0.9397	32	Slope : 39.1622 Intercept: -4.6373 Correlation Coefficient: 0.9997
2	2.8	1.0338	36	
3	3.4	1.1362	40	
4	4.1	1.2448	44	
5	4.8	1.3446	48	



Calibrated by Mr. Teeravut Sukdee
 (Mr. Teeravut Sukdee)
 Field Scientist(1)

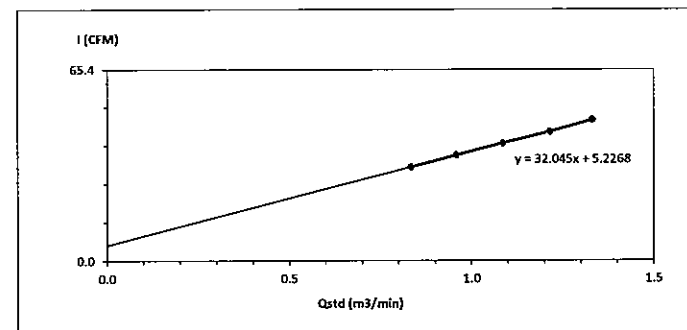
Approved by: Mr. Noppong Juntarupan
 (Mr. Noppong Juntarupan)
 Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited
 Calibrate Location : สถานีที่ 2 บริเวณอาคารรถไฟ ข.11
 Calibrate Date : 6-Oct-22
 Calibration Sheet No.: C-061022-BKK_FS1063
 Calibrator ID: BKK_FS0624
 Calibrator Model: TE-S028A
 Calibrator S/N: 2584
 Barometric Pressure (mm Hg) : 758
 Temperature (°C) : 30
 High Volume ID: BKK_FS1063
 High Volume Model: TE-S009X
 High Volume S/N: 5685
 Calibrator Slope : 1.64942
 Calibrator Intercept: -0.02902

Test No.	Delta H ₂ O (inch)	Q _{std} (m ³ /min)	I: Chart (CFM)	Linear Regression
1	1.8	0.8346	32	Slope : 32.0449 Intercept: 5.2268 Correlation Coefficient: 0.9999
2	2.4	0.9592	36	
3	3.1	1.0862	40	
4	3.9	1.2148	44	
5	4.7	1.3308	48	



Calibrated by Mr. Teeravut Sukdee
 (Mr. Teeravut Sukdee)
 Field Scientist(1)

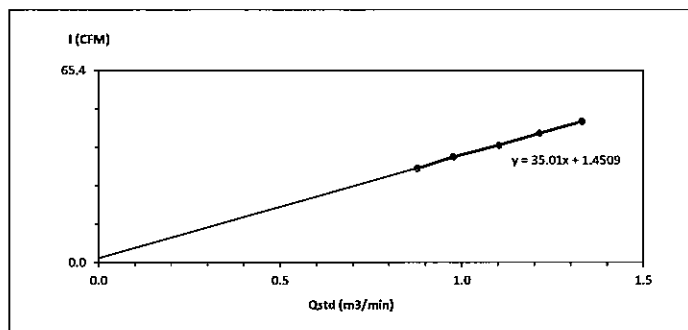
Approved by: Mr. Noppong Juntarupan
 (Mr. Noppong Juntarupan)
 Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited
 Barometric Pressure (mm Hg) : 758
 Calibrate Location : สถานี 3 บริเวณโรงรถเข็นรถโดยสาร
 Temperature (°C) : 30
 Calibrate Date : 6-Oct-22
 High Volume ID : BKK_FS0380
 Calibration Sheet No. : C-061022-BKK_FS0380
 High Volume Model : TE-5009X
 Calibrator ID : BKK_FS0624
 High Volume S/N : 4163
 Calibrator Model : TE-S028A
 Calibrator Slope : 1.64942
 Calibrator S/N : 2584
 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	2.0	0.8782	32	Slope : 35.0105 Intercept : 1.4509 Correlation Coefficient : 0.9996
2	2.5	0.9784	36	
3	3.2	1.1031	40	
4	3.9	1.2148	44	
5	4.7	1.3308	48	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)

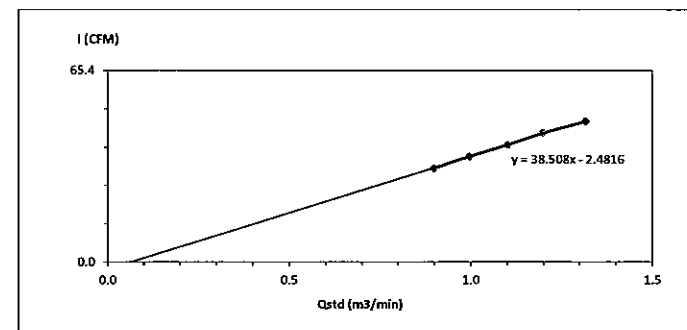
FORM NO.: F 06-074 REVISION NO.: - ISSUE DATE: 14/03/16



High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited
 Barometric Pressure (mm Hg) : 758
 Calibrate Location : สถานี 4 บริเวณโรงรถเข็นรถโดยสาร
 Temperature (°C) : 30
 Calibrate Date : 6-Oct-22
 High Volume ID : BKK_FS0385
 Calibration Sheet No. : C-061022-BKK_FS0385
 High Volume Model : TE-5009X
 Calibrator ID : BKK_FS0624
 High Volume S/N : 4789
 Calibrator Model : TE-S028A
 Calibrator Slope : 1.64942
 Calibrator S/N : 2584
 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	2.1	0.8992	32	Slope : 38.5083 Intercept : -2.4816 Correlation Coefficient : 0.9995
2	2.6	0.9972	36	
3	3.2	1.1031	40	
4	3.8	1.1995	44	
5	4.6	1.3169	48	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)

FORM NO.: F 06-074 REVISION NO.: - ISSUE DATE: 14/03/16



High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location : สถานี 5 บริเวณโรงเรือนทางเดิน Temperature (°C) : 30

Calibrate Date : 6-Oct-22 High Volume ID : BKK_FS0388

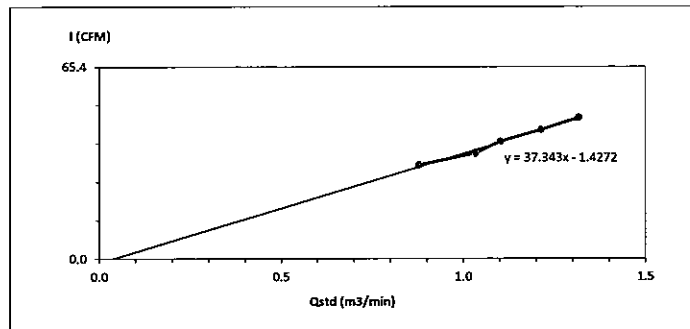
Calibration Sheet No. : C-061022-BKK_FS0388 High Volume Model : TE-5009X

Calibrator ID : BKK_FS0624 High Volume S/N : 5328

Calibrator Model : TE-5028A Calibrator Slope : 1.64942

Calibrator S/N : 2584 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	2.0	0.8782	32	Slope : 37.3434 Intercept : -1.4272 Correlation Coefficient : 0.9940
2	2.8	1.0338	36	
3	3.2	1.1031	40	
4	3.9	1.2148	44	
5	4.6	1.3169	48	



Calibrated by Mr. Teeravut Sukdee
(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by Mr. Noppong Juntarupan
(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location : สถานี 6 บริเวณตลาดหลักสี่ Temperature (°C) : 32

Calibrate Date : 14-Oct-22 High Volume ID : BKK_FS0388

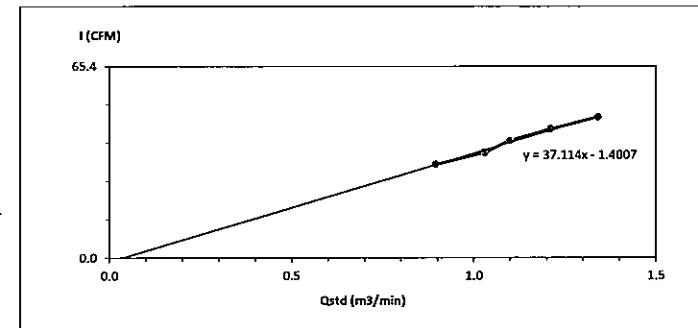
Calibration Sheet No. : C-141022-BKK_FS0388 High Volume Model : TE-5009X

Calibrator ID : BKK_FS0624 High Volume S/N : 5328

Calibrator Model : TE-5028A Calibrator Slope : 1.64942

Calibrator S/N : 2584 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	2.1	0.8963	32	Slope : 37.1137 Intercept : -1.4007 Correlation Coefficient : 0.9956
2	2.8	1.0305	36	
3	3.2	1.0996	40	
4	3.9	1.2109	44	
5	4.8	1.3402	48	



Calibrated by Mr. Teeravut Sukdee
(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by Mr. Noppong Juntarupan
(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location : สถานี 7 บริเวณขบวนรถสายสีแดง Temperature (°C) : 30

Calibrate Date : 20-Oct-22 High Volume ID : BKK_FS1063

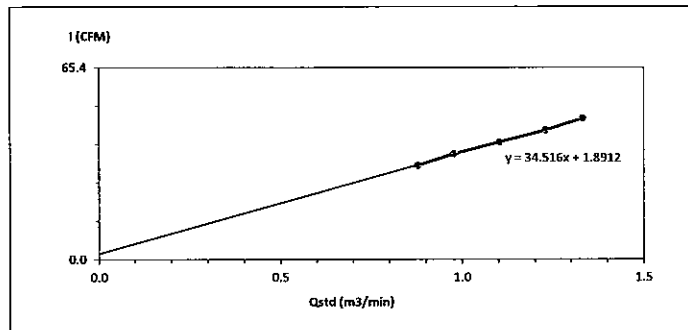
Calibration Sheet No. : C-201022-BKK_FS1063 High Volume Model : TE-5009X

Calibrator ID : BKK_FS0624 High Volume S/N : 5685

Calibrator Model : TE-S028A Calibrator Slope : 1.64942

Calibrator S/N : 2584 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	2.0	0.8782	32	Slope : 34.5160 Intercept : 1.8912 Correlation Coefficient : 0.9990
2	2.5	0.9784	36	
3	3.2	1.1031	40	
4	4.0	1.2299	44	
5	4.7	1.3308	48	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location : สถานี 8 บริเวณวัดดอนเมือง Temperature (°C) : 32

Calibrate Date : 14-Oct-22 High Volume ID : BKK_FS0385

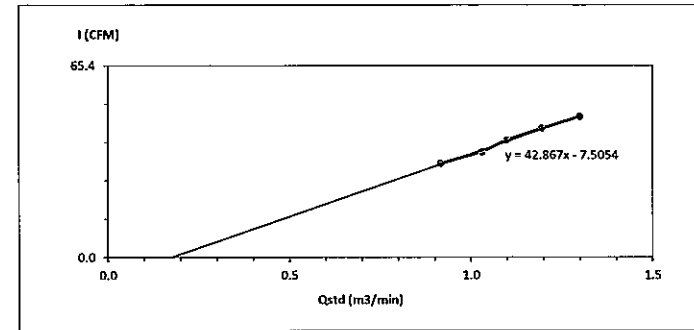
Calibration Sheet No. : C-141022-BKK_FS0385 High Volume Model : TE-5009X

Calibrator ID : BKK_FS0624 High Volume S/N : 4789

Calibrator Model : TE-S028A Calibrator Slope : 1.64942

Calibrator S/N : 2584 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	2.2	0.9167	32	Slope : 42.8666 Intercept : -7.5054 Correlation Coefficient : 0.9978
2	2.8	1.0305	36	
3	3.2	1.0996	40	
4	3.8	1.1957	44	
5	4.5	1.2986	48	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location : สถานี 9 บริเวณทางเข้าสนามบิน Temperature (°C) : 32

Calibrate Date : 14-Oct-22 High Volume ID : BKK_FS1063

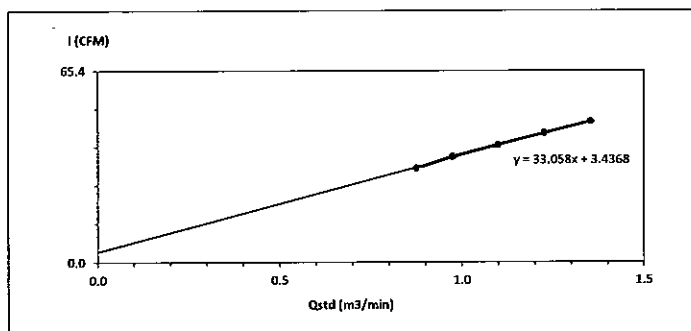
Calibration Sheet No. : C-141022-BKK_FS1063 High Volume Model : TE-5009X

Calibrator ID : BKK_FS0624 High Volume S/N : 5685

Calibrator Model : TE-5028A Calibrator Slope : 1.64942

Calibrator S/N : 2584 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	2.0	0.8754	32	Slope : 33.0581 Intercept : 3.4368 Correlation Coefficient : 0.9990
2	2.5	0.9753	36	
3	3.2	1.0996	40	
4	4.0	1.2260	44	
5	4.9	1.3538	48	



Calibrated by : (Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by : (Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location : สถานี 10 บริเวณโรงจอดรถของท่าอากาศยาน Temperature (°C) : 32

Calibrate Date : 14-Oct-22 High Volume ID : BKK_FS0380

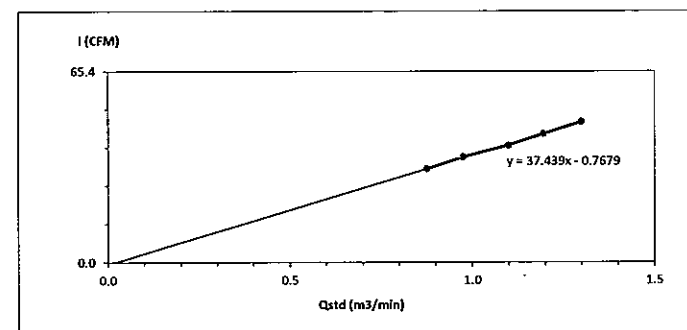
Calibration Sheet No. : C-141022-BKK_FS0380 High Volume Model : TE-5009X

Calibrator ID : BKK_FS0624 High Volume S/N : 4163

Calibrator Model : TE-5028A Calibrator Slope : 1.64942

Calibrator S/N : 2584 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	2.0	0.8754	32	Slope : 37.4389 Intercept : -0.7679 Correlation Coefficient : 0.9992
2	2.5	0.9753	36	
3	3.2	1.0996	40	
4	3.8	1.1957	44	
5	4.5	1.2986	48	



Calibrated by : (Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by : (Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)

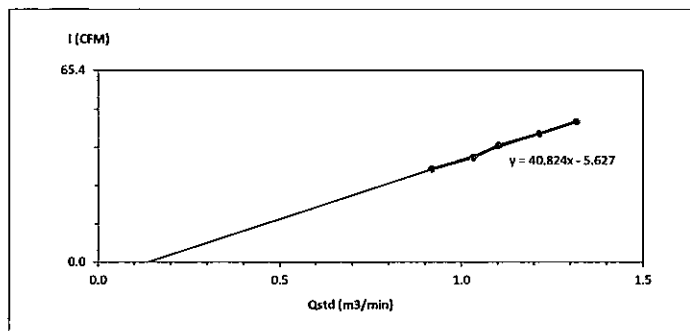


High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited
 Calibrate Location : สถานี 12 บริเวณอาคารพักอาศัย
 Calibrate Date : 20-Oct-22
 Calibration Sheet No. : C-201022-BKK_FS0380
 Calibrator ID : BKK_FS0624
 Calibrator Model : TE-S028A
 Calibrator S/N : 2584

Barometric Pressure (mm Hg) : 758
 Temperature (°C) : 30
 High Volume ID : BKK_FS0380
 High Volume Model : TE-S009X
 High Volume S/N : 4163
 Calibrator Slope : 1.64942
 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	2.2	0.9196	32	Slope : 40.8242 Intercept : -5.6270 Correlation Coefficient : 0.9978
2	2.8	1.0338	36	
3	3.2	1.1031	40	
4	3.9	1.2148	44	
5	4.6	1.3169	48	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)

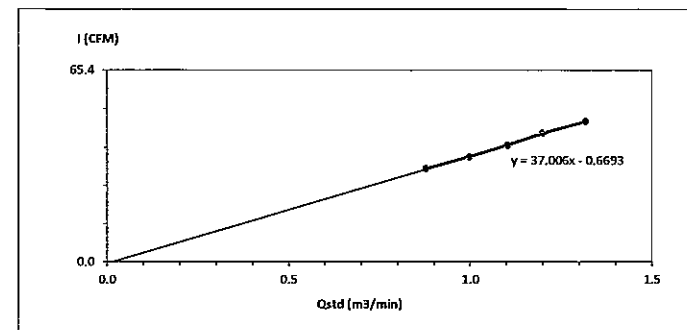


High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited
 Calibrate Location : สถานี 13 บริเวณชานชาลา
 Calibrate Date : 20-Oct-22
 Calibration Sheet No. : C-201022-BKK_FS0385
 Calibrator ID : BKK_FS0624
 Calibrator Model : TE-S028A
 Calibrator S/N : 2584

Barometric Pressure (mm Hg) : 758
 Temperature (°C) : 30
 High Volume ID : BKK_FS0385
 High Volume Model : TE-S009X
 High Volume S/N : 4789
 Calibrator Slope : 1.64942
 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	2.0	0.8782	32	Slope : 37.0062 Intercept : -0.6693 Correlation Coefficient : 0.9994
2	2.6	0.9972	36	
3	3.2	1.1031	40	
4	3.8	1.1995	44	
5	4.6	1.3169	48	



Calibrated by

(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by

(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)



High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location : สถานี 14 บริเวณถนนอินทพร Temperature (°C) : 30

Calibrate Date : 20-Oct-22 High Volume ID : BKK_FS0388

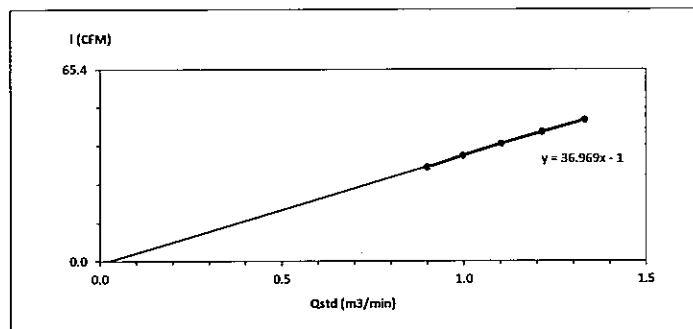
Calibration Sheet No. : C-201022-BKK_FS0388 High Volume Model : TE-5009X

Calibrator ID : BKK_FS0624 High Volume S/N : 5328

Calibrator Model : TE-5028A Calibrator Slope : 1.64942

Calibrator S/N : 2584 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	2.1	0.8992	32	Slope : 36.9693 Intercept : -1.0000 Correlation Coefficient : 0.9995
2	2.6	0.9972	36	
3	3.2	1.1031	40	
4	3.9	1.2148	44	
5	4.7	1.3308	48	



Calibrated by : Mr. Teeravut Sukdee
(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by : Mr. Noppong Juntarupan
(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)

FORM NO: F 06-074 REVISION NO: - ISSUE DATE: 14/03/16



High Volume Air Sampler Calibration Worksheet

Project Site : S.R.T. Electrified Train Company Limited Barometric Pressure (mm Hg) : 758

Calibrate Location : สถานี 11 บริเวณทางเข้าโสมเพลส Temperature (°C) : 32

Calibrate Date : 10-Nov-22 High Volume ID : BKK_FS0382

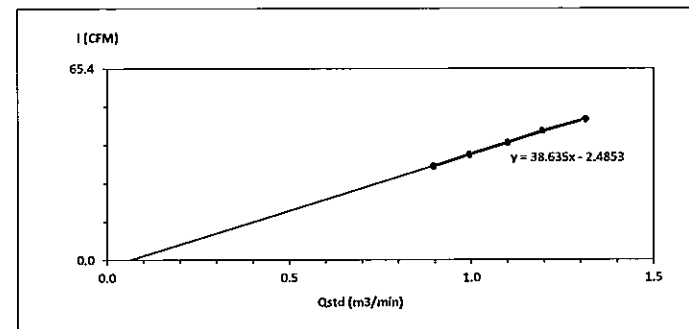
Calibration Sheet No. : C-101122-BKK_FS0382 High Volume Model : TE-5009X

Calibrator ID : BKK_FS0624 High Volume S/N : 4786

Calibrator Model : TE-5028A Calibrator Slope : 1.64942

Calibrator S/N : 2584 Calibrator Intercept : -0.02902

Test No.	Delta H ₂ O (Inch)	Q _{std} (m ³ /min)	I : Chart (CFM)	Linear Regression
1	2.1	0.8963	32	Slope : 38.6351 Intercept : -2.4853 Correlation Coefficient : 0.9995
2	2.6	0.9940	36	
3	3.2	1.0996	40	
4	3.8	1.1957	44	
5	4.6	1.3126	48	



Calibrated by : Mr. Teeravut Sukdee
(Mr. Teeravut Sukdee)
Field Scientist(1)

Approved by : Mr. Noppong Juntarupan
(Mr. Noppong Juntarupan)
Enviro Field Coordinator Scientist (3)

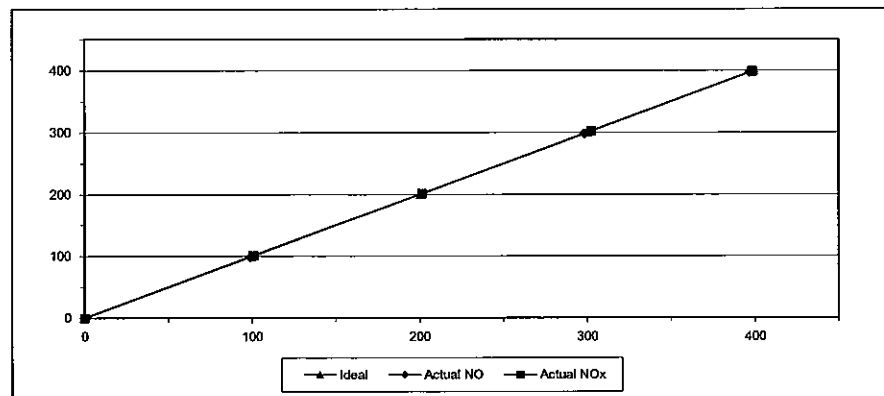
FORM NO: F 06-074 REVISION NO: - ISSUE DATE: 14/03/16



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	PPGM9HKH	Equipment ID	BKK_FS1070
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	98.80	-1.20	-1.20	100.80	0.80	0.80
2	200.00	201.30	1.30	0.65	201.50	1.50	0.75
3	300.00	298.30	-1.70	-0.57	302.40	2.40	0.80
4	400.00	396.90	-3.10	-0.78	398.50	-1.50	-0.38
AVERAGE (%)				-0.36			0.41



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

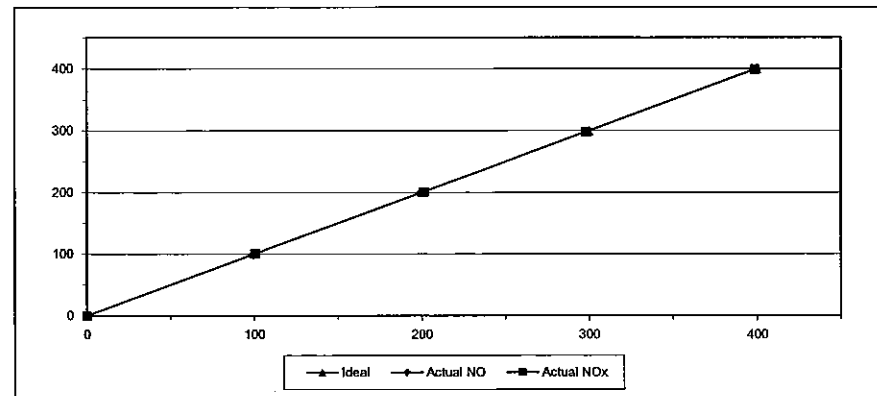
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	WPY0JMWD	Equipment ID	BKK_FS0782
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.60	-0.40	-0.40	100.60	0.60	0.60
2	200.00	199.70	-0.30	-0.15	201.30	1.30	0.65
3	300.00	298.50	-1.50	-0.50	298.30	-1.70	-0.57
4	400.00	398.70	-1.30	-0.33	399.00	-1.00	-0.25
AVERAGE (%)				-0.26			0.11



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

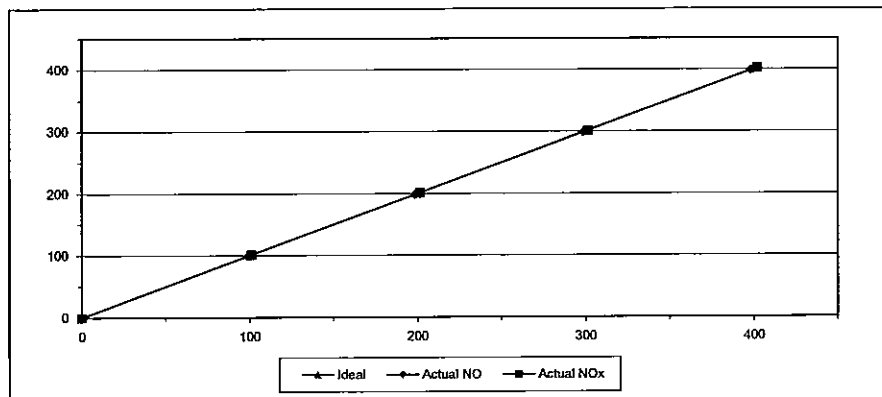
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	Teledyne API	Model	T200
Serial No.	6305	Equipment ID	BKK_FS1098
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.40	-0.60	-0.60	101.20	1.20	1.20
2	200.00	198.40	-1.60	-0.80	201.40	1.40	0.70
3	300.00	298.50	-1.50	-0.50	301.30	1.30	0.43
4	400.00	398.50	-1.50	-0.38	402.20	2.20	0.55
AVERAGE (%)				-0.43			0.60



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

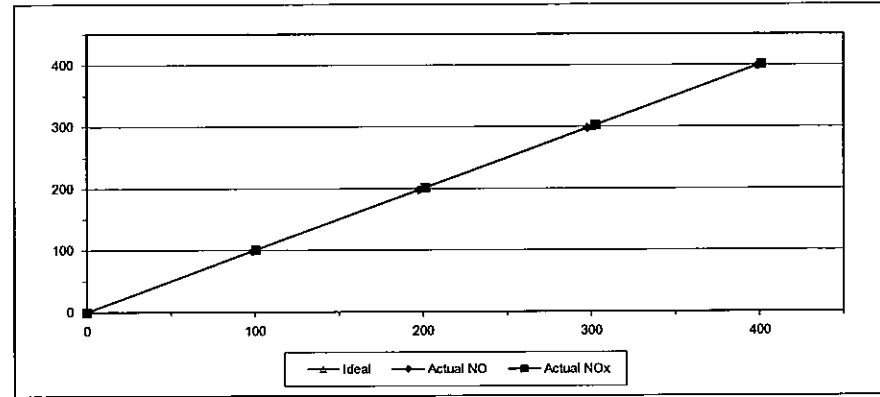
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	HCWSR681	Equipment ID	BKK_FS0800
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.00	-1.00	-1.00	100.50	0.50	0.50
2	200.00	197.60	-2.40	-1.20	201.50	1.50	0.75
3	300.00	298.00	-2.00	-0.67	302.50	2.50	0.83
4	400.00	398.80	-1.20	-0.30	401.20	1.20	0.30
AVERAGE (%)				-0.61			0.50



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

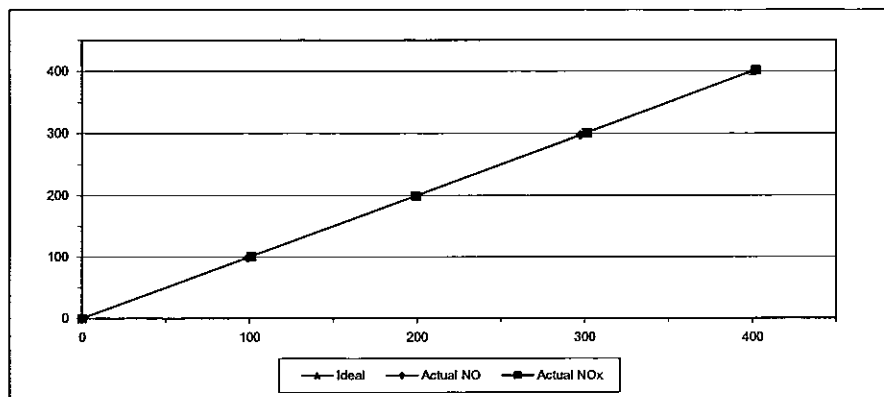
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	Teledyne API	Model	200E
Serial No.	4379	Equipment ID	BKK_FS0776
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.10	-0.90	-0.90	101.20	1.20	1.20
2	200.00	199.30	-0.70	-0.35	199.20	-0.80	-0.40
3	300.00	297.40	-2.60	-0.87	301.40	1.40	0.47
4	400.00	401.50	1.50	0.38	402.10	2.10	0.53
AVERAGE (%)				-0.33			0.38



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

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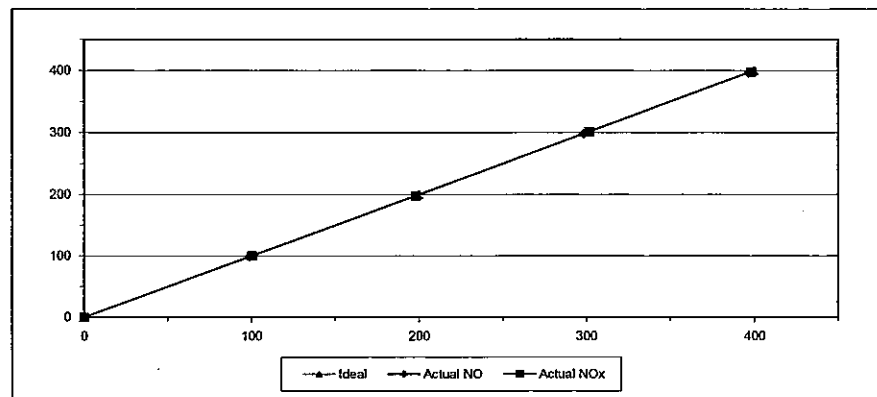
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	PX13CWA0	Equipment ID	BKK_FS1088
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.00	-1.00	-1.00	100.30	0.30	0.30
2	200.00	198.30	-1.70	-0.85	198.10	-1.90	-0.95
3	300.00	298.40	-1.60	-0.53	301.70	1.70	0.57
4	400.00	396.70	-3.30	-0.83	398.30	-1.70	-0.42
AVERAGE (%)				-0.62			-0.08



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

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Assistant General Manager

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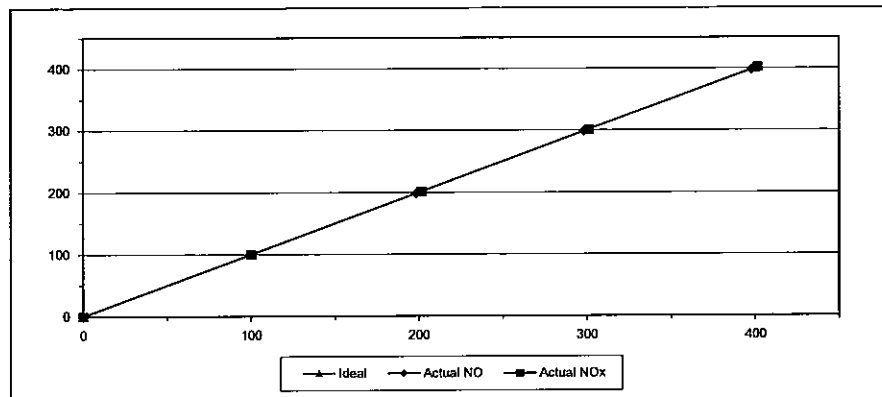
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	30K18RHM	Equipment ID	BKK_FS1086
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.05	0.05	0.05	0.10	0.10	0.10
1	100.00	99.50	-0.50	-0.50	100.20	0.20	0.20
2	200.00	198.30	-1.70	-0.85	201.60	1.60	0.80
3	300.00	298.10	-1.90	-0.63	301.10	1.10	0.37
4	400.00	398.20	-1.80	-0.45	401.60	1.60	0.40
AVERAGE (%)				-0.48			0.37



Calibrated By

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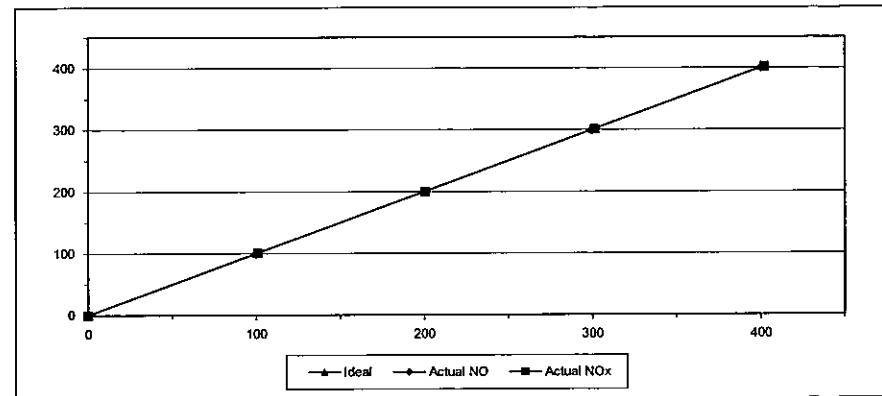
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	VJVBGEPP	Equipment ID	BKK_FS0779
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	100.10	0.10	0.10	101.00	1.00	1.00
2	200.00	199.80	-0.20	-0.10	200.50	0.50	0.25
3	300.00	299.60	-0.40	-0.13	301.20	1.20	0.40
4	400.00	400.50	0.50	0.13	402.20	2.20	0.55
AVERAGE (%)				0.02			0.46



Calibrated By

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Approved By

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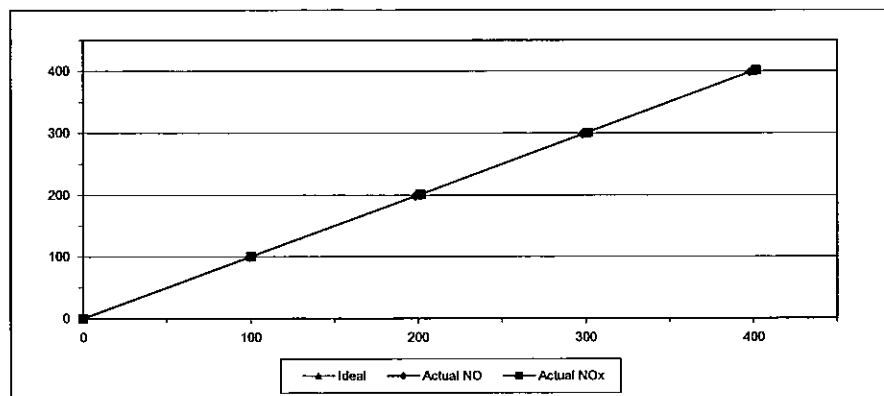
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	30K18RHM	Equipment ID	BKK_FS1086
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.05	0.05	0.05	0.10	0.10	0.10
1	100.00	99.50	-0.50	-0.50	100.20	0.20	0.20
2	200.00	198.30	-1.70	-0.85	201.60	1.60	0.80
3	300.00	298.10	-1.90	-0.63	301.10	1.10	0.37
4	400.00	398.20	-1.80	-0.45	401.60	1.60	0.40
AVERAGE (%)				-0.48			0.37



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

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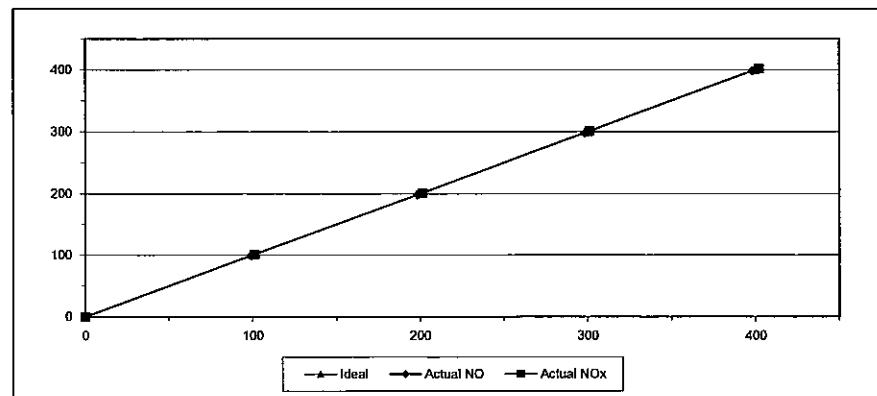
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	Teledyne API	Model	T200
Serial No.	6305	Equipment ID	BKK_FS1098
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.40	-0.60	-0.60	101.20	1.20	1.20
2	200.00	198.40	-1.60	-0.80	201.40	1.40	0.70
3	300.00	298.50	-1.50	-0.50	301.30	1.30	0.43
4	400.00	398.50	-1.50	-0.38	402.20	2.20	0.55
AVERAGE (%)				-0.43			0.60



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

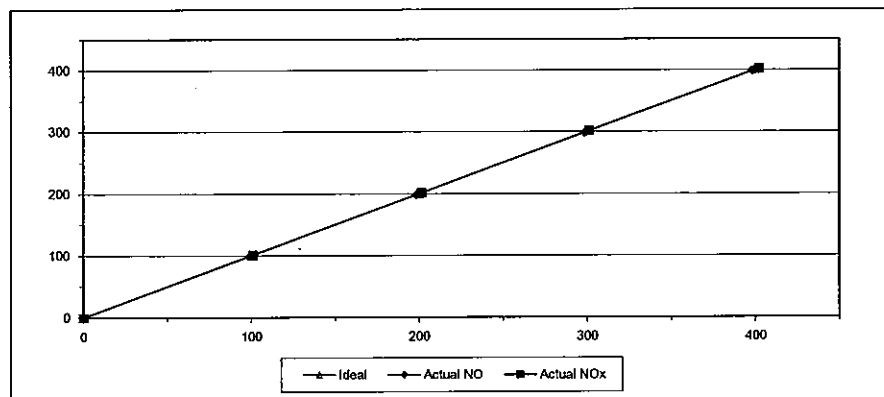
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	Teledyne API	Model	T200
Serial No.	6305	Equipment ID	BKK_FS1098
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.40	-0.60	-0.60	101.20	1.20	1.20
2	200.00	198.40	-1.60	-0.80	201.40	1.40	0.70
3	300.00	298.50	-1.50	-0.50	301.30	1.30	0.43
4	400.00	398.50	-1.50	-0.38	402.20	2.20	0.55
AVERAGE (%)				-0.43	0.60		



Calibrated By

(Mr.Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr.Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

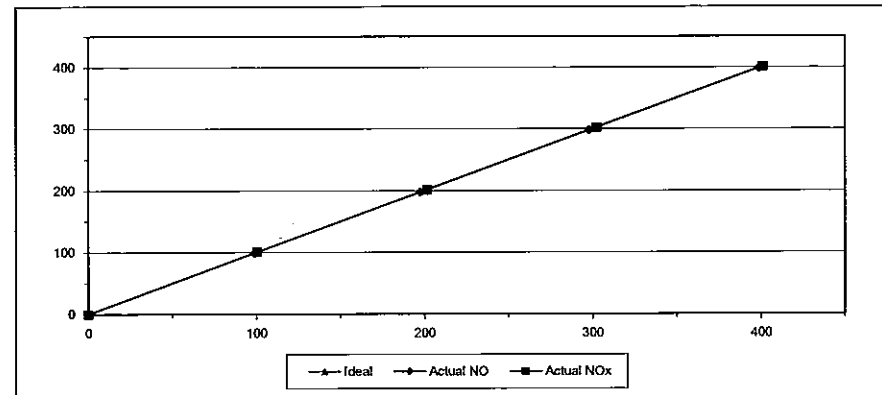
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	HCWSR681	Equipment ID	BKK_FS0800
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.00	-1.00	-1.00	100.50	0.50	0.50
2	200.00	197.60	-2.40	-1.20	201.50	1.50	0.75
3	300.00	298.00	-2.00	-0.67	302.50	2.50	0.83
4	400.00	398.80	-1.20	-0.30	401.20	1.20	0.30
AVERAGE (%)				-0.61	0.50		



Calibrated By

(Mr.Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr.Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

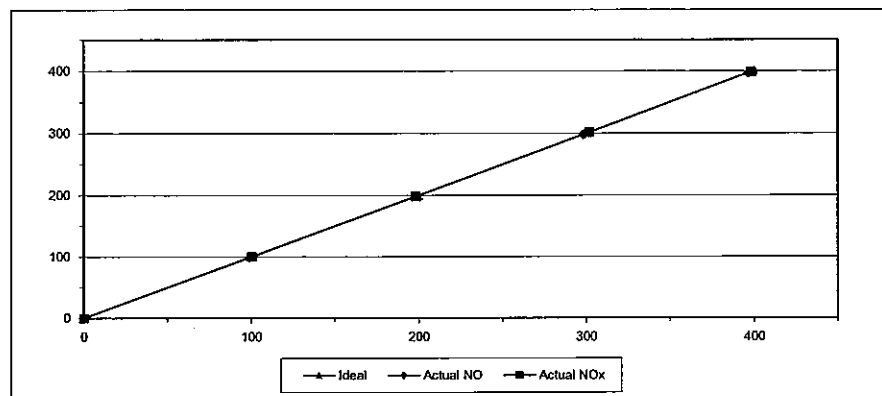
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	PX13CWA0	Equipment ID	BKK_FS1088
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.00	-1.00	-1.00	100.30	0.30	0.30
2	200.00	198.30	-1.70	-0.85	198.10	-1.90	-0.95
3	300.00	298.40	-1.60	-0.53	301.70	1.70	0.57
4	400.00	396.70	-3.30	-0.83	398.30	-1.70	-0.42
AVERAGE (%)				-0.62			-0.08



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

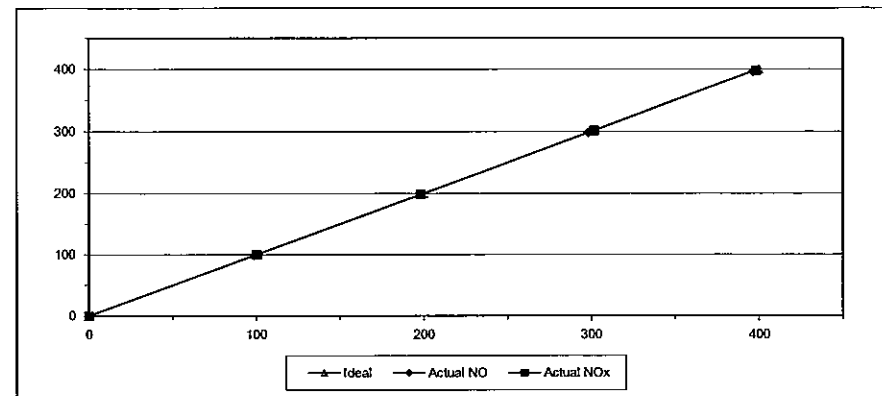
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	PX13CWA0	Equipment ID	BKK_FS1088
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.00	-1.00	-1.00	100.30	0.30	0.30
2	200.00	198.30	-1.70	-0.85	198.10	-1.90	-0.95
3	300.00	298.40	-1.60	-0.53	301.70	1.70	0.57
4	400.00	396.70	-3.30	-0.83	398.30	-1.70	-0.42
AVERAGE (%)				-0.62			-0.08



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

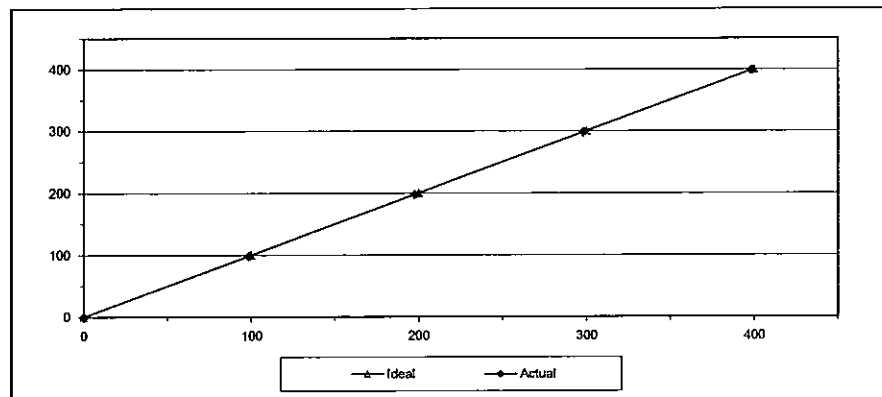
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	HORIBA	Model	APMA-370
Serial No.	YD1WSD2G	Equipment ID	BKK_FS0786
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.80	-1.20	-1.20
2	200.00	197.80	-2.20	-1.10
3	300.00	298.20	-1.80	-0.60
4	400.00	398.50	-1.50	-0.38
AVERAGE (%)				-0.64



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

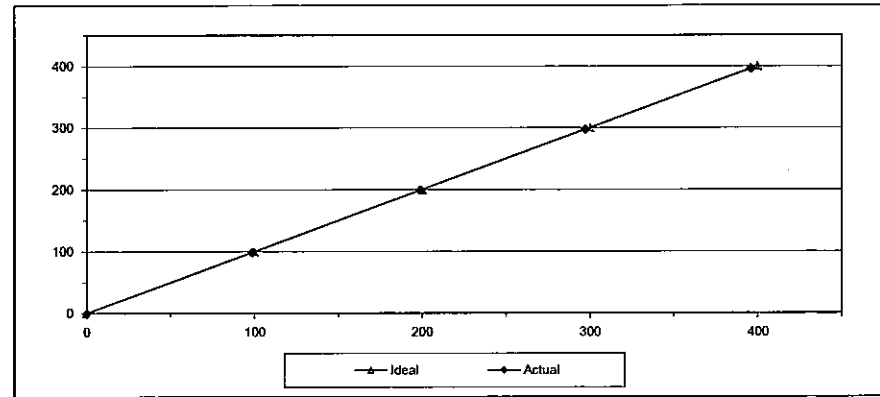
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	Teledyne API	Model	T300
Serial No.	3630	Equipment ID	SGK_FS0068
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.70	-1.30	-1.30
2	200.00	198.80	-1.20	-0.60
3	300.00	297.40	-2.60	-0.87
4	400.00	395.90	-4.10	-1.03
AVERAGE (%)				-0.74



Calibrated By

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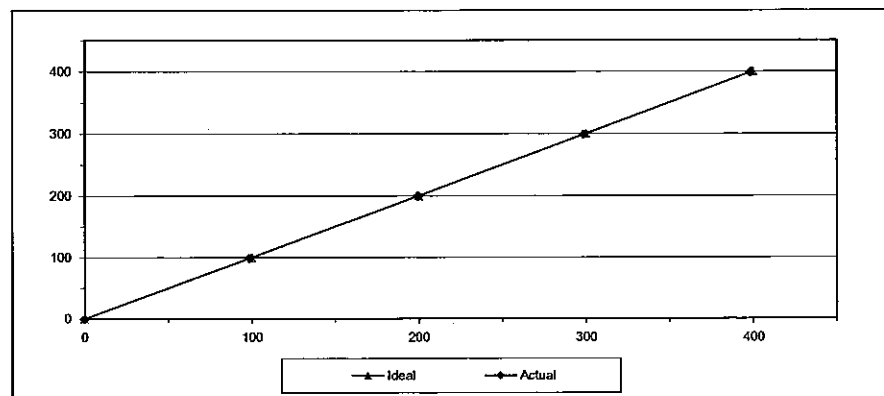
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	Teledyne API	Model	300E
Serial No.	1759	Equipment ID	BKK_FS0731
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.50	-1.50	-1.50
2	200.00	199.30	-0.70	-0.35
3	300.00	298.50	-1.50	-0.50
4	400.00	398.40	-1.60	-0.40
AVERAGE (%)				-0.53



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

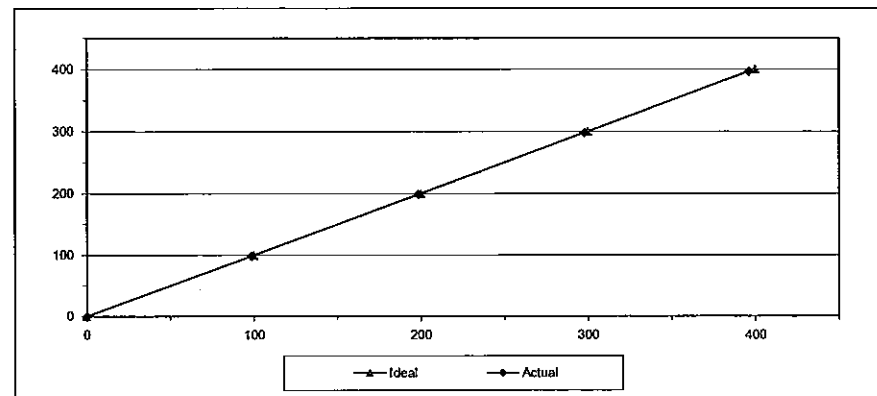
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	HORIBA	Model	APMA-370
Serial No.	VX4SDB2M	Equipment ID	RYG_FS0451
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.05	0.05	0.05
1	100.00	98.70	-1.30	-1.30
2	200.00	198.50	-1.50	-0.75
3	300.00	297.90	-2.10	-0.70
4	400.00	396.20	-3.80	-0.95
AVERAGE (%)				-0.73



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

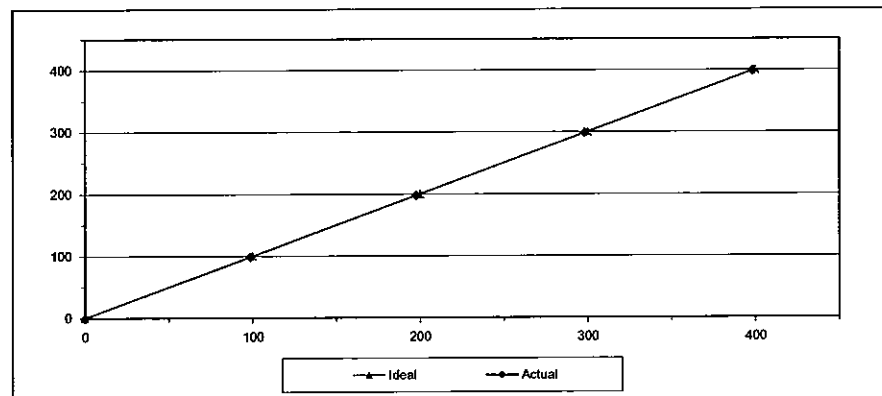
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	HORIBA	Model	APMA-370
Serial No.	YD1WSD2G	Equipment ID	BKK_FS0786
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.80	-1.20	-1.20
2	200.00	197.80	-2.20	-1.10
3	300.00	298.20	-1.80	-0.60
4	400.00	398.50	-1.50	-0.38
AVERAGE (%)				-0.64



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

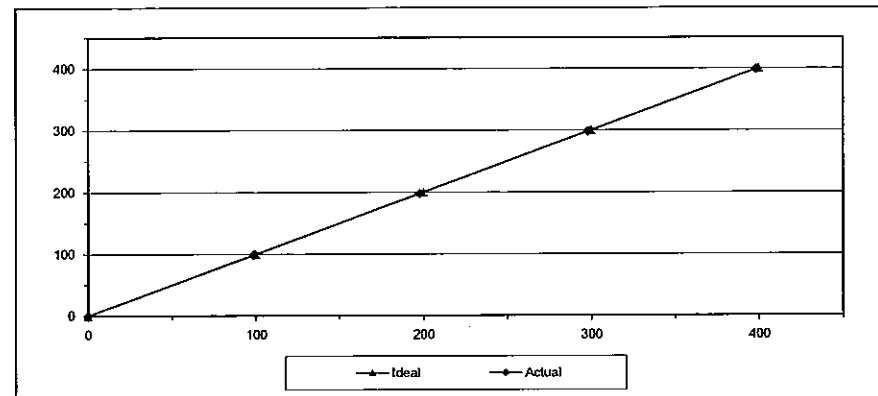
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MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	HORIBA	Model	APMA-370
Serial No.	YD1WSD2G	Equipment ID	BKK_FS0786
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.80	-1.20	-1.20
2	200.00	197.80	-2.20	-1.10
3	300.00	298.20	-1.80	-0.60
4	400.00	398.50	-1.50	-0.38
AVERAGE (%)				-0.64



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

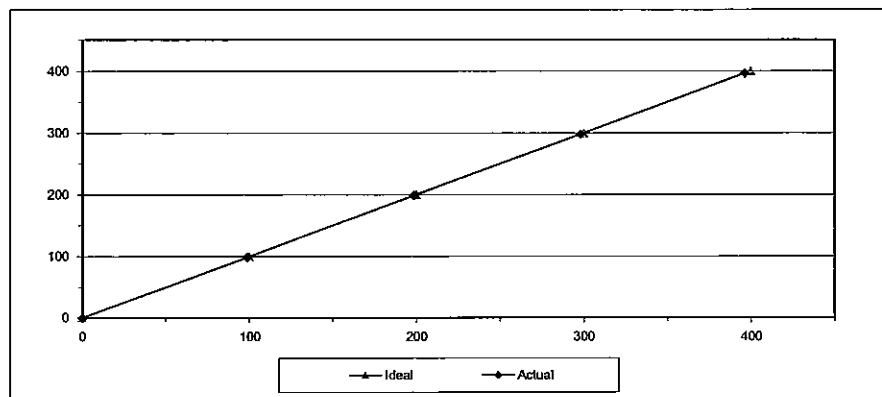
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	HORIBA	Model	APMA-370
Serial No.	VX4SDB2M	Equipment ID	RYG_FS0451
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.05	0.05	0.05
1	100.00	98.70	-1.30	-1.30
2	200.00	198.50	-1.50	-0.75
3	300.00	297.90	-2.10	-0.70
4	400.00	396.20	-3.80	-0.95
AVERAGE (%)				-0.73



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

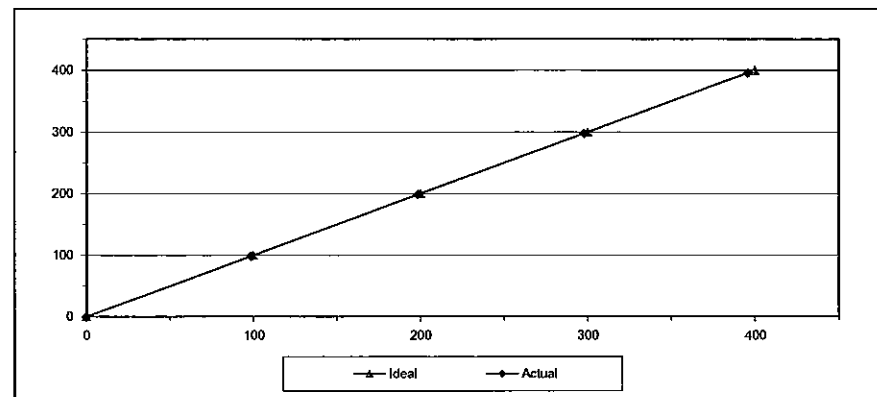
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	HORIBA	Model	APMA-370
Serial No.	8M404056	Equipment ID	BKK_FS1065
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.70	-1.30	-1.30
2	200.00	198.50	-1.50	-0.75
3	300.00	297.80	-2.20	-0.73
4	400.00	395.80	-4.20	-1.05
AVERAGE (%)				-0.75



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

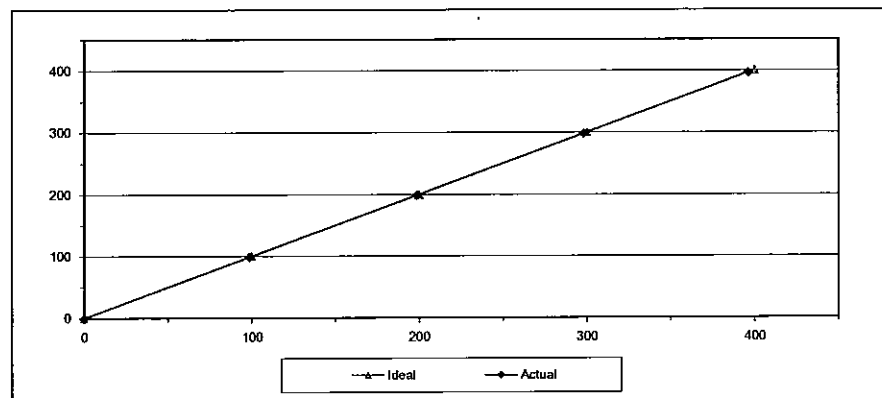
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	HORIBA	Model	APMA-370
Serial No.	VX4SDB2M	Equipment ID	RYG_FS0451
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.05	0.05	0.05
1	100.00	98.70	-1.30	-1.30
2	200.00	198.50	-1.50	-0.75
3	300.00	297.90	-2.10	-0.70
4	400.00	396.20	-3.80	-0.95
AVERAGE (%)				-0.73



Calibrated By

(Mr.Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr.Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

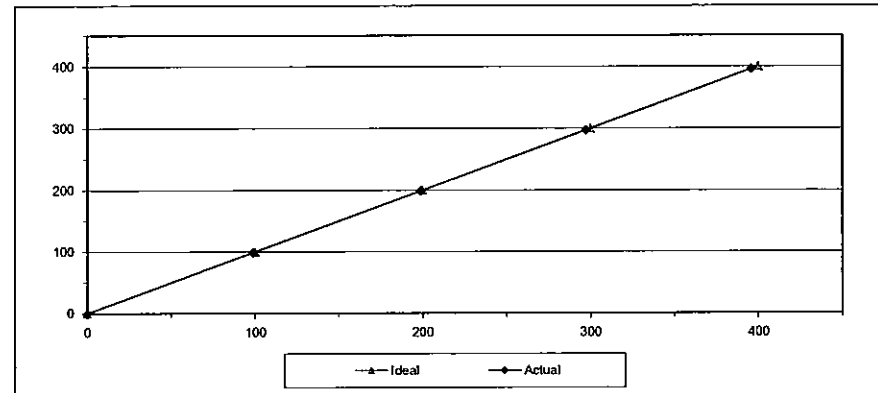
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	Teledyne API	Model	T300
Serial No.	3630	Equipment ID	SGK_FS0068
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.70	-1.30	-1.30
2	200.00	198.80	-1.20	-0.60
3	300.00	297.40	-2.60	-0.87
4	400.00	395.90	-4.10	-1.03
AVERAGE (%)				-0.74



Calibrated By

(Mr.Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr.Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

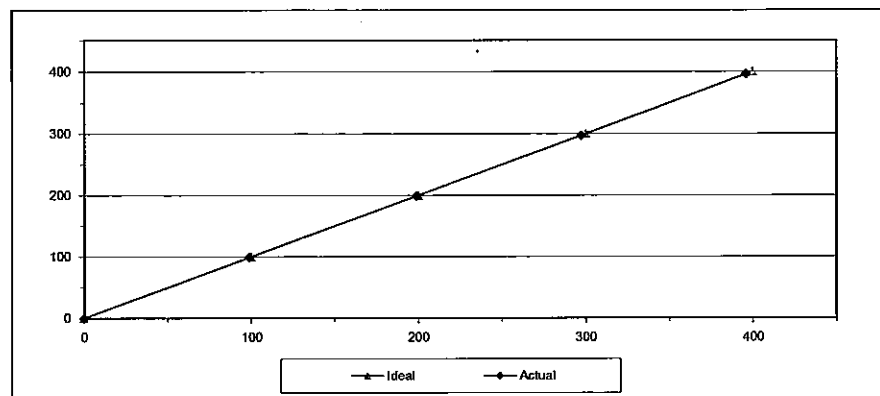
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	Teledyne API	Model	T300
Serial No.	3630	Equipment ID	SGK_FS0068
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.70	-1.30	-1.30
2	200.00	198.80	-1.20	-0.60
3	300.00	297.40	-2.60	-0.87
4	400.00	395.90	-4.10	-1.03
AVERAGE (%)				-0.74



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

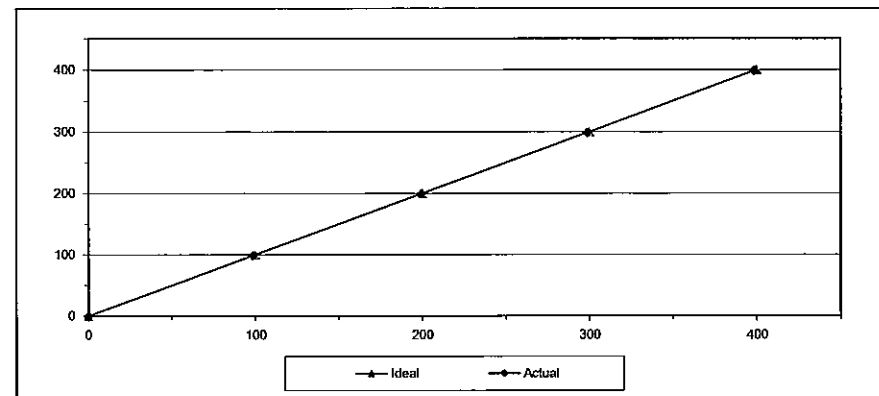
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	Teledyne API	Model	300E
Serial No.	1759	Equipment ID	BKK_FS0731
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.50	-1.50	-1.50
2	200.00	199.30	-0.70	-0.35
3	300.00	298.50	-1.50	-0.50
4	400.00	398.40	-1.60	-0.40
AVERAGE (%)				-0.53



Calibrated By

(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

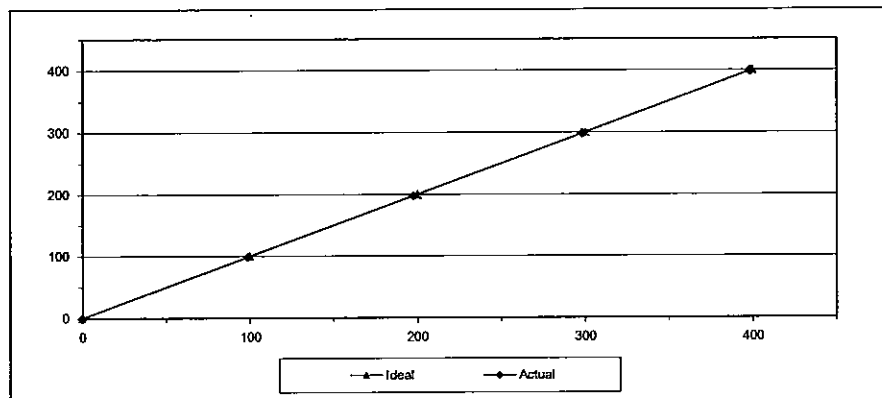
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12




MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	HORIBA	Model	APMA-370
Serial No.	YD1WSD2G	Equipment ID	BKK_FS0786
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30


Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.80	-1.20	-1.20
2	200.00	197.80	-2.20	-1.10
3	300.00	298.20	-1.80	-0.60
4	400.00	398.50	-1.50	-0.38
AVERAGE (%)				-0.64



Calibrated By


(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By


(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

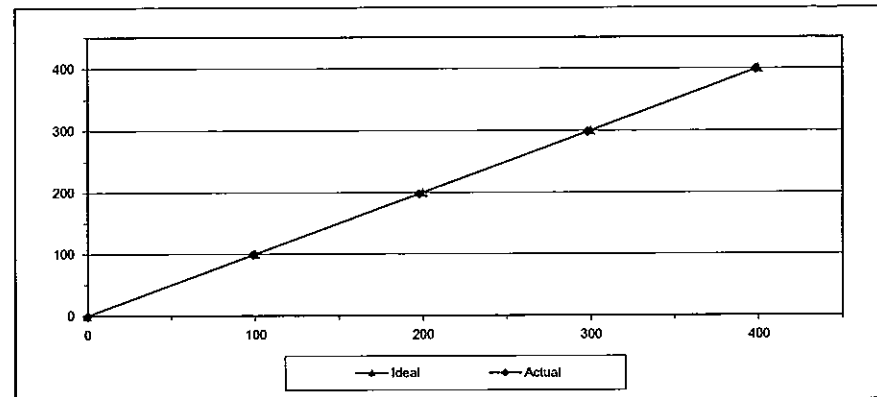
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	CO Analyzer
Manufacturer	HORIBA	Model	APMA-370
Serial No.	YD1WSD2G	Equipment ID	BKK_FS0786
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.22	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30


Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.80	-1.20	-1.20
2	200.00	197.80	-2.20	-1.10
3	300.00	298.20	-1.80	-0.60
4	400.00	398.50	-1.50	-0.38
AVERAGE (%)				-0.64



Calibrated By


(Mr. Jirawut Sakam)
Field Environmental Scientist (3)

Approved By


(Mr. Sarayuth Jitranont)
Assistant General Manager

ALS Laboratory Group

FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12

CERTIFICATE OF CALIBRATION

Certificate No: WS-04012022
Page 1 of 2 pages

Measurement Item : Cup anemometer with data logger.

Manufacturer : Data logger: Novalyx
Cup anemometer: Novalyx

Model/Type : Data logger: 110-WS-25DL-D
Cup anemometer: WS-02P

Serial Number : Data logger: A5444
Cup anemometer: WSD-003

ID No : Data logger: RYG_FS0435
Cup anemometer: -

Customer : ALS laboratory group (Thailand) co., Ltd.
104 Phatthanasri 40, Phatthanasri Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250 Thailand.

Test Conditions : Wind tunnel cross test section area 900 cm²
Anemometer frontal area 100 cm²
Diameter of mounting pipe - mm
Blockage ratio of test object 0.111 [-]

Test Conditions : Air temperature 24.4 ±0.8 °C
Air pressure 1011.2 ±0.4 hPa
Relative air humidity 55.6 ±3.5 %RH

Calibration Procedure : Calibration was carried out based on:
IEC 61400-12-1 601: 2005 Power Performance Measurements of Electricity Producing Wind Turbines.
MCASNET Anemometer Calibration Procedure - Version 2: 2009.

Traceability : This calibration documents the traceable to national standard, which realize the unit of measurements according to the international system of units (SI) through National Institute of Metrology Thailand (NIMT).

Measurement Date : JAN 26, 2022
Issued Date : JAN 31, 2022

Calibrated by
☒ Mr. Sorewit Thachalad
☐ Miss Orathai Witwitwittaya



Approved Signatory:
Mr. Parinya Booncharoen
Calibration Department Manager

Continuation of Certificate of Calibration Number

Certificate No: WS-04012022
Page 2 of 2 Pages

Result of calibration: ☒ Without adjustment ☐ With adjustment

Calibration in the range of 1 - 16 m/s at a calibration interval of 1 m/s.

The results of calibration and associated measurement uncertainties are reported in the table below.

V _{ISO} Reading m/s	V _{UNC} Reading m/s	Error (m/s)	Uncertainty (%)
2.070	2.0	-0.1	2.4
4.105	4.1	0.0	1.2
6.01	6.0	0.0	0.99
8.01	8.0	0.0	0.71
10.01	10.1	0.1	1.1
12.01	12.2	0.2	0.66
13.98	14.3	0.3	0.61
15.94	16.1	0.2	1.4
14.98	15.1	0.1	1.0
13.00	13.1	0.1	0.76
11.02	11.1	0.1	0.63
9.02	9.0	0.0	0.97
7.03	7.0	0.0	0.84
5.166	5.1	-0.1	1.2
2.996	3.0	0.0	1.6
1.029	0.9	-0.1	4.5

UUC: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

Appendix 1: Instrumentations

NO	Sensor	Manufacturer	Model/Type	Calibration Date	Certificate Report Number	Range
1	Pitot static	TCSTO INC.	06352145	Aug 07, 2021	MW-0034-21	5 - 30 m/s
2	Precision Differential Pressure Meter	Zoglab	OPM2500	Aug 07, 2021	MW-0034-21	5 - 30 m/s
3	Air velocity transducer (hot wire)	TSI INC.	8455-12	Aug 08, 2021	MW-0035-21	0 - 5 m/s
4	Temperature	Zoglab	DSR-THP	March 30, 2021	CL-027-24	-30 - 70 °C
5	Relative humidity	Zoglab	DSR-THP	March 30, 2021	RH-03032021	0 - 100 %RH
6	Atmospheric pressure	Zoglab	DSR-THP	March 30, 2021	BP-01032021	600 - 1100 hPa
7	Wind tunnel	CSSOM	MP330D	-	-	0 - 50 Hz

End of certificate of calibration



CERTIFICATE OF CALIBRATION

Certificate No: WD-04012022
Page 1 of 2 pages

Measurement Item : Wind direction sensor with data logger.

Manufacturer : Data logger: Novalynx.
: Wind direction sensor: Novalynx.

Model/Type : Data logger: 110-WS-25DL-D
: Wind direction sensor: WS-02F

Serial Number : Data logger: A5444
: Wind direction sensor: WSD-003

ID No : Data logger: RY0_F30435
: Wind direction sensor: -

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

Environmental Condition:

The measurement was carried out in an ambient temperature of (23±3) °C, and relative humidity of (40±10) %.

Measurement Method:

The wind direction sensor calibration according to comparison method with reference angle measurement electronic theodolite and line laser is used for axis control. The measurement were taken at 45° intervals in clockwise and counterclockwise directions.

Note: The UUC was warmed up for 1 hour prior to the calibration being performed

Traceability:

The measurement results are traceable to the international system of units (SI) through Certificate No: Q21086014, Certificate No: KWS64/0025.

Measurement Date : JAN 25, 2022.

Issued Date : JAN 31, 2022.

Performed by

- ☒ Mr. Sorawit Thachalad
☐ Miss Orathai Wiwatwittaya



Approved Signatory: _____

Mr. Parinya Booncharoen.
Calibration Department Manager

THIS CERTIFICATE REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT PERMISSION FOR REPRODUCTION HAS BEEN
OBTAINED IN WRITING FROM THE LABORATORY.

Continuation of Certificate of Calibration Number

Certificate No: WD-04012022
Pages 2 of 2 pages

Result of calibration: ☐ Without adjustment; ☒ With adjustment.

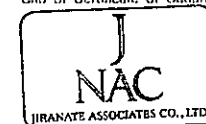
Calibration in the range of 0 – 360 ° at a calibration interval of 45°.

The results of calibration and associated measurement uncertainties are reported in table below.

NO	Turning Direction	Nominal Angle (°)	Standard Reading (°)	UUC* Reading (°)	Error (°)	Uncertainty ±(°)
1	Clockwise	0/360	0	0	0	3.0
2		45	45	41	-4	3.0
3		90	90	87	-3	3.0
4		135	135	133	-2	3.0
5		180	180	180	0	3.0
6		225	225	227	2	3.0
7		270	270	272	2	3.0
8		315	315	317	2	3.0
9	Counter Clockwise	0/360	0	0	0	3.0
10		45	45	41	-4	3.0
11		90	90	87	-3	3.0
12		135	135	133	-2	3.0
13		180	180	180	0	3.0
14		225	225	227	2	3.0
15		270	270	272	2	3.0
16		315	315	317	2	3.0

UUC*: Unit: Under Calibration The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

End of Certificate of Calibration



CALIBRATION REPORT

Calibration No. : RH-04012022

Page 1 of 1 Pages

Measurement Item : Relative humidity with data logger.

Manufacturer : Data logger: Novolynx.
: Relative humidity sensor: Novolynx.

Model/Type : Data logger: 110-WS-25DL-D
: Relative humidity sensor: HMP60

Serial Number : Data logger: A5444
: Relative humidity sensor: R1131112

ID No : Data logger: RYG_FSO435
: Relative humidity sensor: -

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

Environmental Condition:

The measurement was carried out in an ambient temperature of (25±3)°C, and relative humidity of (50±15)%.

Measurement Method:

The Relative humidity with data logger, Unit Under Calibration (UUC) was calibrated by comparison method with the equilibrium of standard salt solution CH₃COOK: Potassium Acetate, Mg(NO₃)₂: Magnesium Nitrate, KCl: Potassium Chloride to determine the errors.

Measurement Date : JAN 24, 2022

Issued Date : JAN 26, 2022

Measurement Results:

The results of calibration are reported in table below.

Standard salt solution.	Standard (%RH)	UUC(Reading)	Error
CH ₃ COOK: Potassium Acetate	22.51	22.3	-0.2
Mg(NO ₃) ₂ : Magnesium Nitrate	52.89	52.5	-0.4
KCl: Potassium Chloride	84.34	84.1	-0.2

Performed by

- ☐ Mr. Sorawit Thachalad
☒ Miss Orathai Wiwatwittaya



Approved Signatory: _____

Mr. Parinya Booncharoen,
Calibration Department Manager

THIS CALIBRATION REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL UNLESS PERMISSION FOR REPRODUCTION HAS BEEN OBTAINED IN WRITING FROM THE LABORATORY.

CALIBRATION REPORT

Calibration Number. : RG-04012022

Page 1 of 2 Pages

Measurement Item : Rain gauge with data logger.

Manufacturer : Data logger: Novolynx.
: Rain gauge: Novolynx.

Model/Type : Data logger: 110-WS-25DL-D
: Rain gauge: 110-WS-25RG

Serial Number : Data logger: A5444
: Rain gauge: RG-003

ID NO : RYG_FSO435

Customer : ALS laboratory group (Thailand) co., Ltd.
: 104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250, Thailand

Environmental Condition:

The measurement was carried out in an ambient temperature of (25±3)°C, and relative humidity of (50±15)%.

Measurement Method:

The Rain gauge, Unit Under Calibration (UUC) was calibrated by Precision reference bottle with flow adjuster at low rate 0.6 mm per minute or 1 tipping every 20 seconds. The tipping number was determined by procedures below.

- Obtain rain gauge inlet area:
Rain gauge precise diameter in cm = Diameter/2 = R (radius)
Rain gauge area= $R^2 \times 3.14$ (UUC diameter=20.3 cm, UUC radius=10.15 cm)
Rain gauge area= 323.6 cm².
- Obtain theoretical correct rain gauge answer (number of tipplings) using 323.6 cm² inlet area and 0.5 L of rain.
 - 10,000 cmg / 323.6 cm² inlet area = 30.90 (rain gauge area = 1/30.90 of square meter)
 - 30.90 * 0.5 L volume=15.45 mm (mm of rain over 1 m² surface) 500 m. of rain volume on the rain gauge area = 15.45 mm of rain.
 - Number of tipping=15.45 / 0.25 mm= 62 tipplings.

Note: Rain gauge is fully cleaned and leveling prior the calibration performed.

Measurement Date : JAN 26, 2022

Issued Date : JAN 31, 2022

Performed by

- ☒ Mr. Sorawit Thachalad
☐ Miss Orathai Wiwatwittaya



Approved Signatory: _____

Mr. Parinya Booncharoen,
Calibration Department Manager

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Continuation of Calibration of Calibration Number

Calibration Number: RG-04012022

Page 2 of 2 Pages

Result of Calibration: ☒ Without Adjustment ☐ With Adjustment

The results of calibration are reported in table below.

Quantity of H ₂ O (ml)	Determined Tipping	Tipping count	Acceptable Tipping count
500	62	64	60 - 64
500	62	63	60 - 64
500	62	62	60 - 64
500	62	63	60 - 64
500	62	62	60 - 64

Remark: The procedure is made to verify the correct reading of the Unit under Calibration rain gauge when a precise volume of water falls into its cone. We suggest that the number of tipping should be within $\pm 2\%$ different from the 62 tipping (correct range 60-64 tipping) it means that the rain gauge meets the manufacturer acceptable limit.

End of calibration report



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Accredited calibration laboratory
ISO/IEC 17025:2017
Pressure measurement laboratory
NSC-TISI-TIS 17025
CALIBRATION 0367

CERTIFICATE OF CALIBRATION

Certificate No. : CL-005-65

Page 1 of 2 Pages

MEASUREMENT ITEM : Digital barometer
MANUFACTURER : Novolynx
MODEL/TYPE : 110-WS-25BP
SERIAL NUMBER : A5444
ID NUMBER : RYG_FS0435
CUSTOMER : ALS laboratory group (Thailand) co., Ltd.
104 Phatthanakan 40, Phatthanakan Rd,
Khwaeng Suan Luang, Khet Suan Luang,
Bangkok 10250 Thailand.
RECEIVED DATE : 12 Jan 2022
MEASUREMENT DATE : 29 Jan 2022
ISSUE DATE : 31 Jan 2022

Calibration procedure:

The pressure calibration was done by in-house calibration method as WI-CL-003 according to comparison method with Digital pressure calibrator based on DKD-R 6-1

Traceability:

The measurement results are traceable to the international system of units (SI) through MENSOR which complies with the requirements of ISO/IEC17025:2017, ANSI/NCSL Z540-1 via Certificate number: 201479

The reported uncertainty is based on a standard uncertainty multiplied by a coverage $k=2$, providing a level of confidence of approximately 95%.

CONDITION OF THIS RESULT OF CALIBRATION:

1. Reference Standard Instrument:

Instrument	Model	Serial No.	Certificate No.	Due Date
Absolute Pressure Transducer	CPG2500	410018L1	201479	13 Sep 2022

2. The UUC* was installed in vertical orientation above reference standard instrument and center of UUC* was used as the reference level.

3. Calibration conditions:

Pressure transmitting medium	: Air
$\rho_{\text{air}}(20^{\circ}\text{C}, 1\text{bar})$	: 1.19 kg/m ³
Δh	: -0.080 m
T_{amb}	: (23 \pm 2) $^{\circ}\text{C}$
P_{amb}	: 1009.5 mbar

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

Calibrated by:

☒ Mr. Sorawit Thachalad
☐ Miss Oratal Wiwatwittaya



Approved signatory:

Mr. Parinya Booncharoen
Calibration Department Manager

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MEASUREMENT RESULTS : ☒ Without adjustment ☐ With adjustment

CALIBRATION IN THE RANGE OF : 950 – 1050 mbar

The results of calibration and associated measurement uncertainties are reported in the table below.

STD (mbar)	UUC* (mbar)	Error (mbar)	Uncertainty(k=2) (mbar)
950.32	951.181	0.856	1.3
970.14	970.682	0.538	0.70
990.05	990.524	0.470	0.58
1009.95	1010.106	0.157	0.34
1029.84	1029.946	0.107	0.25
1049.78	1049.594	-0.190	0.35

Note: UUC* Unit Under Calibration

End of certificate



CERTIFICATE OF CALIBRATION

Certificate No.: CL-004-65
Page 1 of 2

Equipment Name: Data Logger with Temperature
Sensor

Manufacturer: Novalynx
Model: 110-WS-25DL-D
Serial No.: A5444
ID No.: RYG_FS0435

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

Received date: 12 JAN 2022
Calibration date: 24 JAN 2022
Issue date: 25 JAN 2022

Reference Used During Calibration
1. Standard Temperature Probe Model: STS-100 A500,
Serial No.: 667682-09, Due date: 25 Mar 2022
2. Digital Temperature Indicator Model: DTI-1000-A MK
II, Serial No.: 671407-00591 Due date: 04 June 2022

Calibration Condition
Temperature: (23±3)°C
Relative Humidity: (55±15)%

Calibration Procedure
The temperature calibration was done by In-House
calibration method as WI-CL-001 according to
comparison method with standard digital temperature
indicator and standard temperature probe. The
temperature scale use was based on ITS-90.

Traceability
The measurement results are traceable to the
international system of units (SI) through National
Institute of Metrology Thailand (NIMT) Certificate
number: IT-0036-21, Certificate number: ER-0032-
21

Calibrated by
☐ Mr. Sorawit Thachalad
☒ Miss Orathai Wiwatwittaya



Approved Signatory: 2km6
Mr. Pannya Booncharoen
Calibration Department Manager



63/14-15,67/35-36, Soi Petchkasem7,7/1, Petchkasem Rd,
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Certificate No.: CL-004-65
Page 2 of 2

Result of Calibration: ☒ Without Adjustment ☐ With Adjustment

Calibration Range: 20-40 °C

Function:

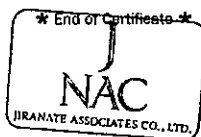
This equipment was connected with temperature sensor Model : HMP60 S/N : R1131114

Dimension : Diameter 12mm, Length 80 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
60	20.053	19.8	-0.3	0.099
60	25.005	24.5	-0.5	0.099
60	29.995	29.5	-0.5	0.099
60	34.976	34.4	-0.6	0.099
60	39.957	39.3	-0.7	0.099

UUC*: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%.




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CERTIFICATE OF CALIBRATION

Certificate No: WS-09082021

Page 1 of 2 pages

Measurement Item	: Cup anemometer with data logger.	
Manufacturer	: Data logger: Novolynx : Cup anemometer: Novolynx.	
Model/Type	: Data logger: 200-WS-25LB. : Cup anemometer: WS-02F.	
Serial Number	: Data logger: A5379. : Cup anemometer: -.	
ID No	: Data logger: RKS-FSD919. : Cup anemometer: -.	
Customer	: ALS laboratory group (Thailand) co., ltd. : 104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10260 Thailand.	
Test Conditions	: Wind tunnel cross test section area	900 cm ²
	: Anemometer frontal area	100 cm ²
	: Diameter of mounting pipe	- mm
	: Blockage ratio of test object	0.111 [-]
Test Conditions	: Air temperature	22.7 ±0.8 °C
	: Air pressure	1009.3 ±0.4 hPa
	: Relative air humidity	45.8 ±3.6 %RH
Calibration Procedure	Calibration was carried out base on: ISO 61400-12-1 ED.1: 2005-Power Performance Measurements of Electricity Producing Wind Turbines; MEASNET Anemometer Calibration Procedure - Version 2: 2009.	
Traceability	This calibration documents the traceable to national standard, Which realize the unit of measurements according to the international system of units (SI) through National Institute of Metrology Thailand (NIMT).	
Measurement Date	: Aug 30, 2021.	
Issued Date	: Aug 31, 2021.	
Calibrated by	<input checked="" type="checkbox"/> Mr. Sornwit Thacharad <input type="checkbox"/> Miss Orathai Wicelwitwitsa	
Approved Signatory:	 Mr. Patinyd Booncharoen Technical Support and Calibration Manager	

REVIEW BY	<i>Patinyd Booncharoen</i>
APPROVED BY	<i>Patinyd Booncharoen</i>
NEXT CAL. DATE	23/12/23

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Continuation of Certificate of Calibration Number

Certificate No: WS-09082021
Page 2 of 2 Pages

Result of calibration: ☒ Without adjustment ☐ With adjustment

Calibration in the range of 1 - 16 m/s at a calibration interval of 1 m/s.

The results of calibration and associated measurement uncertainties are reported in the table below.

V _{ISO} Reading m/s	V _{ISO} Reading m/s	Error (m/s)	Uncertainty (%)
2.060	2.0	-0.1	2.7
4.064	4.1	0.0	1.3
5.99	6.0	0.0	0.98
8.00	8.0	0.0	0.74
10.01	10.2	0.2	0.66
11.98	12.3	0.3	0.48
14.03	14.4	0.4	0.47
15.98	16.6	0.6	0.39
15.00	15.4	0.4	0.51
12.98	13.4	0.4	0.55
10.99	11.2	0.2	0.53
8.97	9.0	0.0	0.65
6.97	7.0	0.0	0.84
5.062	5.1	0.0	0.93
2.972	3.1	0.1	1.6
1.021	0.9	-0.1	5.3

UUC: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

Appendix 1: Instrumentations

NO	Sensor	Manufacturer	Model/Type	Calibration Date	Certificate Report Number	Range
1	Pitot static	TESTO INC.	00352145	Aug 07, 2021	MW-0034-21	5 - 30 m/s
2	Precision Differential Pressure Meter	Zoglab	DPM2500	Aug 07, 2021	MW-0034-21	5 - 30 m/s
3	Air velocity transducer (hot wire)	TSI INC.	8455-12	Aug 08, 2021	MW-0035-21	0 - 5 m/s
4	Temperature	Zoglab	DSR-THP	March 30, 2021	CL-027-64	-30 - 70°C
5	Relative humidity	Zoglab	DSR-THP	March 30, 2021	RH-03032021	0 - 100 %RH
6	Atmospheric pressure	Zoglab	DSR-THP	March 30, 2021	BP-01032021	500 - 1100 hPa
7	Wind tunnel	CSSOM	MP33CD	-	-	0 - 50 Hz

End of certificate of calibration



CERTIFICATE OF CALIBRATION

Certificate No: WD-08082021
Page 1 of 2 pages

Measurement Item : Wind direction sensor with data logger.

Manufacturer : Data logger: Novatynx.
: Wind direction sensor: Novatynx.

Model/Type : Data logger: 200-WS-25LB.
: Wind direction sensor: WS-02F.

Serial Number : Data logger: A5379.
: Wind direction sensor: -.

ID No : Data logger: BKK_FS0919.
: Wind direction sensor: -.

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

Environmental Condition:

The measurement was carried out in an ambient temperature of (23±3)°C, and relative humidity of (40±10)%.

Measurement Method:

The wind direction sensor calibration according to comparison method with reference angle measurement electronic theodolite and line laser is used for axis control. The measurement were taken at 45° intervals in clockwise and counterclockwise directions.

Note: The UUC was warmed up for 1 hour prior to the calibration being performed

Traceability:

The measurement results are traceable to the international system of units (SI) through Certificate No: CC563-07-0045, Certificate No: KWS63/0044.

Measurement Date : Aug 30, 2021.

Issued Date : Aug 31, 2021.

Performed by
☒ Mr. Sorawit Thachalad
☐ Miss Orathai Wiwatwittaya



Approved Signatory:

Mr. Parinya Booncharoen.
Technical Support
and Calibration Manager

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Continuation of Certificate of Calibration Number

Certificate No: WD-08082021
Pages 2 of 2 pages

Result of calibration: ☐ Without adjustment ☒ With adjustment.

Calibration in the range of 0 - 360 ° at a calibration interval of 45°.

The results of calibration and associated measurement uncertainties are reported in table below.

NO	Turning Direction	Nominal Angle (°)	Standard Reading (°)	UUC* Reading (°)	Error (°)	Uncertainty ±(°)
1	Clockwise	0/360	360	359	-1	3.0
2		45	45	41	-4	3.0
3		90	90	86	-4	3.0
4		135	135	133	-2	3.0
5		180	180	178	-2	3.0
6		225	225	227	2	3.0
7		270	270	273	3	3.0
8		315	315	318	3	3.0
9	Counter Clockwise	0/360	360	359	-1	3.0
10		45	45	41	-4	3.0
11		90	90	86	-4	3.0
12		135	135	133	-2	3.0
13		180	180	178	-2	3.0
14		225	225	227	2	3.0
15		270	270	273	3	3.0
16		315	315	318	3	3.0

UUC*: Unit Under Calibration The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

End of Certificate of Calibration



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CERTIFICATE OF CALIBRATION

Certificate No: WS-03052021
Page 1 of 2 pages

Measurement Item : Cup anemometer with data logger.

Manufacturer : Data logger: Novallnx.
: Cup anemometer: Novallnx.

Model/Type : Data logger: 200-WS-25DL.
: Cup anemometer: WS-02F.

Serial Number : Data logger: A4084.
: Cup anemometer: -

ID No : Data logger: BKK_FSD167.
: Cup anemometer: -

Customer : ALS laboratory group (Thailand) co., Ltd.
: 104 Phatthanasak 40, Phatthanasak Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250
Thailand

Test Conditions : Wind tunnel cross test section area : 900 cm²
: Anemometer frontal area : 100 cm²
: Diameter of mounting pipe : mm
: Blockage ratio of test object : 0.111 [-]

Test Conditions : Air temperature : 24.1 ±0.8 °C
: Air pressure : 1014.4 ±0.4 hPa
: Relative air humidity : 60.1 ±3.5 %RH

Calibration Procedure : Calibration was carried out base on:
: ISO 61400-12-1 ED.1: 2005-Power Performance Measurements of Electricity Producing Wind
Turbines;
: MGSANET Anemometer Calibration Procedure - Version 2: 2009;

Traceability : This calibration documents the traceable to national standard, which realize the unit of
measurements according to the international system of units (SI) through National Institute of
Metrology Thailand (NIMT).

Measurement Date : May 11, 2021.
Issued Date : May 12, 2021.

Calibrated by
☐ Mr. Sorewit Thechaad
☒ Mr. Bongkhod Maithong



Approved Signatory:
Mr. Parinya Booncharoen
Technical Support
and Calibration Manager

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Continuation of Certificate of Calibration Number

Certificate No: WS-03052021

Page 2 of 2 Pages

Result of calibration: ☒ Without adjustment ☐ With adjustment

Calibration in the range of 1 ~ 16 m/s at a calibration interval of 1 m/s.

The results of calibration and associated measurement uncertainties are reported in the table below.

V _{ref} Reading m/s	V _{unc} Reading m/s	Error (m/s)	Uncertainty (%)
2.063	1.9	-0.2	2.5
4.110	4.0	-0.1	1.4
5.97	6.0	0.0	1.4
8.02	8.3	0.3	1.6
9.97	10.4	0.4	0.77
11.98	12.5	0.5	0.92
14.03	14.6	0.6	0.47
16.02	17.0	1.0	0.95
16.02	16.4	0.4	0.85
12.96	13.4	0.4	1.5
10.98	11.2	0.2	1.4
8.98	9.2	0.2	1.6
6.97	7.1	0.1	2.5
5.175	5.1	-0.1	1.2
2.969	3.0	0.0	1.9
1.046	0.8	-0.2	6.3

UUC*: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

Appendix 1: Instrumentations

NO	Sensor	Manufacturer	Model/Type	Calibration Date	Certificate Report Number	Range
1	Pitot static	TD80 INC.	06352145	July 16, 2020	MW-0035-20	5 ~ 30 m/s
2	Precision Differential Pressure Meter	Zuglab	DPM2500	July 16, 2020	MW-0035-20	5 ~ 30 m/s
3	Air velocity transducer (hot wire)	TBI INC.	8455-12	July 20, 2020	MW-0036AA-20	0 ~ 5 m/s
4	Temperature	Zuglab	DGR-THP	March 30, 2021	CL-027-04	-30 ~ 70°C
5	Relative humidity	Zuglab	DGR-THP	March 30, 2021	RH-03032021	0 ~ 100 %RH
6	Atmospheric pressure	Zuglab	DGR-THP	March 30, 2021	BP-01032021	500 ~ 1100 hPa
7	Wind tunnel	CSOIM	MP3300			0 ~ 50 Hz

End of certificate of calibration



CERTIFICATE OF CALIBRATION

Certificate No: WD-02052021

Page 1 of 2 pages

Measurement Item : Wind direction sensor with data logger.

Manufacturer : Data logger: Novatynx.
Wind direction sensor: Novatynx.

Model/Type : Data logger: 200-WS-250L.
Wind direction sensor: WS-02F.

Serial Number : Data logger: A4984.
Wind direction sensor: -

ID No : Data logger: BKK_FS0167.
Cup anemometer: -

Customer : AIS laboratory group (thailand) Co.,Ltd.
104 Phatthanasak 40, Phatthanasak Rd,Khwaeng Suan Luang, Khet Suan Luang,Bangkok 10250 Thailand.

Environmental Condition:

The measurement was carried out in an ambient temperature of (23±3)°C and relative humidity of (40±10)%.

Measurement Method:

The wind direction sensor calibration according to comparison method with reference angle measurement electronic theodolite and line laser is used for axis control. The measurement were taken at 45° intervals in clockwise and counterclockwise directions.

Note: The UUC was warmed up for 1 hour prior to the calibration being performed

Traceability:

The measurement results are traceable to the international system of units (SI) through Certificate No.: CG563-07-0045, Certificate No.: KWS63/0044.

Measurement Date : May 12, 2021.

Issued Date : May 12, 2021.

Performed by
☐ Mr. Soravit Thachalad
☒ Mr. Bongkoch Muthong



Approved Signatory: _____

Mr. Parinya Booncharoen,
Technical Support
and Calibration Manager

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Continuation of Certificate of Calibration Number

Certificate No: WD-02052021

Pages 2 of 2 pages

Result of calibration: ☐ Without adjustment ☒ With adjustment.

Calibration in the range of 0 - 360 ° at a calibration interval of 45°.

The results of calibration and associated measurement uncertainties are reported in table below.

NO	Turning Direction	Nominal Angle (°)	Standard Reading (°)	UUC* Reading (°)	Error (°)	Uncertainty ±(°)
1	Clockwise	0/360	360	359	-1	3.0
2		45	45	44	-1	3.0
3		90	90	88	-2	3.0
4		135	135	133	-2	3.0
5		180	180	179	-1	3.0
6		225	225	227	2	3.0
7		270	270	273	3	3.0
8		315	315	318	3	3.0
9	Counter Clockwise	0/360	360	359	-1	3.0
10		45	46	44	-1	3.0
11		90	90	88	-2	3.0
12		135	135	133	-2	3.0
13		180	180	180	0	3.0
14		225	225	227	2	3.0
15		270	270	273	3	3.0
16		315	315	318	3	3.0

UUC*: Unit Under Calibration The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

End of Certificate of Calibration



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CERTIFICATE OF CALIBRATION

Certificate No: WS-02052021

Page 1 of 2 pages

Measurement Item : Cup anemometer with data logger.

Manufacturer : Data logger: Novasynx.
: Cup anemometer: Novasynx.

Model/Type : Data logger: 200-WS-251.B
: Cup anemometer: WS-02P.

Serial Number : Data logger: A5263.
: Cup anemometer: -

ID No : Data logger: BKK_F30910.
: Cup anemometer: -

Customer : ALS laboratory group (Thailand) co., ltd.
: 104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10260 Thailand.

Test Conditions : Wind tunnel cross test section area 900 cm²
: Anemometer frontal area 100 cm²
: Diameter of mounting pipe mm
: Blockage ratio of test object 0.111 [-]

Test Conditions : Air temperature 22.9 ±0.8 °C
: Air pressure 1015.8 ±0.4 hPa
: Relative air humidity 37.0 ±3.5 %RH

Calibration Procedure : Calibration was carried out based on:
: ICC 61400-12-1 ED.1: 2005-Power Performance Measurements of Electricity Producing Wind Turbines.
: MEASNET Anemometer Calibration Procedure - Version 2: 2009.

Traceability : This calibration documents the traceable to national standard, which realize the unit of measurements according to the international system of units (SI) through National Institute of Metrology Thailand (NIMT).

Measurement Date : May 06, 2021.
Issued Date : May 11, 2021.

Calibrated by
☐ Mr. Sornwit Thacholad
☒ Mr. Bongdech Malithong



Approved Signatory:
Mr. Panyee Booncharoen
Technical Support
and Calibration Manager

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Continuation of Certificate of Calibration Number

Certificate No: WS-02052021

Page 2 of 2 Pages

Result of calibration: ☒ Without adjustment ☐ With adjustment

Calibration in the range of 1 - 16 m/s at a calibration interval of 1 m/s.

The results of calibration and associated measurement uncertainties are reported in the table below.

V ₁₀ Reading m/s	V ₁₀ Reading m/s	Error (m/s)	Uncertainty (%)
2.030	1.7	-0.3	2.6
4.036	3.9	-0.1	1.2
6.05	6.0	0.0	0.98
7.99	8.0	0.0	0.76
10.00	10.2	0.2	0.67
12.00	12.3	0.3	0.69
14.04	14.4	0.4	0.62
15.97	16.6	0.6	0.86
14.98	15.3	0.3	0.49
12.99	13.3	0.3	0.61
11.00	11.1	0.1	0.80
9.00	9.1	0.1	0.78
6.99	7.0	0.0	1.0
5.066	5.0	-0.1	1.2
2.969	2.8	-0.2	2.2
1.066	0.7	-0.4	6.9

UUC*: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

Appendix 1: Instrumentations

NO	Sensor	Manufacturer	Model/Type	Calibration Date	Certificate Report Number	Range
1	Pitot static	ICSD INC.	06352145	July 16, 2020	MW-0035-20	5 - 30 m/s
2	Precision Differential Pressure Meter	Ziegler	DFM2500	July 16, 2020	MW-0035-20	5 - 30 m/s
3	Air velocity transducer (hot wire)	TSI INC.	8455-12	July 20, 2020	MW-0036AA-20	0 - 5 m/s
4	Temperature	Ziegler	DSR-T1P	March 30, 2021	CL-027-64	-30 - 70°C
5	Relative humidity	Ziegler	DSR-T1P	March 30, 2021	PR-03032021	0 - 100 %RH
6	Atmospheric pressure	Ziegler	DSR-T1P	March 30, 2021	BP-01032021	503 - 1100 hPa
7	Wind tunnel	GSSOM	MP3300	-	-	0 - 50 Hz

End of certificate of calibration



CERTIFICATE OF CALIBRATION

Certificate No: WD-01052021

Page 1 of 2 pages

Measurement Item : Wind direction sensor with data logger.

Manufacturer : Data logger: Novatynx.
: Wind direction sensor: Novatynx.

Model/Type : Data logger: 200-WS-25LB.
: Wind direction sensor: WS-02P.

Serial Number : Data logger: A5263.
: Wind direction sensor: -

ID No : Data logger: BKK_FS0910.
: Cup anemometer: -

Customer : ALS laboratory group (Thailand) Co.,Ltd.
104 Phatthanasak 40, Phatthanasak Rd,Khwaeng Suan Luang, Khet Suan Luang,Bangkok 10250
Thailand.

Environmental Condition:

The measurement was carried out in an ambient temperature of (23±3)°C, and relative humidity of (40±10)%.

Measurement Method:

The wind direction sensor calibration according to comparison method with reference angle measurement electronic theodolite and the laser is used for axis control. The measurement were taken at 45° intervals in clockwise and counterclockwise directions.

Note: The UUC was warmed up for 1 hour prior to the calibration being performed

Traceability:

The measurement results are traceable to the international system of units (SI) through Certificate No: CC563-07-0045.
Certificate No: KWS63/0044.

Measurement Date : May 11, 2021.

Issued Date : May 12, 2021.

Performed by
☐ Mr. Soravit Thachad
☒ Mr. Bongchoch Malithong



Approved Signatory

[Signature]

Mr. Parinya Booncharoen,
Technical Support
and Calibration Manager

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Continuation of Certificate of Calibration Number

Certificate No: WD-01052021

Pages 2 of 2 pages

Result of calibration: ☐ Without adjustment ☒ With adjustment

Calibration in the range of 0 - 360 ° at a calibration interval of 45°.

The results of calibration and associated measurement uncertainties are reported in table below.

NO	Turning Direction	Nominal Angle (°)	Standard Reading (°)	UUC* Reading (°)	Error (°)	Uncertainty ±(°)
1	Clockwise	0/360	360	359	-1	3.0
2		45	45	41	-4	3.0
3		90	90	87	-3	3.0
4		135	135	134	-1	3.0
5		180	180	180	0	3.0
6		225	225	227	2	3.0
7		270	270	272	2	3.0
8		315	315	319	4	3.0
9	Counter Clockwise	0/360	360	359	-1	3.0
10		45	45	41	-4	3.0
11		90	90	87	-3	3.0
12		135	135	134	-1	3.0
13		180	180	180	0	3.0
14		225	225	227	2	3.0
15		270	270	272	2	3.0
16		315	315	319	4	3.0

UUC*: Unit Under Calibration The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor
k=2 providing a level of confidence of approximately 95%

End of Certificate of Calibration



CERTIFICATE OF CALIBRATION

Certificate No.: CL-028-64

Page 1 of 2

Equipment Name : Data Logger with Temperature

Sensor

Manufacturer : Novalynx

Model : 200-WS-25LB

Serial No. : A5263

ID No. : BKK_FS0910

Customer

Name : ALS laboratory group (thailand) Co.,Ltd
Address : 104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Suan Luang, Khet Suan Luang,
Bangkok 10250 Thailand.

Received date : 30 Apr 2021

Calibration date : 07 May 2021

Issue date : 11 May 2021

Reference Used During Calibration

1. Standard Temperature Probe Model : STS-100 A500,

Serial No. : 667682-09, Due date : 25 Mar 2022

2. Digital Temperature Indicator Model : DTI-1000-A MK

II, Serial No. : 671407-00591 Due date : 20 May 2021

Calibration Condition

Temperature : (23±3) °C

Relative Humidity : (55±15)%

Calibration Procedure

The temperature calibration was done by In-House
calibration method as WI-CL-001 according to
comparison method with standard digital temperature
indicator and standard temperature probe. The
temperature scale use was based on ITS-90.

Traceability

The measurement results are traceable to the
international system of units (SI) through National
Institute of Metrology Thailand (NIMT) Certificate
number : TT-0036-21, Certificate number : ER-0071-
20

Calibrated by

☐ Mr. Sorawit Thachalad
☒ Mr. Bongkoch Malithong



Approved Signatory:

Mr. Parinya Booncharoen
Technical Support
And Calibration Manager



63/14-15,67/35-36, Soi Petchkasem 7/71, Petchkasem Rd,
Walthapra, Bangkokyai, Bangkok 10600 Thailand.

TEL: (66) 02-8680812#13 Fax: (66) 02-8680860 www.jiranatee.com



Certificate No. : CL-028-64
Page 2 of 2

Result of Calibration : ☒ Without Adjustment ☐ With Adjustment

Calibration Range: 20°C - 40 °C

Function:

This equipment was connected with temperature sensor Model : HMP60 S/N : N0330786

Dimension : Diameter 12mm. Length 80 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
60	20.045	19.6	-0.4	0.19
60	25.041	24.6	-0.4	0.19
60	30.035	29.5	-0.5	0.19
60	35.027	34.5	-0.5	0.19
60	40.020	39.4	-0.6	0.19

UUC* : Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

★ End of Certificate ★



63/14-15,67/35-36, Soi Petchkasem 7/71, Petchkasem Rd,
Walthapra, Bangkokyai, Bangkok 10600 Thailand.

TEL: (66) 02-8680812#13 Fax: (66) 02-8680860 www.jiranatee.com

CALIBRATION REPORT

Calibration No. : RH-01052021

Page 1 of 1 Pages

Measurement Item : Relative humidity with data logger.

Manufacturer : Data logger: Novolynx.
Relative humidity sensor: Novolynx.

Model/Type : Data logger: 200-WS-25LB.
Relative humidity sensor: HMP60.

Serial Number : Data logger: A5263.
Relative humidity sensor: N0330786.

ID No : Data logger: BKK_FSO910.
Relative humidity sensor: -

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

Environmental Condition:

The measurement was carried out in an ambient temperature of (25±3)°C, and relative humidity of (50±15)%.

Measurement Method:

The Relative humidity with display, Unit Under Calibration (UUC) was calibrated by comparison method with the equilibrium of standard salt solution CH₃COOK: Potassium Acetate, Mg(NO₃)₂: Magnesium Nitrate, KCl: Potassium Chloride to determine the errors.

Measurement Date : May 07, 2021

Issued Date : May 11, 2021

Measurement Results:

The results of calibration are reported in table below.

Standard salt solution.	Standard (%RH)	UUC (Measured)	Error
CH ₃ COOK: Potassium Acetate	22.51	22.5	0.0
Mg(NO ₃) ₂ : Magnesium Nitrate	52.89	51.3	-1.6
KCl: Potassium Chloride	84.34	81.8	-2.5

Performed by

- ☐ Mr. Soravit Thachalad
☒ Mr. Bongkoch Mallithong



Approved Signatory

Mr. Parinya Booncharoen.
Technical Support
and Calibration Manager

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CERTIFICATE OF CALIBRATION

Certificate No: WS-03012022

Page 1 of 2 pages

Measurement Item : Cup anemometer with data logger.

Manufacturer : Data logger: Novatlynx
: Cup anemometer: Novatlynx

Model/Type : Data logger: 110-WS-26DL-D
: Cup anemometer: WS-02F

Serial Number : Data logger: A5443
: Cup anemometer: WSD-002

ID No : Data logger: BKK_FS0975
: Cup anemometer: -

Customer : ALS laboratory group (Thailand) co., Ltd
: 104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250
Thailand.

Test Conditions : Wind tunnel cross test section area 900 cm²
: Anemometer frontal area 100 cm²
: Diameter of mounting pipe mm
: Blockage ratio of test object 0.111 [-]

Test Conditions : Air temperature 24.1 ±0.8 °C
: Air pressure 1010.9 ±0.4 hPa
: Relative air humidity 52.4 ±3.5 %RH

Calibration Procedure : Calibration was carried out base on:
ISO 61400-12-1 ED.1: 2005 Power Performance Measurements of Electricity Producing Wind
Turbines;
MEASNET Anemometer Calibration Procedure - Version 2: 2009;

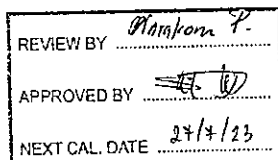
Traceability : This calibration documents the traceable to national standard, Which realize the unit of
measurements according to the International system of units (SI) through National Institute of
Metrology Thailand (NIMT).

Measurement Date : JAN 26, 2022.
Issued Date : JAN 31, 2022.

Calibrated by
☒ Mr. Sorewit Thachad
☐ Miss Orathai Wiwatawitya



Approved Signatory:
Mr. Panyee Boonchaisoen
Calibration Department Manager



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Continuation of Certificate of Calibration Number

Certificate No: WS-03012022

Page 2 of 2 Pages

Result of calibration: ☒ Without adjustment ☐ With adjustment

Calibration in the range of 1 - 16 m/s at a calibration interval of 1 m/s.

The results of calibration and associated measurement uncertainties are reported in the table below.

V _{DIS} Reading m/s	V _{IND} Reading m/s	Error (m/s)	Uncertainty (%)
2.076	1.9	-0.2	2.6
4.105	4.0	-0.1	1.2
6.00	6.0	0.0	0.95
8.01	8.0	0.0	0.84
10.02	10.1	0.1	0.87
12.02	11.8	-0.2	2.4
13.99	14.1	0.1	0.53
16.99	16.2	0.2	0.42
14.98	15.2	0.2	1.2
12.99	13.0	0.0	0.77
11.01	11.1	0.1	0.48
9.02	9.1	0.1	0.87
6.96	7.0	0.0	1.2
5.145	5.1	0.0	0.96
3.002	3.0	0.0	1.6
1.028	0.8	-0.2	4.8

UUC*: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of
confidence of approximately 95%.

Appendix 1: Instrumentations

NO	Sensor	Manufacturer	Model/Type	Calibration Date	Certificate Report Number	Range
1	Prot static	TECSTO INC.	06352145	Aug 07, 2021	MW-0034-21	5 - 30 m/s
2	Precision Differential Pressure Meter	Zoglab	DPH2500	Aug 07, 2021	MW-0034-21	5 - 30 m/s
3	Air velocity transducer (hot wire)	TSI INC.	8455-12	Aug 08, 2021	MW-0035-21	0 - 5 m/s
4	Temperature	Zoglab	DSR-THP	March 30, 2021	CL-027-64	-30 - 70°C
5	Relative humidity	Zoglab	DSR-TIH	March 30, 2021	RH-03032021	0 - 100 %RH
6	Atmospheric pressure	Zoglab	DSR-THP	March 30, 2021	BP-01032021	500 - 1100 hPa
7	Wind tunnel	CS50M	MP3303	-	-	0 - 50 Hz

End of certificate of calibration



CERTIFICATE OF CALIBRATION

Certificate No.: WD-03012022

Page 1 of 2 pages

Measurement Item : Wind direction sensor with data logger.

Manufacturer : Data logger: Novalynx.
: Wind direction sensor: Novalynx.

Model/Type : Data logger: 11U-WS-25DL-0
: Wind direction sensor: WS-02P

Serial Number : Data logger: A5443
: Wind direction sensor: WSD-002

ID No : Data logger: 8KK F80975
: Wind direction sensor: -

Customer : ALS laboratory group (Thailand) Co.,Ltd
104 Phatthanakan 40, Phatthanakan Rd,Khwaeng Suan Luang, Khat Suan Luang, Bangkok 10250
Thailand.

Environmental Condition:

The measurement was carried out in an ambient temperature of (23±3) °C, and relative humidity of (40±10) %.

Measurement Method:

The wind direction sensor calibration according to comparison method with reference angle measurement electronic theodolite and line laser is used for axis control. The measurement were taken at 45° intervals in clockwise and counterclockwise directions.

Note: The UUC was warmed up for 1 hour prior to the calibration being performed

Traceability:

The measurement results are traceable to the International system of units (SI) through Certificate No.: Q21086014, Certificate No.: KWS64/0025.

Measurement Date : JAN 25, 2022.

Issued Date : JAN 31, 2022.

Performed by

- ☒ Mr. Sorawit Thachalad
☐ Miss Orathai Wivattwitaya



Approved Signatory

[Signature]

Mr. Porinya Booncharoen,
Calibration Department Manager

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Continuation of Certificate of Calibration Number

Certificate No: WD-03012022

Pages 2 of 2 pages

Result of calibration: ☐ Without adjustment ☒ With adjustment.
Calibration in the range of 0 - 360 ° at a calibration interval of 45°.

The results of calibration and associated measurement uncertainties are reported in table below.

NO	Turning Direction	Nominal Angle (°)	Standard Reading (°)	UUC* Reading (°)	Error (°)	Uncertainty ±(°)
1	Clockwise	0/360	0	0	0	3.0
2		45	45	42	-3	3.0
3		90	90	88	-2	3.0
4		135	135	133	-2	3.0
5		180	180	180	0	3.0
6		225	225	227	2	3.0
7		270	270	272	2	3.0
8		315	315	318	3	3.0
9	Counter Clockwise	0/360	0	0	0	3.0
10		45	45	42	-3	3.0
11		90	90	88	-2	3.0
12		135	135	133	-2	3.0
13		180	180	180	0	3.0
14		225	225	227	2	3.0
15		270	270	272	2	3.0
16		315	315	318	3	3.0

UUC*: Unit Under Calibration The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

End of Certificate of Calibration



CALIBRATION REPORT

Calibration No. : RH-03012022

Page 1 of 1 Pages

Measurement Item : Relative humidity with data logger.

Manufacturer : Data logger: Novatynx.
: Relative humidity sensor: Novatynx.

Model/Type : Data logger: 110-WS-25DL-D
: Relative humidity sensor: HMP60

Serial Number : Data logger: A5443
: Relative humidity sensor: R1131111

ID No : Data logger: BKK_FS0975
: Relative humidity sensor: -

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

Environmental Condition:

The measurement was carried out in an ambient temperature of (25±3)°C, and relative humidity of (50±15)%.

Measurement Method:

The Relative humidity with data logger, Unit Under Calibration (UUC) was calibrated by comparison method with the equilibrium of standard salt solution CH₃COOK: Potassium Acetate, Mg(NO₃)₂: Magnesium Nitrate, KCl: Potassium Chloride to determine the errors.

Measurement Date : JAN 24, 2022

Issued Date : JAN 25, 2022

Measurement Results:

The results of calibration are reported in table below.

Standard salt solution.	Standard (%RH)	UUC(reading)	Error
CH ₃ COOK: Potassium Acetate	22.51	22.1	-0.4
Mg(NO ₃) ₂ : Magnesium Nitrate	52.89	52.5	-0.4
KCl: Potassium Chloride	84.34	84.2	-0.1

Performed by

- ☐ Mr. Soravit Thachalad
☒ Miss Orathai Vithawatwitya



Approved Signatory: _____

Mr. Parinya Booncharoen.
Calibration Department Manager

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CALIBRATION REPORT

Calibration Number. : RG-03012022

Page 1 of 2 Pages

Measurement Item : Rain gauge with data logger.

Manufacturer : Data logger: Novatynx.
: Rain gauge: Novatynx.

Model/Type : Data logger: 110-WS-25DL-D
: Rain gauge: 110-WS-25RG

Serial Number : Data logger: A5443
: Rain gauge: RG-002

ID NO : BKK_FS0975

Customer : ALS laboratory group (Thailand) co., ltd.
: 104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang,
Bangkok 10250, Thailand

Environmental Condition:

The measurement was carried out in an ambient temperature of (26±3)°C, and relative humidity of (50±15)%.

Measurement Method:

The Rain gauge, Unit Under Calibration (UUC) was calibrated by Precision reference bottle with flow adjuster at low rate 0.6 mm per minute or 1 tipping every 20 seconds. The tipping number was determined by procedures below.

- Obtain rain gauge inlet area:
Rain gauge precise diameter in cm = Diameter/2 = R (radius)
Rain gauge area= πR^2 3.14 (UUC diameter=20.3 cm, UUC radius=10.15 cm)
Rain gauge area= 323.6 cm².
- Obtain theoretical correct rain gauge answer (number of tipplings) using 323.6 cm² inlet area and 0.5 L of rain.
 - 10,000 cm³ / 323.6 cm² inlet area = 30.90 (rain gauge area = 1/30.90 of square meter)
 - 30.90 * 0.5 L volume=15.45 mm (mm of rain over 1 m² surface) 500 ml of rain volume on the rain gauge area = 15.45 mm of rain.
 - Number of tipping=15.45 / 0.25 mm= 62 tipplings.

Note: Rain gauge is fully cleaned and leveling prior the calibration performed.

Measurement Date : JAN 28, 2022

Issued Date : JAN 31, 2022

Performed by

- ☒ Mr. Soravit Thachalad
☐ Miss Orathai Vithawatwitya



Approved Signatory: _____

Mr. Parinya Booncharoen.
Calibration Department Manager

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63/14-15,67/35-36, Soi Petchkasem7,7/1, Petchkasem Rd,
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Tel.: (66) 02-8680812#13 Fax.: (66) 02-8680860 www.jiranatee.com

Continuation of Calibration of Calibration Number

Calibration Number: RG-03012022

Page 2 of 2 Pages

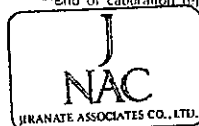
Result of Calibration: ☒ Without Adjustment ☐ With Adjustment

The results of calibration are reported in table below.

Quantity of H ₂ O (ml)	Determined Tipping	Tipping count	Acceptable Tipping count
500	62	60	60 - 64
500	62	61	60 - 64
500	62	61	60 - 64
500	62	62	60 - 64
500	62	61	60 - 64

Remark: The procedure is made to verify the correct reading of the Unit under Calibration rain gauge when a precise volume of water falls into its cone. We suggest that the number of tipping should be within $\pm 2\%$ different from the 62 (aping incorrect range. 60-64 tipping) it means that the rain gauge meets the manufacturer acceptable limit.

End of calibration report



Jiranatee Associates Co., Ltd.
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Accredited calibration laboratory
ISO/IEC 17025:2017
Pressure measurement laboratory
NSC-TISI-TIS 17025
CALIBRATION 0367

CERTIFICATE OF CALIBRATION

Certificate No. : CL-004-65

Page 1 of 2 Pages

MEASUREMENT ITEM : Digital barometer
MANUFACTURER : Novalynx
MODEL/TYPE : 110-WS-258P
SERIAL NUMBER : A5443
ID NUMBER : BKK_F50975
CUSTOMER : ALS laboratory group (Thailand) co., Ltd.
104 Phatthanakan 40, Phatthanakan Rd,
Khwaeng Suan Luang, Khet Suan Luang,
Bangkok 10250 Thailand
RECEIVED DATE : 12 Jan 2022
MEASUREMENT DATE : 29 Jan 2022
ISSUE DATE : 31 Jan 2022

Calibration procedure:
The pressure calibration was done by In-house calibration method as WI-CL-003 according to comparison method with Digital pressure calibrator based on DKD-R 6-1

Traceability:
The measurement results are traceable to the international system of units (SI) through MENSOR which complies with the requirements of ISO/IEC17025:2017, ANSI/NCSL Z540-1 via Certificate number: 201479

The reported uncertainty is based on a standard uncertainty multiplied by a coverage $k=2$, providing a level of confidence of approximately 95%.

CONDITION OF THIS RESULT OF CALIBRATION:

1. Reference Standard Instrument:

Instrument	Model	Serial No.	Certificate No.	Due Date
Absolute Pressure Transducer	CPG2500	410018L1	201479	13 Sep 2022

2. The UUC* was installed in vertical orientation above reference standard instrument and center of UUC* was used as the reference level.

3. Calibration conditions:

Pressure transmitting medium : Air
 $\rho_f(20^\circ\text{C}, 1\text{bar})$: 1.19 kg/m³
 Δh : -0.080 m
 t_{amb} : (23 \pm 2) $^\circ\text{C}$
 p_{amb} : 1009.5 mbar

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

Calibrated by:

☒ Mr. Sorawit Thachalad
☐ Miss Oratai Wiwatwittaya



Approved signature:
Mr. Parinya Booncharoen
Calibration Department Manager

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MEASUREMENT RESULTS : ☒ Without adjustment ☐ With adjustment

CALIBRATION IN THE RANGE OF : 950 – 1050 mbar

The results of calibration and associated measurement uncertainties are reported in the table below.

STD (mbar)	UUC* (mbar)	Error (mbar)	Uncertainty(k=2) (mbar)
950.17	950.838	0.664	0.88
970.13	970.514	0.385	0.57
990.10	990.493	0.389	0.55
1009.98	1010.054	0.080	0.21
1029.91	1029.743	-0.171	0.28
1049.79	1049.531	-0.263	0.36

Note: UUC* Unit Under Calibration

End of certificate



CERTIFICATE OF CALIBRATION

Certificate No.: CL-003-65
Page 1 of 2

Equipment Name: Data Logger with Temperature
Sensor

Manufacturer: Novalynx
Model: 110-WS-25DL-D
Serial No.: A5443
ID No.: BKK_FS0975

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

Received date: 12 JAN 2022
Calibration date: 24 JAN 2022
Issue date: 25 JAN 2022

Reference Used During Calibration
1.Standard Temperature Probe Model: STS-100 A500,
Serial No.: 667682-09, Due date: 25 Mar 2022
2.Digital Temperature Indicator Model: DTI-1000-A MK
II, Serial No.: 671407-00591 Due date: 04 June 2022

Calibration Condition
Temperature: (23±3)°C
Relative Humidity: (55±15)%

Calibration Procedure
The temperature calibration was done by In-House
calibration method as WI-CL-001, according to
comparison method with standard digital temperature
indicator and standard temperature probe. The
temperature scale use was based on ITS-90.

Traceability
The measurement results are traceable to the
international system of units (SI) through National
Institute of Metrology Thailand (NIMT) Certificate
number: TT-0036-21, Certificate number: ER-0032-
21

Calibrated by
☐ Mr. Sorawit Thachalad
☒ Miss Orathai Wiwatwittaya



Approved Signatory:
Mr. Parinya Booncharoen
Calibration Department Manager



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Certificate No.: CL-003-65
Page 2 of 2

Result of Calibration: ☒ Without Adjustment ☐ With Adjustment

Calibration Range: 20-40 °C

Function:

This equipment was connected with temperature sensor Model : HMP60 S/N : R1131111.

Dimension : Diameter 12mm. Length 80 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
60	20.053	19.8	-0.3	0.099
60	25.001	24.6	-0.4	0.099
60	29.991	29.7	-0.3	0.099
60	34.980	34.5	-0.5	0.099
60	39.960	39.5	-0.5	0.099

UUC*: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

* End of Certificate *



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CERTIFICATE OF CALIBRATION

Certificate No: WS-02052021

Page 1 of 2 pages

Measurement Item : Cup anemometer with data logger.

Manufacturer : Data logger: Novaslynx.
Cup anemometer: Novaslynx.

Model/Type : Data logger: 200-WS-25LB
Cup anemometer: WS-02F.

Serial Number : Data logger: A52d3.
Cup anemometer: -

ID No : Data logger: BKK_P50210.
Cup anemometer: -

Customer : ALS laboratory group (Thailand) co., Ltd.
104 Phatthanakan 40, Phatthanakan Rd, Khwasang Suan Luang, Khet Suan Luang, Bangkok 10260 Thailand.

Test Conditions : Wind tunnel cross test section area 900 cm²
Anemometer frontal area 100 cm²
Diameter of mounting pipe - mm
Blockage ratio of test object 0.111 [-]

Test Conditions : Air temperature 22.9 ±0.8 °C
Air pressure 1015.8 ±0.4 hPa
Relative air humidity 37.5 ±3.6 %RH

Calibration Procedure : Calibration was carried out based on,
IEC 61400-12-1 ED.1: 2005-Power Performance Measurements of Electricity Producing Wind
Turbines;
IEASNDT Anemometer Calibration Procedure - Version 2: 2009.

Traceability : This calibration documents the traceable to national standard, which realize the unit of
measurements according to the International system of units (SI) through National Institute of
Metrology Thailand (NIMT).

Measurement Date : May 06, 2021.
Issued Date : May 11, 2021.

Calibrated by
☐ Mr. Sorsak Thachalad
☒ Mr. Bongkroch Mallhong



Approved Signatory:
Mr. Parinya Booncharoen
Technical Support
and Calibration Manager

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Continuation of Certificate of Calibration Number

Certificate No: WS-02052021
Page 2 of 2 Pages

Result of calibration: ☒ Without adjustment ☐ With adjustment

Calibration in the range of 1 - 16 m/s at a calibration interval of 1 m/s.

The results of calibration and associated measurement uncertainties are reported in the table below.

V _{std} Reading m/s	V _{std} Reading m/s	Error (m/s)	Uncertainty (%)
2.030	1.7	-0.3	2.6
4.036	3.9	-0.1	1.2
6.05	6.0	0.0	0.98
7.99	8.0	0.0	0.76
10.00	10.2	0.2	0.67
12.00	12.3	0.3	0.69
14.94	14.4	0.4	0.52
15.97	16.6	0.6	0.85
14.98	15.3	0.3	0.49
12.99	13.3	0.3	0.61
11.00	11.1	0.1	0.80
9.00	9.1	0.1	0.78
6.99	7.0	0.0	1.0
5.066	5.0	-0.1	1.2
2.969	2.8	-0.2	2.2
1.066	0.7	-0.4	6.9

UUC: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

Appendix 1: Instrumentations

NO	Sensor	Manufacturer	Model/Type	Calibration Date	Certificate Report Number	Range
1	Pitot static	TESTO INC.	05352145	July 16, 2020	MW-C035-20	5 - 30 m/s
2	Precision Differential Pressure Meter	Ziegler	DPM2500	July 16, 2020	MW-C035-20	5 - 30 m/s
3	Air velocity transducer (hot wire)	TSI INC.	8445-12	July 20, 2020	MW-0035AA-20	0 - 5 m/s
4	Temperature	Ziegler	DSR-TIP	March 30, 2021	CL-027-64	-30 - 70°C
5	Relative humidity	Ziegler	DSR-TIP	March 30, 2021	PH-03032021	0 - 100 %RH
6	Atmospheric pressure	Ziegler	DSR-TIP	March 30, 2021	BP-01032021	500 - 1100 hPa
7	Wind tunnel	CSM	MP3300	-	-	0 - 50 Hz

End of certificate of calibration



CERTIFICATE OF CALIBRATION

Certificate No: WD-01052021

Page 1 of 2 pages

Measurement Item : Wind direction sensor with data logger.

Manufacturer : Data logger: Novolynx.
Wind direction sensor: Novolynx.

Model/Type : Data logger: 200-WS-25LB.
Wind direction sensor: WS-02F.

Serial Number : Data logger: A5263.
Wind direction sensor: -

ID No : Data logger: BKK_FS0910.
Cup anemometer: -

Customer : AIS laboratory group (thailand) Co.,Ltd.
104 Phatthanasak 40, Phatthanasak Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10260 Thailand.

Environmental Condition:

The measurement was carried out in an ambient temperature of (25±3)°C and relative humidity of (40±10)%.

Measurement Method:

The wind direction sensor calibration according to comparison method with reference angle measurement electronic theodolite and the laser is used for axis control. The measurement were taken at 45° intervals in clockwise and counterclockwise directions.

Note: The UUC was warmed up for 1 hour prior to the calibration being performed

Traceability:

The measurement results are traceable to the international system of units (SI) through Certificate No: CC663-07-0046, Certificate No: KW/S63/0044.

Measurement Date : May 11, 2021.

Issued Date : May 12, 2021.

Performed by
☐ Mr. Sorawit Thachaiad
☒ Mr. Bongkosh Malithong



Approved Signatory: _____

Mr. Panyia Booncharoen,
Technical Support
and Calibration Manager

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Continuation of Certificate of Calibration Number

Certificate No: WD-01052021
Page 2 of 2 pages

Result of calibration: ☐ Without adjustment ☒ With adjustment.

Calibration in the range of 0 - 360 ° at a calibration interval of 46°.

The results of calibration and associated measurement uncertainties are reported in table below.

NO	Turning Direction	Nominal Angle (°)	Standard Reading (°)	UUC* Reading (°)	Error (°)	Uncertainty ±(°)
1	Clockwise	0/360	360	359	-1	3.0
2		45	45	41	-4	3.0
3		90	90	87	-3	3.0
4		135	135	134	-1	3.0
5		180	180	180	0	3.0
6		225	225	227	2	3.0
7		270	270	272	2	3.0
8		315	315	319	4	3.0
9	Counter Clockwise	0/360	360	359	-1	3.0
10		45	45	41	-4	3.0
11		90	90	87	-3	3.0
12		135	135	134	-1	3.0
13		180	180	180	0	3.0
14		225	225	227	2	3.0
15		270	270	272	2	3.0
16		315	315	319	4	3.0

UUC*: Unit Under Calibration The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

End of Certificate of Calibration



CERTIFICATE OF CALIBRATION

Certificate No. : CL-028-64
Page 1 of 2

Equipment Name : Data Logger with Temperature
Sensor

Manufacturer : Novalynx
Model : 200-WS-25LB
Serial No. : A5263
ID No. : BKK_FS0910

Customer
Name : ALS laboratory group (thailand) Co.,Ltd
Address : 104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Suan Luang, Khet Suan Luang,
Bangkok 10250 Thailand.

Received date : 30 Apr 2021
Calibration date : 07 May 2021
Issue date : 11 May 2021

Reference Used During Calibration
1. Standard Temperature Probe Model : STS-100 A500,
Serial No. : 667682-09, Due date : 25 Mar 2022
2. Digital Temperature Indicator Model : DTI-1000-A MK
II, Serial No.: 671407-00591 Due date : 20 May 2021

Calibration Condition
Temperature : (23±3)°C
Relative Humidity : (55±15)%

Calibration Procedure
The temperature calibration was done by In-House
calibration method as WI-CL-001 according to
comparison method with standard digital temperature
indicator and standard temperature probe. The
temperature scale use was based on ITS-90.

Traceability
The measurement results are traceable to the
international system of units (SI) through National
Institute of Metrology Thailand (NIMT) Certificate
number : TT-0036-21, Certificate number : ER-0071-
20

Calibrated by
☐ Mr. Sorawit Thechalad
☒ Mr. Bongkoch Malithong



Approved Signatory:
Mr. Parinya Booncharoen
Technical Support
And Calibration Manager



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Certificate No. : CL-028-64

Page 2 of 2

Result of Calibration: ☒ Without Adjustment ☐ With Adjustment

Calibration Range: 20°C - 40 °C

Function:

This equipment was connected with temperature sensor Model : HMP60 S/N : NO330786

Dimension : Diameter 12mm. Length 80 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
60	20.045	19.6	-0.4	0.19
60	25.041	24.6	-0.4	0.19
60	30.035	29.5	-0.5	0.19
60	35.027	34.5	-0.5	0.19
60	40.020	39.4	-0.6	0.19

UUC* : Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

*** End of Certificate ***



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CALIBRATION REPORT

Calibration No. : RI-01052021

Page 1 of 1 Pages

Measurement Item : Relative humidity with data logger.

Manufacturer : Data logger: Novolynx.
Relative humidity sensor: Novolynx.

Model/Type : Data logger: 200-WS-25LB.
Relative humidity sensor: HMP60.

Serial Number : Data logger: A5263.
Relative humidity sensor: NO330786.

ID No : Data logger: BKK_FS0910.
Relative humidity sensor: -

Customer : ALS laboratory group (Thailand) co. ltd.
1014 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250 Thailand.

Environmental Condition:

The measurement was carried out in an ambient temperature of (25±3)°C, and relative humidity of (50±10)%.

Measurement Method:

The Relative humidity with display, Unit Under Calibration (UUC) was calibrated by comparison method with the equilibrium of standard salt solution CH₃COOK: Potassium Acetate, Mg(NO₃)₂: Magnesium Nitrate, KCl: Potassium Chloride to determine the errors.

Measurement Date : May 07, 2021

Issued Date : May 11, 2021

Measurement Results:

The results of calibration are reported in table below.

Standard salt solution.	Standard (%RH)	UUC(Reading)	Error
CH ₃ COOK: Potassium Acetate	22.51	22.6	0.0
Mg(NO ₃) ₂ : Magnesium Nitrate	52.89	51.3	-1.6
KCl: Potassium Chloride	84.34	81.8	-2.5

Performed by

- ☐ Mr. Sorawit Thachalad
☒ Mr. Bongkroh Mallithong



Approved Signatory

Mr. Parinya Booncharoen,
Technical Support
and Calibration Manager

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CERTIFICATE OF CALIBRATION

Certificate No: WS-03032022
Page 1 of 2 pages

Measurement Item : Cup anemometer with data logger.

Manufacturer : Data logger: Novallnx
Cup anemometer: Novallnx

Model/Type : Data logger: 200-WS-25LB
Cup anemometer: WS-02F

Serial Number : Data logger: A4917
Cup anemometer: -

ID No : Data logger: BKK_FSD163
Cup anemometer: -

Customer : ALS laboratory group (Thailand) co., ltd.
104 Phatthanakon 40, Phatthanakon Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250 Thailand

Test Conditions : Wind tunnel cross test section area 900 cm²
Anemometer frontal area 100 cm²
Diameter of mounting pipe - mm
Blockage ratio of test object 0.111 [-]

Test Conditions : Air temperature 26.8 ±0.8 °C
Air pressure 1010.5 ±0.4 hPa
Relative air humidity 41.9 ±3.5 %RH

Calibration Procedure : Calibration was carried out base on:
IEC 61400-12-1 GD.1: 2005-Power Performance Measurements of Electricity Producing Wind Turbines:
MDSNBT Anemometer Calibration Procedure - Version 2: 2009.

Traceability : This calibration documents the traceable to national standard, which realize the unit of measurements according to the international system of units (SI) through National Institute of Metrology Thailand (NIMT).

Measurement Date : MAR 17, 2022.
Issued Date : MAR 21, 2022.

REVIEW BY *Mr. P. P.*
APPROVED BY *[Signature]*
NEXT CAL. DATE 15/9/23

Calibrated by
☒ Mr. Sorawit Thachetad
☐ Miss Orathai Wiatwitayee



Approved Signatory: *[Signature]*
Mr. Parinya Booncharoen
Calibration Department Manager

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Continuation of Certificate of Calibration Number

Certificate No: WS-03032022
Page 2 of 2 Pages

Result of calibration: ☒ Without adjustment ☐ With adjustment
Calibration in the range of 1 - 16 m/s at a calibration interval of 1 m/s.

The results of calibration and associated measurement uncertainties are reported in the table below.

V ₉₅₀ Reading m/s	V ₉₅₀ Reading m/s	Error (m/s)	Uncertainty (%)
2.080	2.0	-0.1	2.7
4.160	4.1	-0.1	1.2
5.99	6.0	0.0	1.1
8.03	8.1	0.1	0.73
9.99	10.2	0.2	0.68
12.00	12.2	0.2	0.73
13.99	14.3	0.3	0.45
16.01	16.5	0.5	0.47
15.00	15.4	0.4	0.41
13.00	13.3	0.3	0.48
10.99	11.1	0.1	0.70
9.00	9.1	0.1	0.82
7.02	7.0	0.0	0.84
5.177	5.2	0.0	0.84
3.009	3.1	0.1	1.4
1.029	0.9	-0.1	4.6

UUC*: Un* Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

Appendix 1: Instrumentations

NO	Sensor	Manufacturer	Model/Type	Calibration Date	Certificate Report Number	Range
1	Pitot static	TCSO INC.	05352145	Aug 07, 2021	MW-0034-21	5 - 30 m/s
2	Precision Differential Pressure Meter	Zoglab	DFM2500	Aug 07, 2021	MW-0034-21	5 - 30 m/s
3	Air velocity transducer (hot wire)	TSH INC.	8455-12	Aug 08, 2021	MW-0035-21	0 - 5 m/s
4	Temperature	Zoglab	DSR-THP	March 30, 2021	CL-027-64	-30 - 70 °C
5	Relative humidity	Zoglab	DSR-THP	March 30, 2021	RH-03032021	0 - 100 %RH
6	Atmospheric pressure	Zoglab	DSR-THP	March 30, 2021	BP-01032021	500 - 1100 hPa
7	Wind tunnel	CS&SOM	MP3300	-	-	0 - 50 Hz

End of certificate of calibration



CERTIFICATE OF CALIBRATION

Certificate No: WD-03032022
Page 1 of 2 pages

Measurement Item : Wind direction sensor with data logger.

Manufacturer : Data logger: Novolynx.
: Wind direction sensor: Novolynx.

Model/Type : Data logger: 200-WS-25LB
: Wind direction sensor: WS-02P

Serial Number : Data logger: A4917
: Wind direction sensor: -

ID No : Data logger: BKK_FSD163
: Wind direction sensor: -

Customer : ALS laboratory group (Thailand) co., ltd.
: 104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250
Thailand.

Environmental Condition:
The measurement was carried out in an ambient temperature of (23±3) °C, and relative humidity of (40±10) %.

Measurement Method:
The wind direction sensor calibration according to comparison method with reference angle measurement electronic theodolite and the laser is used for axis control. The measurement were taken at 45° intervals in clockwise and counter-clockwise directions.

Note: The UUC was warmed up for 1 hour prior to the calibration being performed

Traceability:
The measurement results are traceable to the international system of units (SI) through Certificate No: Q21086014, Certificate No: KWS64/0025.

Measurement Date : MAR 17, 2022.
Issued Date : MAR 21, 2022.

Calibrated by
☒ Mr. Sawit Thachad
☐ Miss Orathai Wisetwitaya



Approved Signatory

Mr. Parinya Booncharoen.
Calibration Department Manager

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Continuation of Certificate of Calibration Number

Certificate No: WD-03032022
Pages 2 of 2 pages

Result of calibration: ☐ Without adjustment ☒ With adjustment.

Calibration in the range of 0 – 360 ° at a calibration interval of 45°.

The results of calibration and associated measurement uncertainties are reported in table below.

NO	Turning Direction	Nominal Angle (°)	Standard Reading (°)	UUC* Reading (°)	Error (°)	Uncertainty ±(°)
1	Clockwise	0/360	360	359	-1	3.0
2		45	45	43	-2	3.0
3		90	90	87	-3	3.0
4		135	135	132	-3	3.0
5		180	180	180	0	3.0
6		225	225	229	4	3.0
7		270	270	276	6	3.0
8		315	315	320	5	3.0
9	Counter Clockwise	0/360	360	359	-1	3.0
10		45	45	43	-2	3.0
11		90	90	87	-3	3.0
12		135	135	132	-3	3.0
13		180	180	180	0	3.0
14		225	225	229	4	3.0
15		270	270	276	6	3.0
16		315	315	320	5	3.0

UUC*: Unit Under Calibration The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

End of Certificate of Calibration



CERTIFICATE OF CALIBRATION

Certificate No: WS-08082021
Page 1 of 2 pages

Measurement Item : Cup anemometer with data logger.

Manufacturer : Data logger: Novatek
Cup anemometer: Novatek.

Model/Type : Data logger: 200-WS-25LB.
Cup anemometer: WS-02F.

Serial Number : Data logger: A5378.
Cup anemometer: -.

ID No : Data logger: BKK_FSD018.
Cup anemometer: -.

Customer : A.T.S laboratory group (Thailand) co., Ltd.
104 Phatthanasri 40, Phatthanasri Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250 Thailand.

Test Conditions : Wind tunnel cross test section area 900 cm²
Anemometer frontal area 100 cm²
Diameter of mounting pipe - mm
Blockage ratio of test object 0.111 [-]

Test Conditions : Air temperature 22.6 ±0.5 °C
Air pressure 1009.6 ±0.4 hPa
Relative air humidity 50.4 ±3.5 %RH

Calibration Procedure : Calibration was carried out base on:
IEC 61400-12-1 ED1: 2005-Power Performance Measurements of Electricity Producing Wind Turbines;
MSASNET Anemometer Calibration Procedure - Version 2 2009.

Traceability : This calibration documents the traceable to national standard, which realize the unit of measurements according to the international system of units (SI) through National Institute of Metrology Thailand (NIMT).

Measurement Date : Aug 30, 2021.
Issued Date : Aug 31, 2021.

Calibrated by
☒ Mr. Soravit Thachad
☐ Miss Orathai Wivattitaya



Approved Signatory: *[Signature]*
Mr. Parinya Booncharoen
Technical Support
and Calibration Manager

Continuation of Certificate of Calibration Number

Certificate No: WS-08082021
Page 2 of 2 Pages

Result of calibration: ☒ Without adjustment ☐ With adjustment

Calibration in the range of 1 - 16 m/s at a calibration interval of 1 m/s.

The results of calibration and associated measurement uncertainties are reported in the table below.

V _{std} Reading m/s	V _{unc} Reading m/s	Error (m/s)	Uncertainty (%)
2.021	1.8	-0.2	2.9
4.074	3.9	-0.2	1.6
5.98	6.0	0.0	0.99
8.03	8.0	0.0	0.84
10.03	10.2	0.2	0.66
11.99	12.3	0.3	0.95
13.98	14.4	0.4	0.47
16.00	16.6	0.6	0.48
16.02	15.5	-0.5	0.69
12.98	13.4	0.4	0.67
10.99	11.2	0.2	0.69
8.97	9.0	0.0	0.97
7.01	7.0	0.0	0.90
5.085	5.0	-0.1	0.96
2.970	3.0	0.0	1.7
1.019	0.7	-0.3	5.4

UUC: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

Appendix 1: Instrumentations

NO	Sensor	Manufacturer	Model/Type	Calibration Date	Certificate Report Number	Range
1	Pitot static	TCSTO INC.	06352145	Aug 07, 2021	MW-0034-21	5 - 30 m/s
2	Precision Differential Pressure Meter	Zoglab	DPK2500	Aug 07, 2021	MW-0034-21	5 - 30 m/s
3	Air velocity transducer (hot wire)	TSI INC.	8455-12	Aug 08, 2021	MW-0035-21	0 - 5 m/s
4	Temperature	Zoglab	DSR-THP	March 30, 2021	CL-027-04	-30 - 70 °C
5	Relative humidity	Zoglab	DSR-THP	March 30, 2021	PH-03032021	0 - 100 %RH
6	Atmospheric pressure	Zoglab	DSR-THP	March 30, 2021	BP-01032021	500 - 1100 hPa
7	Wind tunnel	GSSOM	MP3300	-	-	0 - 60 Hz

End of certificate of calibration





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CERTIFICATE OF CALIBRATION

Certificate No: WD-07082021
Page 1 of 2 pages

Measurement Item : Wind direction sensor with data logger.

Manufacturer : Data logger: Novolynx.
: Wind direction sensor: Novolynx.

Model/Type : Data logger: 200-WS-25LB.
: Wind direction sensor: WS-02P.

Serial Number : Data logger: A5378.
: Wind direction sensor: -.

ID No : Data logger: BKK_FS0918.
: Wind direction sensor: -.

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

Environmental Condition:

The measurement was carried out in an ambient temperature of (23±3)°C, and relative humidity of (40±10)%.

Measurement Method:

The wind direction sensor calibration according to comparison method with reference angle measurement electronic theodolite and line laser is used for axis control. The measurement were taken at 45° intervals in clockwise and counterclockwise directions.

Note: The UUC was warmed up for 1 hour prior to the calibration being performed

Traceability:

The measurement results are traceable to the International system of units (SI) through Certificate No: CC563-07-0045.
Certificate No: KWS63/0044.

Measurement Date : Aug 30, 2021.
Issued Date : Aug 31, 2021.



Performed by
☒ Mr. Sorawit Thacholad
☐ Miss Orathai Wiwatwitaya

Approved Signatory: *[Signature]*

Mr. Perinya Booncharoen.
Technical Support
and Calibration Manager

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Tel: (66) 02-8680812#13 Fax: (66) 02-8680860 www.jiranatee.com

Continuation of Certificate of Calibration Number

Certificate No: WD-07082021

Pages 2 of 2 pages

Result of calibration: ☐ Without adjustment ☒ With adjustment.

Calibration in the range of 0 - 360 ° at a calibration interval of 45°.

The results of calibration and associated measurement uncertainties are reported in table below.

NO	Turning Direction	Nominal Angle (°)	Standard Reading (°)	UUC* Reading (°)	Error (°)	Uncertainty ±(°)
1	Clockwise	0/360	360	359	-1	3.0
2		45	45	43	-2	3.0
3		90	90	87	-3	3.0
4		135	135	132	-3	3.0
5		180	180	180	0	3.0
6		225	225	228	3	3.0
7		270	270	274	4	3.0
8		315	315	319	4	3.0
9	Counter Clockwise	0/360	360	359	-1	3.0
10		45	45	43	-2	3.0
11		90	90	87	-3	3.0
12		135	135	132	-3	3.0
13		180	180	180	0	3.0
14		225	225	228	3	3.0
15		270	270	274	4	3.0
16		315	315	319	4	3.0

UUC*: Unit Under Calibration The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

End of Certificate of Calibration



CERTIFICATE OF CALIBRATION

Certificate No: WS-09082021
Page 1 of 2 pages

Measurement Item : Cup anemometer with data logger.

Manufacturer : Data logger: Novalynx.
: Cup anemometer: Novalynx.

Model/Type : Data logger: 200-WS-25LB.
: Cup anemometer: WS-02F.

Serial Number : Data logger: A5379.
: Cup anemometer: -.

ID No : Data logger: BKK_FS0919.
: Cup anemometer: -.

Customer : ALS laboratory group (Thailand) co., Ltd.
: 104 Phetthenehen 40, Phetthenehen Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10260
Thailand.

Test Conditions : Wind tunnel cross test section area 900 cm²
: Anemometer frontal area 100 cm²
: Diameter of mounting pipe - mm
: Blockage ratio of test object 0.111 [-]

Test Conditions : Air temperature 22.7 ±0.8 °C
: Air pressure 1008.3 ±0.4 hPa
: Relative air humidity 45.8 ±3.5 %RH

Calibration Procedure : Calibration was carried out base on:
IEC 61400-12-1 ED.1: 2005-Power Performance Measurements of Electricity Producing Wind
Turbines:
MCASNET Anemometer Calibration Procedure - Version 2, 2009.

Traceability : This calibration documents the traceable to national standard, which realize the unit of
measurements according to the international system of units (SI) through National Institute of
Metrology Thailand (NIMT).

Measurement Date : Aug 30, 2021.
Issued Date : Aug 31, 2021.

Calibrated by
☒ Mr. Sorawat Thechad
☐ Miss Orathai Wicetmitaya



Approved Signatory: *[Signature]*
Mr. Parinya Booncharoon
Technical Support
and Calibration Manager

THIS CERTIFICATE MAY NOT BE REPRODUCED EXCEPT IN FULL UNLESS PERMISSION FOR REPRODUCTION HAS BEEN
OBTAINED IN WRITING FROM THE LABORATORY.

Continuation of Certificate of Calibration Number

Certificate No: WS-09082021
Page 2 of 2 Pages

Result of calibration: ☒ Without adjustment ☐ With adjustment

Calibration in the range of 1 - 16 m/s at a calibration interval of 1 m/s.

The results of calibration and associated measurement uncertainties are reported in the table below.

V _{ref} Reading m/s	V _{unc} Reading m/s	Error (m/s)	Uncertainty (%)
2.060	2.0	-0.1	2.7
4.064	4.1	0.0	1.3
5.99	6.0	0.0	0.98
8.00	8.0	0.0	0.74
10.01	10.2	0.2	0.66
11.98	12.3	0.3	0.48
14.03	14.4	0.4	0.47
15.96	16.6	0.6	0.39
15.00	15.4	0.4	0.51
12.98	13.4	0.4	0.55
10.99	11.2	0.2	0.53
8.97	9.0	0.0	0.65
6.97	7.0	0.0	0.84
5.062	5.1	0.0	0.93
2.972	3.1	0.1	1.6
1.021	0.9	-0.1	5.3

UUC: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of
confidence of approximately 95%

Appendix 1: Instrumentations

NO	Sensor	Manufacturer	Model/Type	Calibration Date	Certificate Report Number	Range
1	Pitot static	TESTO INC.	06352145	Aug 07, 2021	MW-0034-21	5 - 30 m/s
2	Precision Differential Pressure Meter	Zaglab	DPM2500	Aug 07, 2021	MW-0034-21	5 - 30 m/s
3	Air velocity transducer (hot wire)	TSI INC.	8455-12	Aug 08, 2021	MW-0035-21	0 - 5 m/s
4	Temperature	Zaglab	DSR-TMP	March 30, 2021	CL-027-64	-30 - 70°C
5	Relative humidity	Zaglab	DSR-RHP	March 30, 2021	RH-03032021	0 - 100 %RH
6	Atmospheric pressure	Zaglab	DSR-THP	March 30, 2021	BP-01032021	500 - 1100 hPa
7	Wind tunnel	CSSOM	MP3300	-	-	0 - 50 Hz

End of certificate of calibration





63/14-15,67/35-36, Soi Petchkasem 7,7/1, Petchkasem Rd,
Walthapra, Bangkokyai, Bangkok 10600 Thailand.
Tel.: (66) 02-8680812#13 Fax.: (66) 02-8680860 www.jiranatee.com

CERTIFICATE OF CALIBRATION

Certificate No.: WD-08082021

Page 1 of 2 pages

Measurement Item : Wind direction sensor with data logger.

Manufacturer : Data logger: Novalymx.
: Wind direction sensor: Novalymx.

Model/Type : Data logger: 200-WS-26LB.
: Wind direction sensor: WS-02F.

Serial Number : Data logger: A5379.
: Wind direction sensor: -.

ID No : Data logger: BKK_F90919.
: Wind direction sensor: -.

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

Environmental Condition:

The measurement was carried out in an ambient temperature of $(23 \pm 3)^\circ\text{C}$, and relative humidity of $(40 \pm 10)\%$.

Measurement Method:

The wind direction sensor calibration according to comparison method with reference angle measurement electronic theodolite and line laser is used for axis control. The measurement were taken at 45° intervals in clockwise and counterclockwise directions.

Note: The UUC was warmed up for 1 hour prior to the calibration being performed

Traceability:

The measurement results are traceable to the international system of units (SI) through Certificate No.: CC563-07-0045, Certificate No.: KWS63/0044.

Measurement Date : Aug 30, 2021.

Issued Date : Aug 31, 2021.

Performed by

- ☒ Mr. Soravit Thachalad
☐ Mrs. Orathai Wivattavilaya



Approved Signatory

Mr. Parinya Booncharoen.
Technical Support
and Calibration Manager

THIS CERTIFICATE REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL UNLESS PERMISSION FOR REPRODUCTION HAS BEEN OBTAINED IN WRITING FROM THE LABORATORY.



63/14-15,67/35-36, Soi Petchkasem 7,7/1, Petchkasem Rd,
Walthapra, Bangkokyai, Bangkok 10600 Thailand.
Tel.: (66) 02-8680812#13 Fax.: (66) 02-8680860 www.jiranatee.com

Continuation of Certificate of Calibration Number

Certificate No.: WD-08082021

Pages 2 of 2 pages

Result of calibration: ☐ Without adjustment ☒ With adjustment.
Calibration in the range of $0 - 360^\circ$ at a calibration interval of 45° .

The results of calibration and associated measurement uncertainties are reported in table below.

NO	Turning Direction	Nominal Angle ($^\circ$)	Standard Reading ($^\circ$)	UUC* Reading ($^\circ$)	Error ($^\circ$)	Uncertainty \pm ($^\circ$)
1	Clockwise	0/360	360	359	-1	3.0
2		45	45	41	-4	3.0
3		90	90	86	-4	3.0
4		135	135	133	-2	3.0
5		180	180	178	-2	3.0
6		225	225	227	2	3.0
7		270	270	273	3	3.0
8		315	315	318	3	3.0
9	Counter Clockwise	0/360	360	359	-1	3.0
10		45	45	41	-4	3.0
11		90	90	86	-4	3.0
12		135	135	133	-2	3.0
13		180	180	178	-2	3.0
14		225	225	227	2	3.0
15		270	270	273	3	3.0
16		315	315	318	3	3.0

UUC*: Unit Under Calibration The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor $k=2$ providing a level of confidence of approximately 95%

End of Certificate of Calibration



CERTIFICATE OF CALIBRATION

Certificate No: WS-01052022
Page 1 of 2 pages

Measurement Item : Cup anemometer with data logger.

Manufacturer : Data logger: Novaslynx
: Cup anemometer: Novaslynx

Model/Type : Data logger: 200-WS-25DL
: Cup anemometer: WS-02P

Serial Number : Data logger: A4940
: Cup anemometer: -

ID No : Data logger: BKK_PSD165
: Cup anemometer: -

Customer : ALS laboratory group (Thailand) co., Ltd.
: 104 Phathanakan 40, Phathanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250
Thailand.

Test Conditions : Wind tunnel cross test section area 900 cm²
: Anemometer frontal area 100 cm²
: Diameter of mounting pipe - mm
: Blockage ratio of test object 0.111 [-]

Test Conditions : Air temperature 25.3 ±0.5 °C
: Air pressure 1013.3 ±0.4 hPa
: Relative air humidity 51.1 ±3.5 %RH

Calibration Procedure : Calibration was carried out base on:
: IEC 61400-12-1 Ed.1: 2005-Power Performance Measurements of Electricity Producing Wind
Turbines;
: MCASNET Anemometer Calibration Procedure - Version 2: 2009;

Traceability : This calibration documents the traceable to national standard, which realize the unit of
measurements according to the international system of units (SI) through National Institute of
Metrology Thailand (NIMT).

Measurement Date : May 03, 2022.
Issued Date : May 04, 2022.

Calibrated by
☒ Mr. Sorawit Thachalad
☐ Miss Jitraporn Lertsomphol



Approved Signatory:
Mr. Parinya Booncharoen
Calibration Department Manager

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OBTAINED IN WRITING FROM THE LABORATORY.

Continuation of Certificate of Calibration Number

Certificate No: WS-01052022
Page 2 of 2 Pages

Result of calibration: ☒ Without adjustment ☐ With adjustment

Calibration in the range of 1 - 16 m/s at a calibration interval of 1 m/s.

The results of calibration and associated measurement uncertainties are reported in the table below.

V _{ref} Reading m/s	V _{unc} Reading m/s	Error (m/s)	Uncertainty (%)
2.079	2.0	-0.1	2.4
4.145	4.0	-0.1	1.2
6.01	6.0	0.0	1.0
8.01	8.0	0.0	0.74
10.00	10.2	0.2	0.68
11.99	12.2	0.2	0.72
14.02	14.3	0.3	0.47
16.00	16.3	0.3	0.43
15.02	15.3	0.3	0.66
12.99	13.1	0.1	0.61
11.01	11.2	0.2	0.63
9.01	9.1	0.1	0.69
7.00	7.0	0.0	0.90
5.165	5.1	-0.1	0.86
3.009	3.0	0.0	1.7
1.027	0.8	-0.2	4.8

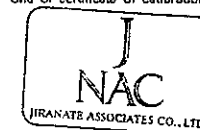
UUC: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of
confidence of approximately 95%

Appendix 1: Instrumentations

NO	Sensor	Manufacturer	Model/Type	Calibration Date	Certificate Report Number	Range
1	Pilot static	TG6TC INC.	06352145	Aug 07, 2021	MW-0034-21	5 - 30 m/s
2	Precision Differential Pressure Meter	Zoglab	DPM2600	Aug 07, 2021	MW-0034-21	5 - 30 m/s
3	Air velocity transducer (hot wire)	TSI INC.	8455-12	Aug 08, 2021	MW-0035-21	0 - 5 m/s
4	Temperature	Zoglab	DSR-THP	March 30, 2022	CL-027-65	-30 - 70°C
5	Relative humidity	Zoglab	DSR-THP	March 30, 2022	PH-03032022	0 - 100 %RH
6	Atmospheric pressure	Zoglab	DSR-THP	March 30, 2022	BP-01032022	500 - 1100 hPa
7	Wind tunnel	6350M	MP3300	-	-	0 - 50 Hz

End of certificate of calibration



CERTIFICATE OF CALIBRATION

Certificate No.: WD-01052022

Page 1 of 2 pages

Measurement Item : Wind direction sensor with data logger.

Manufacturer : Data logger: Novalynx.
: Wind direction sensor: Novalynx.

Model/Type : Data logger: 200-WS-25DL
: Wind direction sensor: WS-02F

Serial Number : Data logger: A4940
: Wind direction sensor: -

ID No : Data logger: BKK_FS0165
: Wind direction sensor: -

Customer : ALS laboratory group (Thailand) co., ltd.
: 104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10260
Thailand.

Environmental Condition:

The measurement was carried out in an ambient temperature of (23±3) °C, and relative humidity of (40±10) %.

Measurement Method:

The wind direction sensor calibration according to comparison method with reference angle measurement electronic theodolite and line laser is used for axis control. The measurement were taken at 45° intervals in clockwise and counterclockwise directions.

Note: The UUC was warmed up for 1 hour prior to the calibration being performed

Traceability:

The measurement results are traceable to the international system of units (SI) through Certificate No: Q21086014, Certificate No: KWS64/0025.

Measurement Date : May 03, 2022.

Issued Date : May 04, 2022.

Calibrated by
☒ Mr. Sorawit Thachelad
☐ Miss Jitraporn Lertsomphol



Approved Signatory:

Mr. Panya Booncharoen.
Calibration Department Manager

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Continuation of Certificate of Calibration Number

Certificate No: WD-01052022

Pages 2 of 2 pages

Result of calibration: ☐ Without adjustment ☒ With adjustment.

Calibration in the range of 0 - 360 ° at a calibration interval of 45°.

The results of calibration and associated measurement uncertainties are reported in table below.

NO	Turning Direction	Nominal Angle (°)	Standard Reading (°)	UUC* Reading (°)	Error (°)	Uncertainty ±(°)
1	Clockwise	0/360	360	359	-1	3.0
2		45	45	41	-4	3.0
3		90	90	87	-3	3.0
4		135	135	132	-3	3.0
5		180	180	181	1	3.0
6		225	225	229	4	3.0
7		270	270	275	5	3.0
8		315	315	320	5	3.0
9	Counter Clockwise	0/360	360	359	-1	3.0
10		45	45	41	-4	3.0
11		90	90	87	-3	3.0
12		135	135	132	-3	3.0
13		180	180	181	1	3.0
14		225	225	229	4	3.0
15		270	270	275	5	3.0
16		315	315	320	5	3.0

UUC*: Unit Under Calibration The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

End of Certificate of Calibration



SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACC22003

Pages : 1 of 3

Calibration Certificate

Equipment : SOUND CALIBRATOR
Manufacturer : RION
Model : NC-74
Serial No.: 34178119
ID No.: BKK_FS0632

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 \pm 3) °C
Pressure : (101.3 \pm 3) kPa
Relative Humidity : (50.0 \pm 20) %

Received Date : 05 JANUARY 2022
Calibration Date : 14 JANUARY 2022
Date of Issue : 17 JANUARY 2022

Calibrated by : Nathakorn Pisutpaisan

Approved by :

T. Petchurai
(Thanakul Petchurai)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No. : ACC22003
Job No. : VC65AC0041
Pages : 2 of 3

Calibration Procedure : CP-AC-03

Calibration Method :

This equipment was calibrated by based on IEC-60942-2003 Standard.

The sound pressure level, frequency and total distortion of the sound calibrator was measured using the reference microphone.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL.BP. 05/0264	10-Feb-22
Digital Multimeter	33461A	MY53220076	EEL.BP. 03/0264	08-Feb-22
Digital Multimeter	33461A	MY60024273	1-15180725251-1	15-Sep-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KAI	34560495	AA-3003-21	16-Feb-22
Audio Analyzer	AVR-3360A	V744B6069	EF-0010-21	10-Feb-22

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

T. Petchurai

Continuation of Calibration Certificate

Cert. No. : ACC22003
Job No. : VC65AC0041
Pages : 3 of 3

Result of calibration :

1. Sound pressure level

Specified sound pressure level (dB)	Measured value (dB)	Deviated value (dB)	Uncertainty (dB)	Tolerance limit (dB)
94	93.94	-0.06	0.14	0.40

2. Frequency

Specified Frequency (Hz)	Measured value (Hz)	Deviated value (%)	Uncertainty (%)	Tolerance limit (%)
1000	1001.0	0.1	0.1	1.0

3. Total distortion

Measured value (%)	Uncertainty (%)	Tolerance limit (%)
1.73	0.10	3.0

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ or any value following calculation, providing a level of confidence of approximately 95 %

----- End of Calibration Certificate -----

Y. Petchum

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACL22244
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24
Serial No.: 00572552 / 170384 / 72890
ID No.: BKK_FS0877

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWANG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 11 OCTOBER 2022
Calibration Date : 25-26 OCTOBER 2022
Date of Issue : 27 OCTOBER 2022

REVIEW BY	<i>Nathakorn P.</i>
APPROVED BY	<i>Wichit Chai</i>
NEXT CAL. DATE	25/10/23

Calibrated by : Nathakorn Pisutpaisan

Approved by :

T. Petchum
(Thanakul Petchumai)

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Continuation of Calibration Certificate

Cert. No. : ACL22244
Job No. : VC65AC0090
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL.BP. 04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL.BP. 03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL.BP. 05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KAI	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

S. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22244
Job No. : VC65AC0090
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

S. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22244
Job No. : VC65AC0090
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
14.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	11.6
C - weight	17.5
Flat	23.3

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.3	0.4	0.4	± 1.5
1000	-0.1	-0.1	-0.1	± 1.0
8000	-1.7	-1.6	-1.6	±5.0

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22244
Job No. : VC65AC0090
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22244
Job No. : VC65AC0090
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	29.0	0.0	± 1.1
28.0	28.1	0.1	± 1.1
27.0	27.1	0.1	± 1.1
26.0	26.1	0.1	± 1.1
25.0	25.1	0.1	± 1.1

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22244
Job No. : VC65AC0090
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lcpeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	135.7	-0.7	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22244
Job No. : VC65AC0090
Pages : 8 of 8

11. Overload Indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.6	89.7	0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

T. Petchur

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACL21135
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42/ Microphone UC-S2 / Preamplifier NH-24
Serial No.: 01122504 / 169436 / 72457
ID No.: BKK_FS0033

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 18 OCTOBER 2021
Calibration Date : 25-26 OCTOBER 2021
Date of Issue : 28 OCTOBER 2021

Calibrated by : Nathakorn Pisutpaisan

Approved by :

T. Petchur
(Thanakul Petchur)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

Continuation of Calibration Certificate

Cert. No. : ACL21135
Job No. : VC65AC0005
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0012-21	10-Feb-22
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL.BP. 05/0264	10-Feb-22
Digital Multimeter	33461A	MY53220076	EEL.BP. 03/0264	08-Feb-22
Digital Multimeter	8846A	1997025	EEL.BP. 06/0264	05-Feb-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KA1	34560495	AA-3003-21	16-Feb-22

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL21135
Job No. : VC65AC0005
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL21135
Job No. : VC65AC0005
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.96)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
16.7

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	14.6
C - weight	20.2
Flat	25.5

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.4	0.5	0.5	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-1.0	-0.9	-0.9	±5.0

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL21135
Job No. : VC65AC0005
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	-0.1	±2.0
125	-0.1	0.0	0.0	±1.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Lcq	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL21135
Job No. : VC65AC0005
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.1	0.1	± 1.1
84.0	84.1	0.1	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.1	0.1	± 1.1
69.0	69.1	0.1	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.1	0.1	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.1	0.1	± 1.1
29.0	29.1	0.1	± 1.1
28.0	28.1	0.1	± 1.1
27.0	27.2	0.2	± 1.1
26.0	26.3	0.3	± 1.1
25.0	25.3	0.3	± 1.1

Continuation of Calibration Certificate

Cert. No. : ACL21135
Job No. : VC65AC0005
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L _{peak} (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.1	-0.3	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

Continuation of Calibration Certificate

Cert. No. : ACL21135
Job No. : VC65AC0005
Pages : 8 of 8

11. Overload indication

Measured value (dB)		Deviated	Acceptance
Positive	Negative	Value	Limits
one-half cycle	one-half cycle	(dB)	(dB)
89.7	89.7	0.0	±1.5

12. High level stability

Frequency	SLM Display	SLM Display	Deviated	Acceptance
Weighting	at initial	at final	Value	Limits
	(dB)	(dB)	(dB)	(dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

T. Petchurai

451-451/1 Sirinthorn Rd., Bangbunru, Bangplud Bangkok 10700 THAILAND.
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiphom.com http://www.sithiphom.com



Cert. No. : ACL21134
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24
Serial No.: 00572564 / 170401 / 72902
ID No.: BKK_FS0880

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PIATTHANAKAN 40, PIATTHANAKAN ROAD,
KHWANG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 18 OCTOBER 2021
Calibration Date : 25-26 OCTOBER 2021
Date of Issue : 28 OCTOBER 2021

Calibrated by : Nathakorn Pisutpaisan

Approved by :

T. Petchurai
(Thanakul Petchurai)

REVIEW BY	<i>Nathakorn P.</i>
APPROVED BY	<i>Nathakorn P.</i>
NEXT CAL. DATE	15/10/22

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced
other than in full, except with the prior written approval of the head of Calibration Laboratory.

Continuation of Calibration Certificate

Cert. No. : ACL21134
Job No. : VC65AC0005
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0012-21	10-Feb-22
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL.BP. 05/0264	10-Feb-22
Digital Multimeter	33461A	MY53220076	EEL.BP. 03/0264	08-Feb-22
Digital Multimeter	8846A	1997025	EEL.BP. 06/0264	05-Feb-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KAI	34560495	AA-3003-21	16-Feb-22

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL21134
Job No. : VC65AC0005
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL21134
Job No. : VC65AC0005
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.96)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
14.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	10.9
C - weight	17.3
Flat	22.9

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.2	0.2	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-0.6	-0.5	-0.5	±5.0

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL21134
Job No. : VC65AC0005
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.1	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.1	0.0	±3.0
8000	0.1	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Lcq	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.1	0.1	± 0.3

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL21134
Job No. : VC65AC0005
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.1	0.1	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	29.0	0.0	± 1.1
28.0	28.0	0.0	± 1.1
27.0	27.0	0.0	± 1.1
26.0	26.1	0.1	± 1.1
25.0	25.1	0.1	± 1.1

T. Retoh.

Continuation of Calibration Certificate

Cert. No. : ACL21134
Job No. : VC65AC0005
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	116.9	-0.1	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	107.9	-0.1	1.5 ; -5.0
	200	800	127.6	127.5	-0.1	±1.0
SEL	0.25	1	99.0	98.8	-0.2	1.5 ; -5.0
	2	8	108.0	107.9	-0.1	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lepeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.0	-0.4	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

T. Retoh.

Continuation of Calibration Certificate

Cert. No. : ACL21134
Job No. : VC65AC0005
Pages : 8 of 8

11. Overload indication

Measured value (dB)		Deviated	Acceptance
Positive	Negative	Value	Limits
one-half cycle	one-half cycle	(dB)	(dB)
89.7	89.5	-0.2	±1.5

12. High level stability

Frequency	SLM Display	SLM Display	Deviated	Acceptance
Weighting	at initial	at final	Value	Limits
	(dB)	(dB)	(dB)	(dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

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Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACL21138
Pages : 1 of 8

Calibration Certificate

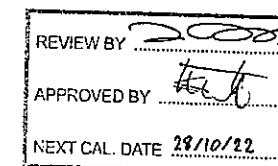
Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42/ Microphone UC-S2 / Preamplifier NH-24
Serial No.: 00672789 / 170666 / 73129
ID No.: BKK_FS0929

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHUWAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 21 OCTOBER 2021
Calibration Date : 28-29 OCTOBER 2021
Date of Issue : 01 NOVEMBER 2021



Calibrated by : Nathakorn Pisutpaisan

Approved by :

[Signature]
(Thanakul Petchurai)

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Continuation of Calibration Certificate

Cert. No. : ACL21138
Job No. : VC65AC0008
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
For tests results of each items were made by observation of each instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments .

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0012-21	10-Feb-22
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL.BP. 05/0264	10-Feb-22
Digital Multimeter	33461A	MY53220076	EEL.BP. 03/0264	08-Feb-22
Digital Multimeter	8846A	1997025	EEL.BP. 06/0264	05-Feb-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KA1	34560495	AA-3003-21	16-Feb-22

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

T. Petch...

Continuation of Calibration Certificate

Cert. No. : ACL21138
Job No. : VC65AC0008
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

T. Petch...

Continuation of Calibration Certificate

Cert. No. : ACL21138
Job No. : VC65AC0008
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.96)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
15.4

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	11.6
C - weight	17.8
Flat	23.7

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.1	0.2	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	0.1	0.1	0.1	±5.0

T. Rth.

Continuation of Calibration Certificate

Cert. No. : ACL21138
Job No. : VC65AC0008
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	-0.1	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

T. Rth.

Continuation of Calibration Certificate

Cert. No. : ACL21138
Job No. : VC65AC0008
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	132.9	-0.1	± 1.1
132.0	131.9	-0.1	± 1.1
131.0	130.9	-0.1	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	29.0	0.0	± 1.1
28.0	28.0	0.0	± 1.1
27.0	27.0	0.0	± 1.1
26.0	26.0	0.0	± 1.1
25.0	25.0	0.0	± 1.1

F. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL21138
Job No. : VC65AC0008
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L _{peak} (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.3	-0.1	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

F. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL21138
Job No. : VC65AC0008
Pages : 8 of 8

11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.7	89.6	-0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

T. Petchur



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Cert. No. : ACL22178
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24
Serial No.: 01022263 / 136951 / 22311
ID No.: BKK_FS0032

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 25 JULY 2022
Calibration Date : 15-18 AUGUST 2022
Date of Issue : 19 AUGUST 2022

Calibrated by : Nathakorn Pisutpaisan

Approved by :

T. Petchur
(Thanakul Petchurai)

REVIEW BY	Nathakorn P.
APPROVED BY	T. Petchur
NEXT CAL. DATE	15/8/23

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Continuation of Calibration Certificate

Cert. No. : ACL22178
Job No. : VC65AC0071
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL.BP. 04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL.BP. 03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL.BP. 05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KAI	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22178
Job No. : VC65AC0071
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22178
Job No. : VC65AC0071
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
17.1

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	11.6
C - weight	17.5
Flat	23.3

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
125	0.5	0.5	0.5	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-2.4	-2.4	-2.3	±5.0

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22178
Job No. : VC65AC0071
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
63	0.0	-0.1	0.0	±2.0
125	0.0	0.1	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.1	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.1	±2.0
4000	0.0	0.1	0.1	±3.0
8000	0.1	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.1	0.1	± 0.3

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22178
Job No. : VC65AC0071
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.1	0.1	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.1	0.1	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	28.0	0.0	± 1.1
27.0	26.9	-0.1	± 1.1
26.0	25.9	-0.1	± 1.1
25.0	24.9	-0.1	± 1.1

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22178
Job No. : VC65AC0071
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	116.9	-0.1	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	107.9	-0.1	1.5 ; -5.0
	200	800	127.6	127.5	-0.1	±1.0
SEL	0.25	1	99.0	98.8	-0.2	1.5 ; -5.0
	2	8	108.0	107.9	-0.1	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L _{peak} (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	135.8	-0.6	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22178
Job No. : VC65AC0071
Pages : 8 of 8

11. Overload indication

Measured value (dB)		Deviated Value	Acceptance Limits
Positive one-half cycle	Negative one-half cycle	(dB)	(dB)
89.5	89.5	0.0	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

T. Petchur

451-451/1 Sirinthorn Rd., Bangbunru, Bangplud Bangkok 10700 THAILAND.
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Cert. No. : ACL21170
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24
Serial No.: 00858521 / 158765 / 58767
ID No.: BKK_FS0111

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 09 DECEMBER 2021
Calibration Date : 14-15 DECEMBER 2021
Date of Issue : 16 DECEMBER 2021

REVIEW BY	<i>Nathakorn P.</i>
APPROVED BY	<i>T. Petchur</i>
NEXT CAL. DATE	14/12/22

Calibrated by : Nathakorn Pisutpaisan

Approved by :

T. Petchur
(Thanakul Petchurai)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

Continuation of Calibration Certificate

Cert. No. : ACL21170
Job No. : VC65AC0033
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).

The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0012-21	10-Feb-22
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL.BP. 05/0264	10-Feb-22
Digital Multimeter	33461A	MY53220076	EEL.BP. 03/0264	08-Feb-22
Digital Multimeter	8846A	1997025	EEL.BP. 06/0264	05-Feb-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KAI	34560495	AA-3003-21	16-Feb-22

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

P.L.A.

Continuation of Calibration Certificate

Cert. No. : ACL21170
Job No. : VC65AC0033
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

P.L.A.

Continuation of Calibration Certificate

Cert. No. : ACL21170
Job No. : VC65AC0033
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.96)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
14.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	10.8
C - weight	17.3
Flat	23.1

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.5	0.5	0.5	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-2.6	-2.5	-2.5	±5.0

Continuation of Calibration Certificate

Cert. No. : ACL21170
Job No. : VC65AC0033
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	-0.1	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

Continuation of Calibration Certificate

Cert. No. : ACL21170
Job No. : VC65AC0033
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	53.9	-0.1	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	38.9	-0.1	± 1.1
34.0	33.9	-0.1	± 1.1
30.0	29.9	-0.1	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	27.9	-0.1	± 1.1
27.0	26.9	-0.1	± 1.1
26.0	25.9	-0.1	± 1.1
25.0	24.8	-0.2	± 1.1

Continuation of Calibration Certificate

Cert. No. : ACL21170
Job No. : VC65AC0033
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L _{peak} (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	135.9	-0.5	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

Continuation of Calibration Certificate

Cert. No. : ACL21170
Job No. : VC65AC0033
Pages : 8 of 8

11. Overload indication

Measured value (dB)		Deviated Value	Acceptance Limits
Positive one-half cycle	Negative one-half cycle	(dB)	(dB)
89.6	89.7	0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

451-451/1 Sirinthorn Rd., Bangbunru, Bangplud Bangkok 10700 THAILAND.
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiphorn.com http://www.sithiphorn.com



Cert. No. : ACL22045
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24
Serial No.: 01022262 / 142975 / 22310
ID No.: BKK_FS0031

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 05 JANUARY 2022
Calibration Date : 12-14 JANUARY 2022
Date of Issue : 17 JANUARY 2022

REVIEW BY	<i>Namkorn P.</i>
APPROVED BY	<i>Th. Petchur</i>
NEXT CAL. DATE	12/1/23

Calibrated by : Nathakorn Pisutpaisan

Approved by :

Th. Petchur
(Thanakul Petchurai)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

Continuation of Calibration Certificate

Cert. No. : ACL22045
Job No. : VC65AC0041
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0012-21	10-Feb-22
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL.BP.05/0264	10-Feb-22
Digital Multimeter	33461A	MY53220076	EEL.BP.03/0264	08-Feb-22
Digital Multimeter	34461A	MY60024273	1-15180725251-1	15-Sep-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KAI	34560495	AA-3003-21	16-Feb-22

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

T. P. K.

Continuation of Calibration Certificate

Cert. No. : ACL22045
Job No. : VC65AC0041
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

T. P. K.

Continuation of Calibration Certificate

Cert. No. : ACL22045

Job No. : VC65AC0041

Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.96)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
15.4

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	13.1
C - weight	19.5
Flat	25.0

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.3	0.4	0.4	± 1.5
1000	-0.1	-0.1	-0.1	± 1.0
8000	-2.0	-1.9	-1.9	±5.0

Continuation of Calibration Certificate

Cert. No. : ACL22045

Job No. : VC65AC0041

Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	0.0	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

Continuation of Calibration Certificate

Cert. No. : ACL22045
Job No. : VC65AC0041
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	38.9	-0.1	± 1.1
34.0	33.9	-0.1	± 1.1
30.0	29.9	-0.1	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	27.8	-0.2	± 1.1
27.0	26.9	-0.1	± 1.1
26.0	25.9	-0.1	± 1.1
25.0	24.8	-0.2	± 1.1

Continuation of Calibration Certificate

Cert. No. : ACL22045
Job No. : VC65AC0041
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	± 1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5; -5.0
	2	8	117.0	117.0	0.0	1.0; -2.5
	200	800	134.0	134.1	0.1	± 1.0
Slow	2	8	108.0	108.0	0.0	1.5; -5.0
	200	800	127.6	127.6	0.0	± 1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5; -5.0
	2	8	108.0	108.0	0.0	1.0; -2.5
	200	800	128.0	128.0	0.0	± 1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L _{peak} (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	135.5	-0.9	± 3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.2	-0.2	± 2.0
Negative half cycle	135.4	135.2	-0.2	± 2.0

Continuation of Calibration Certificate

Cert. No. : ACL22045
Job No. : VC65AC0041
Pages : 8 of 8

11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.7	89.6	-0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate



451-451/1 Sirinthorn Rd., Bangbunru, Bangplud Bangkok 10700 THAILAND.
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com

Cert. No. : ACL22041
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24
Serial No.: 00858518 / 158769 / 58770
ID No.: BKK_FS0108

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %
Received Date : 05 JANUARY 2022
Calibration Date : 12-14 JANUARY 2022
Date of Issue : 17 JANUARY 2022

REVIEW BY	<i>Nathakorn P.</i>
APPROVED BY	<i>[Signature]</i>
NEXT CAL. DATE	12/1/23

Calibrated by : Nathakorn Pisutpaisan

Approved by :

[Signature]
(Thanakul Petchurai)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced
other than in full, except with the prior written approval of the head of Calibration Laboratory.

Continuation of Calibration Certificate

Cert. No. : ACL22041
Job No. : VC65AC0041
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0012-21	10-Feb-22
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL.BP.05/0264	10-Feb-22
Digital Multimeter	33461A	MY53220076	EEL.BP.03/0264	08-Feb-22
Digital Multimeter	34461A	MY60024273	1-15180725251-1	15-Sep-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KAI	34560495	AA-3003-21	16-Feb-22

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22041
Job No. : VC65AC0041
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22041
Job No. : VC65AC0041
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.96)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
16.7

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	15.9
C - weight	22.3
Flat	27.7

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.3	0.3	0.3	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-1.1	-1.0	-1.0	±5.0

T. Pich

Continuation of Calibration Certificate

Cert. No. : ACL22041
Job No. : VC65AC0041
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	-0.1	±2.0
125	0.0	0.0	-0.1	±1.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

T. Pich

Continuation of Calibration Certificate

Cert. No. : ACL22041
Job No. : VC65AC0041
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	29.9	-0.1	± 1.1
29.0	29.0	0.0	± 1.1
28.0	27.9	-0.1	± 1.1
27.0	26.9	-0.1	± 1.1
26.0	25.9	-0.1	± 1.1
25.0	25.0	0.0	± 1.1

Continuation of Calibration Certificate

Cert. No. : ACL22041
Job No. : VC65AC0041
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5; -5.0
	2	8	117.0	117.0	0.0	1.0; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5; -5.0
	2	8	108.0	108.0	0.0	1.0; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L _{peak} (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.4	0.0	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

Continuation of Calibration Certificate

Cert. No. : ACL22041
Job No. : VC65AC0041
Pages : 8 of 8

11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.6	89.5	-0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

451-451/1 Sirinthorn Rd, Bangbunru, Bangplud Bangkok 10700 THAILAND.
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiphorn.com http://www.sithiphorn.com



Cert. No. : ACL22138
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24
Serial No.: 00710645 / 136966 / 10646
ID No.: BKK_FS0029

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 26 MAY 2022
Calibration Date : 09-10 JUNE 2022
Date of Issue : 14 JUNE 2022

REVIEW BY	<i>Nathakorn P.</i>
APPROVED BY	<i>T. Petchurai</i>
NEXT CAL DATE	9/6/23

Calibrated by : Nathakorn Pisutpaisan

Approved by :

T. Petchurai
(Thanakul Petchurai)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

Continuation of Calibration Certificate

Cert. No. : ACL22138
Job No. : VC65AC0063
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MYS2302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL.BP. 04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL.BP. 03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL.BP. 05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KAI	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22138
Job No. : VC65AC0063
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22138
Job No. : VC65AC0063
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
13.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	12.0
C - weight	19.1
Flat	24.6

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.1	0.2	0.2	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-0.5	-0.5	-0.4	±5.0

T. Petch...

Continuation of Calibration Certificate

Cert. No. : ACL22138
Job No. : VC65AC0063
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	-0.1	±2.0
125	-0.1	0.0	0.0	±1.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

T. Petch...

Continuation of Calibration Certificate

Cert. No. : ACL22138
Job No. : VC65AC0063
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	132.9	-0.1	± 1.1
132.0	131.9	-0.1	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	27.9	-0.1	± 1.1
27.0	27.0	0.0	± 1.1
26.0	25.9	-0.1	± 1.1
25.0	24.9	-0.1	± 1.1

G. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22138
Job No. : VC65AC0063
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5; -5.0
	2	8	117.0	117.0	0.0	1.0; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5; -5.0
	2	8	108.0	108.0	0.0	1.0; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L _{peak} (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	135.6	-0.8	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

G. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22138
Job No. : VC65AC0063
Pages : 8 of 8

11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.5	89.6	0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

T. Petchum

451-451/1 Sirinthorn Rd, Bangbunru, Bangplud Bangkok 10700 THAILAND.
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACL22134
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24
Serial No.: 00710638 / 136956 / 10639
ID No.: BKK_FS0022

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 26 MAY 2022
Calibration Date : 09-10 JUNE 2022
Date of Issue : 14 JUNE 2022

REVIEW BY	<i>Nathakorn P.</i>
APPROVED BY	<i>T. Petchum</i>
NEXT CAL. DATE	9/6/23

Calibrated by : Nathakorn Pisutpaisan

Approved by :

T. Petchum
(Thanakul Petchum)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced
other than in full, except with the prior written approval of the head of Calibration Laboratory.

Continuation of Calibration Certificate

Cert. No. : ACL22134
Job No. : VC65AC0063
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL.BP. 04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL.BP. 03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL.BP. 05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KA1	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

Continuation of Calibration Certificate

Cert. No. : ACL22134
Job No. : VC65AC0063
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

Continuation of Calibration Certificate

Cert. No. : ACL22134
Job No. : VC65AC0063
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
15.4

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	10.8
C - weight	17.3
Flat	22.9

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.3	0.3	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-0.2	-0.2	-0.1	±5.0

T. Retan.

Continuation of Calibration Certificate

Cert. No. : ACL22134
Job No. : VC65AC0063
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	-0.1	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.1	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
1.cq	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

T. Retan.

Continuation of Calibration Certificate

Cert. No. : ACL22134
Job No. : VC65AC0063
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	38.9	-0.1	± 1.1
34.0	33.9	-0.1	± 1.1
30.0	29.9	-0.1	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	27.9	-0.1	± 1.1
27.0	26.9	-0.1	± 1.1
26.0	25.9	-0.1	± 1.1
25.0	24.8	-0.2	± 1.1

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22134
Job No. : VC65AC0063
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.1	0.1	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.1	0.1	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lcpeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.1	-0.3	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22134
Job No. : VC65AC0063
Pages : 8 of 8

11. Overload indication

Measured value (dB)		Deviated	Acceptance
Positive	Negative	Value	Limits
one-half cycle	one-half cycle	(dB)	(dB)
89.6	89.6	0.0	±1.5

12. High level stability

Frequency	SLM Display	SLM Display	Deviated	Acceptance
Weighting	at initial	at final	Value	Limits
	(dB)	(dB)	(dB)	(dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

Signature



REVIEW BY *Manakorn P.*
APPROVED BY *[Signature]*
NEXT CAL. DATE *22/3/22*

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : VIBRATION METER
MANUFACTURER : VIBROCK
MODEL / TYPE : 901
SERIAL NO. : 1852[BKK_FS0858]
CLID. NO. : 251700179
JOB CONTROL NO. : 210920089071

CUSTOMER : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN RD.,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG, BANGKOK 10250, THAILAND

DATE OF RECEIVED : 20 September 2021

DATE OF ISSUED : 23 September 2021

Report of calibration screening must not be taken in part. Except complete. Without the approval of the Calibration Laboratory Co., Ltd.

Calibrated By : Suwit Phuanbusabong
Calibration Engineer

[Signature]



Approved By : Mongkol Yotsoontorn
Authorized Signatory
23 September 2021

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to
the International System of Units (SI)

Certificate No. Q21089071

F3-011-04/01-12

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cclcalibration



CALIBRATION LABORATORY CO., LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

REPORT OF CALIBRATION FOR

NOMENCLATURE : VIBRATION METER
MANUFACTURER : VIBROCK
MODEL / TYPE : 901
SERIAL NO. : 1852[BKK_FS0858]
DATE OF CALIBRATION : 21 September 2021

ENVIRONMENT CONDITIONS :

Temperature : $(23 \pm 2) ^\circ\text{C}$ Relative Humidity : $(55 \pm 15) \% \text{RH}$

PROCEDURE USED :

This instrument was calibrated under procedure No. WI-305-127 based on ISO 16063-21 as calibration guideline.
The calibration was performed by using Digital Multimeter, High Resolution Programmable Timer/Counter, Accelerometer and Measuring Amplifier which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Digital Multimeter, Agilent Technologies Model 34401A S/N. US36044686.
2. High Resolution Programmable Timer/Counter, Philips Model PM6680B S/N. SM607101.
3. Accelerometer with Measuring Amplifier, Bruel & Kjaer Model 8305, 2525 S/N. 397018, 2434988.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand) Certificate No. EE-0070-21, Due Date 23 July 2022.
2. The measurements are traceable to International System of Units (SI), through Aeronautical Radio of Thailand Ltd. Certificate No. 07-0002/21, Due Date 04 January 2022.
3. The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand) Certificate No. AV-0047-20, Due Date 05 November 2021.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2.00$ which for a normal distribution corresponds to a coverage probability of approximately 95 %.
It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2013)"

Certificate No. Q21089071

F3-011-04/01-12

page 2 of 3



@clcalibration



CALIBRATION LABORATORY CO., LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CONDITION OF CALIBRATION ITEM : GOOD

MEASUREMENT RESULTS : (X) without adjustment () adjustment

CALIBRATION DATA

ACCELERATION RESULT

Test point		Mode	STD Reading	DUC Reading	Correction	Uncertainty
(g)	(frequency)		(g)	(g)	(g)	\pm (% of rdg.)
1	160 Hz	rms	1.00	1.08	-0.08	1.3
2	160 Hz		2.00	2.16	-0.16	1.0
4	160 Hz		4.00	4.20	-0.20	0.9
6	160 Hz		6.00	6.32	-0.32	0.9
8	160 Hz		8.00	8.44	-0.44	0.9
10	160 Hz		10.0	10.5	-0.5	1.0

This report is valid for the above stated instrument/s only.

End of Certificate

Certificate No. Q21089071

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@clcalibration



CALIBRATION LABORATORY CO., LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yeak 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

REVIEW BY	<i>Hancom P.</i>
APPROVED BY	<i>[Signature]</i>
NEXT CAL. DATE	26/11/23

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : VIBRATION METER
MANUFACTURER : VIBROCK
MODEL / TYPE : V901
SERIAL NO. : 1618 [BKK_FS0856]
CLID. NO. : 25130428
JOB CONTROL NO. : 220524052251

CUSTOMER : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN RD.,
KHIWAENG PHATTHANAKAN, KHET SUAN LUANG, BANGKOK 10250, THAILAND

DATE OF RECEIVED : 24 May 2022

DATE OF ISSUED : 27 May 2022

Report of calibration screening must not be taken in part. Except complete. Without the approval of the Calibration Laboratory Co., Ltd.

Calibrated By : Suwit Phuanbusabong
Calibration Engineer



Approved By : Mongkol Yotsoontorn
Authorized Signatory
27 May 2022

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q22052251

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edcalibration



CALIBRATION LABORATORY CO., LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yeak 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

REPORT OF CALIBRATION

FOR

NOMENCLATURE : VIBRATION METER
MANUFACTURER : VIBROCK
MODEL / TYPE : V901
SERIAL NO. : 1618 [BKK_FS0856]
DATE OF CALIBRATION : 25 May 2022

ENVIRONMENT CONDITIONS :

Temperature : $(23 \pm 2) ^\circ\text{C}$

Relative Humidity : $(55 \pm 15) \% \text{RH}$

PROCEDURE USED :

This instrument was calibrated under procedure No. CLC-CPEE-08 based on ISO 16063-21 as calibration guideline.
The calibration was performed by using Digital Multimeter, High Resolution Programmable Timer/Counter and Portable Vibration Calibrator which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

- Digital Multimeter, Agilent Technologies Model 34401A S/N. US36044686.
- High Resolution Programmable Timer/Counter, Philips Model PM6680B S/N. SM607101.
- Portable Vibration Calibrator, The Modal Shop Model 9110D S/N. 11424.

TRACEABILITY :

- The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand) Certificate No. EE-0070-21, Due Date 23 July 2022.
- The measurements are traceable to International System of Units (SI), through Aeronautical Radio of Thailand Ltd. Certificate No. 07-0001/22, Due Date 22 February 2023.
- The measurements are traceable to International System of Units (SI), through The Modal Shop, Inc. Certificate No. 2649.01, Due Date 10 November 2022.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2.00$ which for a normal distribution corresponds to a coverage probability of approximately 95 %.
It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2021)"

Certificate No. Q22052251

F3-011-04/01-12

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edcalibration



CALIBRATION LABORATORY CO., LTD.

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Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CONDITION OF CALIBRATION ITEM : GOOD

MEASUREMENT RESULTS : (X) without adjustment () adjustment

CALIBRATION DATA

ACCELERATION RESULT

Test point		Mode	STD Reading	DUC Reading	Correction	Uncertainty
(g)	(frequency)		(g)	(g)	(g)	± (% of rdg.)
1	160 Hz	rms	1.00	1.06	-0.06	1.3
2	160 Hz		2.00	2.08	-0.08	1.0
4	160 Hz		4.00	4.04	-0.04	0.9
6	160 Hz		6.00	5.96	+0.04	0.9
8	160 Hz		8.00	7.91	+0.09	0.9
10	160 Hz		10.00	9.86	+0.14	0.9

This report is valid for the above stated instrument/s only.

End of Certificate

Certificate No. Q22052251

F3-011-04/01-12

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@clccalibration



CALIBRATION LABORATORY CO., LTD.

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Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

REVIEW BY	<i>Mamken P.</i>
APPROVED BY	<i>[Signature]</i>
NEXT CAL. DATE	16/11/23

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : VIBRATION METER
MANUFACTURER : VIBROCK
MODEL / TYPE : V901
SERIAL NO. : 1617 [BKK_FS0855]
CLID. NO. : 25130427
JOB CONTROL NO. : 220512048093

CUSTOMER : ALS LABORATORY GROUP (THAILAND) CO., LTD.

104 PHATTHANAKAN 40, PHATTHANAKAN RD.,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG, BANGKOK 10250, THAILAND

DATE OF RECEIVED : 12 May 2022

DATE OF ISSUED : 18 May 2022

Report of calibration screening must not be taken in part. Except complete. Without the approval of the Calibration Laboratory Co., Ltd.

Calibrated By : Suwit Phuanbusabong
Calibration Engineer

[Signature]



Approved By : Mongkol Yotsoontorn
Authorized Signatory
18 May 2022

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q22048093

F3-011-04/01-12

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@clccalibration



CALIBRATION LABORATORY Co.,LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yeak 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail: sale@cal-laboratory.com

REPORT OF CALIBRATION

FOR

NOMENCLATURE : VIBRATION METER
MANUFACTURER : VIBROCK
MODEL / TYPE : V901
SERIAL NO. : 1617 [BKK_FS0855]
DATE OF CALIBRATION : 16 May 2022

ENVIRONMENT CONDITIONS :

Temperature : $(23 \pm 2) ^\circ\text{C}$ Relative Humidity : $(55 \pm 15) \% \text{RH}$

PROCEDURE USED :

This instrument was calibrated under procedure No. CLC-CPEE-08 based on ISO 16063-21 as calibration guideline.

The calibration was performed by using Digital Multimeter, High Resolution Programmable Timer/Counter and Portable Vibration Calibrator which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

1. Digital Multimeter, Hewlett Packard Model 34401A S/N. 3146A75935.
2. High Resolution Programmable Timer/Counter, Philips Model PM6680B S/N. SM607101.
3. Portable Vibration Calibrator, The Modal Shop Model 9110D S/N. 11424.

TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand) Certificate No. EE-0112-21, Due Date 26 October 2022.
2. The measurements are traceable to International System of Units (SI), through Aeronautical Radio of Thailand Ltd. Certificate No. 07-0001/22, Due Date 22 February 2023.
3. The measurements are traceable to International System of Units (SI), through The Modal Shop, Inc. Certificate No. 2649.01, Due Date 10 November 2022.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2.00$ which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2021)"

Certificate No. Q22048093

F3-011-04/01-12

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gclcalibrator



CALIBRATION LABORATORY Co.,LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yeak 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail: sale@cal-laboratory.com

CONDITION OF CALIBRATION ITEM : GOOD

MEASUREMENT RESULTS : (X) without adjustment () adjustment

CALIBRATION DATA

ACCELERATION RESULT

Test point		Mode	STD Reading	DUC Reading	Correction	Uncertainty
(g)	(frequency)		(g)	(g)	(g)	\pm (% of rdg.)
1	160 Hz	rms	1.00	1.02	-0.02	1.2
2	160 Hz		2.00	2.10	-0.10	1.0
4	160 Hz		4.00	4.14	-0.14	0.9
6	160 Hz		6.00	6.18	-0.18	0.9
8	160 Hz		8.00	8.24	-0.24	0.9
10	160 Hz		10.0	10.3	-0.3	1.0

This report is valid for the above stated instrument/s only.

End of Certificate

Certificate No. Q22048093

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gclcalibrator



CALIBRATION LABORATORY CO., LTD.

2/10-11, 14, 55 Soi Prasert Manukit 29 Yeak 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

REVIEW BY	<i>Thirakorn P.</i>
APPROVED BY	<i>[Signature]</i>
NEXT CAL. DATE	5/1/23

CERTIFICATE OF CALIBRATION

FOR

NOMENCLATURE : VIBRATION METER
MANUFACTURER : VIBROCK
MODEL / TYPE : V901
SERIAL NO. : 1822[BKK_FS0857]
CLID. NO. : 251600663
JOB CONTROL NO. : 210706061407

CUSTOMER : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN RD.,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG, BANGKOK 10250, THAILAND

DATE OF RECEIVED : 06 July 2021

DATE OF ISSUED : 09 July 2021

Report of calibration screening must not be taken in part. Except complete. Without the approval of the Calibration Laboratory Co., Ltd.

Calibrated By : Suwit Phuanbusabong
Calibration Engineer

Approved By : Mongkol Yotsoontorn
Authorized Signatory
09 July 2021



This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q21061407

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calibration



CALIBRATION LABORATORY CO., LTD.

2/10-11, 14, 55 Soi Prasert Manukit 29 Yeak 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

REPORT OF CALIBRATION

FOR

NOMENCLATURE : VIBRATION METER
MANUFACTURER : VIBROCK
MODEL / TYPE : V901
SERIAL NO. : 1822[BKK_FS0857]
DATE OF CALIBRATION : 07 July 2021

ENVIRONMENT CONDITIONS :

Temperature : $(23 \pm 2) ^\circ\text{C}$

Relative Humidity : $(55 \pm 15) \% \text{RH}$

PROCEDURE USED :

This instrument was calibrated under procedure No. WI-305-127 according to ISO 16063-21 as calibration guideline.

The calibration was performed by using Digital Multimeter, High Resolution Programmable Timer/Counter, Accelerometer and Measuring Amplifier which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

- Digital Multimeter, Hewlett Packard Model 34401A S/N. 3146A75935.
- High Resolution Programmable Timer/Counter, Philips Model PM6680B S/N. SM607101.
- Accelerometer with Measuring Amplifier, Brüel & Kjær Model 8305, 2525 S/N. 397018, 2434988.

TRACEABILITY :

- The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand) Certificate No. EE-0138-20, Due Date 21 September 2021.
- The measurements are traceable to International System of Units (SI), through Aeronautical Radio of Thailand Ltd. Certificate No. 07-0002/21, Due Date 04 January 2022.
- The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand) Certificate No. AV-0047-20, Due Date 05 November 2021.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2.00$ which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2013)"

Certificate No. Q21061407

F3-011-04/01-12

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calibration



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CALIBRATION LABORATORY Co., LTD.

2/10-11, 14, 55 Soi Prasert Manukit 29 Yeak 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230

Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail: sale@cal-laboratory.com

CONDITION OF CALIBRATION ITEM : GOOD

MEASUREMENT RESULTS : (X) without adjustment () adjustment

CALIBRATION DATA

ACCELERATION RESULT

Test point		Mode	STD Reading	DUC Reading	Correction	Uncertainty
(g)	(frequency)		(g)	(g)	(g)	\pm (% of rdg.)
1	160 Hz	rms	1.00	1.13	-0.13	1.3
2	160 Hz		2.00	2.24	-0.24	1.0
4	160 Hz		4.00	4.27	-0.27	0.9
6	160 Hz		6.00	6.46	-0.46	0.9
8	160 Hz		8.00	8.61	-0.61	0.9
10	160 Hz		10.0	10.9	-0.9	1.2

This report is valid for the above stated instrument/s only.

End of Certificate

Certificate No. Q21061407

F3-011-04/01-12

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calibration



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 \pm 2.5) °C
 Relative Humidity : (50 \pm 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 Lerngagrakul

Approved by : Malee
 Approved Signatory

(/) Malee Bulkruea
 () Saitip Meangmai
 () Warakorn Lerngagrakul

Issue Date : 15 September 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.

0014000



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.: B520848426	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-85-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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Malu

a 1126274



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 :

PR
Approved Signatory

() Pornthippa Tameyakul
() Malee Bulkruea
(✓) 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.

A 0044607



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-Hygograph	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

- The certificate is valid only to the item calibrated on date and place of calibration.
- True value is converted to true volume at the standard temperature of 20 °C

Calibration result :

Nominal capacity (mL)	Reading (mL)	Uncertainty (\pm 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 %.

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PR

a 1123908



Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoh, 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



NSG-TIS-TIS 17025
CALIBRATION 0244

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 :  / 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 11/701-02-64



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 :

- 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.

FM-L15 117/15-05-63



Metrological Center

SCI ECO Services Company Limited

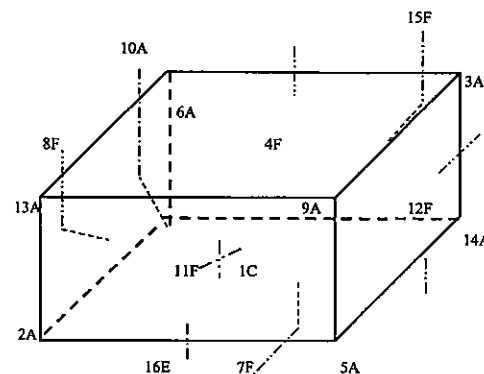
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.



Certificate No. T221644

Page 3 of 4

Calibration Report



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

1C = TN161	11F = TN171
2A = TN162	12F = TN172
3A = TN163	13A = TN173
4F = TN164	14A = TN174
5A = TN165	15F = TN175
6A = TN166	16E = TN176
7F = TN167	
8F = TN168	
9A = TN169	
10A = TN170	

Approved By.

FM-L15 117/15-05-63



Metrological Center

SCI ECO Services Company Limited

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



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 Factor k
	Min , Max	Average					
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:

FM-L15 117/15-05-63



PENTA
CALIBRATION

PENTA CALIBRATION CO., LTD.
66/124 The Connect 33 Village Kanchanaphisek Road
Dokmai Prawet Bangkok 10250
Tel: +66 (0) 2069-9773
www.pentalcal.com

Certificate of Calibration



Represent to Certificate of Calibration ,PTC/07/22071

Certificate No.: PTC/07/22071 Page: 1 of 2
Equipment: Digital Balance Condition: Normal
Manufacturer: Sartorius Serial No: 26207042
Model: MSE224-100-DU ID No: BKK_EN0002
Type of Balance: Single interval

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

Environment Condition: Temperature 21.5 °C ± 0.7 °C
Humidity 61.8 %RH ± 4.7 %RH
Air density 1.19 kg/m³

Calibration Place: ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakarn 40 Phatthanakarn Rd.,
khwaeng Phatthanakarn, Khet Suan Luang, Bangkok 10250.

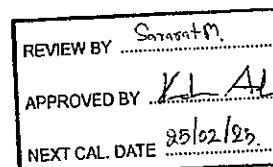
The Method used: In house method, PTC-WI-07, base on Euramet cg. 18
Traceability: This certificate is traceable to the SI Units through Thai Calibration Service Co.,Ltd.
, NSC-ONSC Accreditation No.: Calibration 0189

Date Received: February 25, 2022

Calibration Date: February 25, 2022

Issued Date: March 01, 2022

Calibration By: Mr. Rungroje Metakul



PENTA CALIBRATION CO LTD

(Mr.Kriangsak Kalasri)
Reviewed by

Approved By:
(Mr. Keattisak Kerito)
Laboratory Manager

This certificate is issued the units of measurement according to the International System of Units (SI). It provides traceability of measurement to international or national standard or other recognised national standard laboratories.

The measurement uncertainty stated is the expanded uncertainty which is obtained from the standard uncertainty multiplied by the coverage factor ($k=2$) to provide a level of confidence of approximately 95%. It is determined in accordance with the Guide to Expression of Uncertainty in Measurement (GUM). The effect that the results relate only to the items calibrated.

This calibration certificate shall not be reproduced except in full only, without written approval from penta calibration co., ltd

PTC-FMC-07-02: 2 Feb 2020



PENTA CALIBRATION CO., LTD.
66/124 The Connect 33 Village Kanchanaphisek Road
Dokmai Prawet Bangkok 10250
Tel: +66 (0) 2069-9773
www.pentalcal.com

Represent to Certificate of Calibration ,PTC/07/22071

Certificate No.: PTC/07/22071

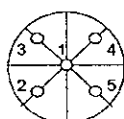
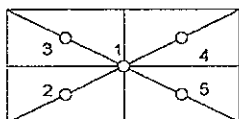
Page: 2 of 2

Measurement Results:

Without Adjustment :

Function Calibration: Non Adjustment

Eccentric Error: Weight to be 1/3 ,1/2 or of Maximum capacity



Eccentricity test 100 (g)				
Position (g)				
1	2	3	4	5
0.0000	-0.0002	-0.0001	0.0001	-0.0001
Maximum deviation: 0.0002				

Repeatability Test : Weight to be $1/2 \leq L_1 \leq$ Maximum capacity

Determination of the standard deviation of weighing balance., Readability 0.0001 (g)

Nominal test value (g)	Standard Deviation
200	0.00005

Error of Indication : from nominal value., Readability 0.0001 (g)

Nominal Value (g)	Conventional Mass (g)	Indication (g)	Correction of Balance (g)	Uncertainty (g)	k
0	0.00000	0.0000	0.0000	0.00016	2.52
0.1	0.10000	0.1000	0.0000	0.00017	2.20
0.5	0.50000	0.5000	0.0000	0.00016	2.28
1	1.00001	1.0000	0.0000	0.00016	2.28
2	2.00001	2.0000	0.0000	0.00016	2.28
5	5.00001	5.0000	0.0000	0.00016	2.28
10	10.00002	10.0000	0.0000	0.00016	2.28
20	20.00002	20.0000	0.0000	0.00016	2.23
50	50.00001	50.0000	0.0000	0.00017	2.15
100	100.00002	99.9999	0.0001	0.00020	2.06
120	120.00004	120.0000	0.0000	0.00023	2.03
150	150.00003	150.0000	0.0000	0.00026	2.00
200	200.00003	199.9999	0.0001	0.00030	2.00

Note: Weight of adjust - (g)

The End of Certificate

PTC-PMC-07-02: 2 Feb 2020



Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhloi, 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. T220139

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 : 26 January 2022

Calibrated By : Watcharapon Sangtong (Technician)

Approved By :  / Sujjar Nakhakred (Site Calibration Manager)

Date of Issue : 08 FEB 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 117/01-02-64



Certificate No. T220139

Page 2 of 3

Calibration Report

Equipment : Liquid Bath (Water)
Date of Calibration : 31 January 2022
Environment : Temperature : 22.4-23.9 °C
Line Voltage : 221.4-225.4 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	M34 (CH1-CH5)	T210115	2 February 2022
DATA LOGGER	34970A	T47	T210115	2 February 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 - Minute At 60 °C

5. Adjustment :

(X) without adjustment () after adjustment

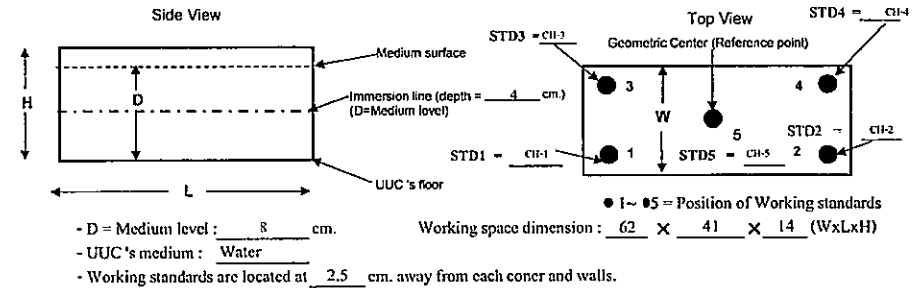
Approved By _____



Certificate No. T220139

Page 3 of 3

Calibration Report



Measurement Results:

Calibration Point	Average Standard Reading at each position (°C)				
	CH-1	CH-2	CH-3	CH-4	CH-5
60	59.95	60.04	60.12	60.01	59.89
85	85.17	84.89	85.34	84.78	84.93
95	93.46	93.14	93.81	93.05	93.28

Liquid Bath (Water)			Temperature Distribution			
Setting (°C)	Reading (°C)		Stability (± °C)	Uniformity (± °C)	Uncertainty (± °C)	Coverage Factor k
	Min , Max	Average				
61.0	60.9 , 61	61.0	0.10	0.19	0.25	2.00
86.0	85.9 , 86.1	86.0	0.12	0.39	0.32	2.06
95.0	94.8 , 95.1	94.9	0.14	0.51	0.38	2.11

* 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.: 21TM1629
Page.: 1 of 3

Certificate of Calibration

Equipment : Hot Air Oven
Manufacturer : Memmert
Model : UFE 500
Serial No. : G511.0314
ID No. : BKK_EN0009

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

Location : Oven Room

Received Order : 2 September 2021
Calibration Date : 2 September 2021
Ambient Temperature : $(26 \pm 10) ^\circ\text{C}$
Relative Humidity : $(50 \pm 30) \%$

Calibrated by : Man Pattanapongpaiboon

Approved by :

Malee
Approved Signatory

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

Issue Date : 14 September 2021

The Uncertainties are for a confidence probability of approximately 95%

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

A 0031775



Equipment : Hot Air Oven
Condition As-Received : Used Item
Reference : 2109-0004OC-1
Procedure Used :-

Cert. No.: 21TM1629
Page.: 2 of 3

Calibration were conducted using calibration procedure CP-OT02 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector (RTD).

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Data Acquisition	34972A	MY57013711	21LM7	16 Jun 2022

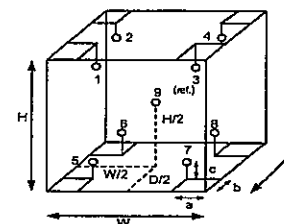
2. This certificate is valid only to the item calibrated on date and place of calibration.

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

Result of Calibration :- () Without Adjustment

Function of UUC* : Temperature Source

Fresh air setting : Close



Probe Installation Details :

a = 5.0 cm
b = 5.0 cm
c = 5.0 cm

Dimension of Chamber :

D = 0.40 m
W = 0.56 m
H = 0.48 m
Capacity = 0.11 m³

Environment during calibration		
	Beginning	Finished
Temp. (°C)	25	25
REL.Humid. (%)	56	58
AC Supply (Volt)	221	222

Position :	Ref. Std. ID No.:
1	18-18RTD-01
2	18-18RTD-02
3	18-18RTD-03
4	18-18RTD-04
5	18-18RTD-05
6	18-18RTD-06
7	18-18RTD-07
8	18-18RTD-08
9 (ref.)	18-18RTD-09

a 1071653



Equipment : Hot Air Oven
Condition As-Received : Used Item
Reference : 2109-0004OC-1
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source
Fresh air setting : Close

Cert. No.: 21TM1629
Page.: 3 of 3

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Uncertainty (± °C)	Coverage Factor k
60.0	60.0	60.0	0.047	0.32	0.52	0.42	2
95.0	95.0	95.0	0.034	0.51	0.83	0.42	2
103.0	103.0	103.0	0.053	0.57	1.0	0.42	2
104.0	104.0	104.0	0.095	0.62	1.1	0.43	2

Calibration Point (°C)	Measured Temperature (°C)								
	Position								
	1	2	3	4	5	6	7	8	9 (ref.)
60.0	59.912	59.968	59.859	59.772	60.200	60.076	60.203	60.120	60.067
95.0	94.767	94.809	94.720	94.582	95.347	95.025	95.098	95.016	94.879
103.0	102.814	102.866	102.712	102.555	103.482	103.204	103.288	103.190	102.976
104.0	103.742	103.794	103.643	103.484	104.486	104.180	104.265	104.154	103.924

Average* : The average of 30 values in each position.

Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.

Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity .

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

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Malee

a 1071652



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.: 22TW122
Page.: 1 of 2

Certificate of Testing

Equipment : DO Meter
Manufacturer : YSI
Model : 5000-230V
Serial No. : 09J101147
ID No. : BKK_EN0017
Received Date : 20 May 2022
Test Date : 24 May 2022
Reference : 2205-0638DSC-8
Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand

REVIEW BY	Siriluk P.
APPROVED BY	K. An
NEXT CAL. DATE	24/11/23

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 : Warakorn Lerngagrakul

Approved by : Malee
Approved Signatory

(/) Malee Butkruea
() Saithip Meangmai
() Warakorn Lerngagrakul

Issue Date : 31 May 2022

B 0285244



Cert.No.: 22TW122
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.: 16K100498

Titration Method (Azide Modification Method) (mg/L)	DO Meter Reading (mg/L)	Standard Deviation (mg/L)
8.12	8.13	0.015

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-

Malu

a 1110482



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.: 22LM83
Page.: 1 of 2

Certificate of Calibration

Equipment : DO Meter with Sensor
Manufacturer : YSI
Model : 5000-230V
Serial No. : 09J 101147
ID No. : BKK_EN0017
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 : 20 May 2022
Calibrated Date : 30 May 2022
Ambient Temperature : (26 ± 10) °C
Relative Humidity : (50 ± 30) %
AC Line Voltage : (220 ± 22) V
Calibrated by : Tawatchai Pama

Approved by : *Malu*
Approved Signatory

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

Issue Date : 31 May 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 0039957



Equipment : DO Meter with Sensor
Condition As-Received : Used Item
Reference : 2205-0638DSC-10
Procedure Used :-

Cert. No.: 22LM83
Page.: 2 of 2

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	A09204	2218	04 Jan 2023

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 thermistor sensor , ID No.: 16K100498

Calibration Point (°C)	Immersion Depth (mm)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty (± °C)	Coverage Factor k
20.00	60	20.003	20.01	0.007	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 %.

-o-o-

Malu -

a 1090806



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



NSG-TIS-TIS 17025
CALIBRATION 6244

Certificate No. T212123

Page 1 of 3

Certificate of Calibration

Equipment : Chamber (Incubator)

Manufacturer : SHEL LAB

Model : 2020-2E

Serial No. : 802899

Customer Code : BKK_EN0005

ID No. : T7499A0

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

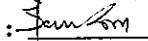
104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,

Khet Suan Luang, Bangkok 10250

Customer Location : Wet Chemistry Lab2

Date of Receipt : 1 October 2021

Calibrated By : Sujjar Naknakred (Site Calibration Manager)

Approved By :  /Boonchai Suriyawong (Site Calibration Manager)

Date of Issue : 07 OCT 2021

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

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

FM-L14 117/01-02-64



Metrological Center

SCI ECO Services Company Limited

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



Certificate No. T212123

Page 2 of 3

Calibration Report

Equipment : Chamber (Incubator)
 Date of Calibration : 4-5 October 2021
 Environment : Temperature : 23.8-24.9 °C
 Line Voltage : 227.5-231.1 V
 Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

- This equipment was calibrated by insert nine resistance thermometer detectors into its chamber , the other one resistance thermometer detector use for ambient temperature measurement . The calibration was done in according to WI-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	29-(CH1-10)	T210118	2 February 2022
DATA LOGGER	34970A	T47	T210118	2 February 2022

3. This certificate is traceable to :

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

4. Condition of calibrated item : good

Equipment Description :

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

5. Adjustment :

() without adjustment

(X) after adjustment

Approved By

FM-L15 117/15-05-63



Metrological Center

SCI ECO Services Company Limited

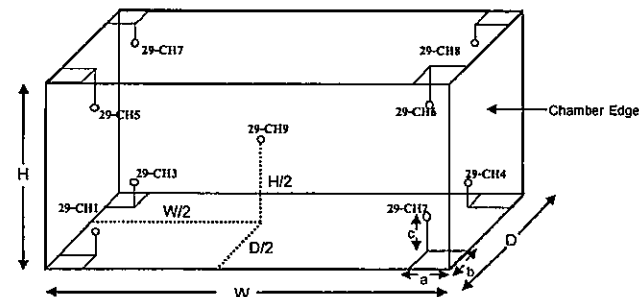
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.



Certificate No. T212123

Page 3 of 3

Calibration Report



Remark :

Internal Dimensions of Chamber : W (Width) = 70 cm., H (Height) = 130 cm. and D (Depth) = 55 cm.
 Size of Installed Standard sensor number 29-CH1 to number 29-CH8 : a = 5 cm., b = 5 cm. and c = 5 cm.
 Size of Installed Standard sensor number 29-CH9 : W/2 = 70 cm./2 , H/2 = 130 cm./2 and D/2 = 55cm./2

Measurement Results

Calibration Point	Average Standard Reading at each position (°C)							
	29-CH1	29-CH2	29-CH3	29-CH4	29-CH5	29-CH6	29-CH7	29-CH8
20	20.04	20.06	20.19	19.86	19.68	20.08	20.12	19.80
25	24.99	25.06	25.18	24.89	24.74	25.12	25.16	24.80

Chamber (Incubator)			Temperature Distribution			
Setting (°C)	Reading (°C)		Stability (± °C)	Uniformity (°C)	Uncertainty (± °C)	Coverage Factor <i>k</i>
	Min , Max	Average				
20.0	-	20.0	0.05	1.01	0.38	2.00
25.0	-	25.0	0.07	0.96	0.38	2.00

* The quoted uncertainty exclude "uniformity"

The calibration result apply only the above calibrated item.

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

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

Approved By

FM-L15 117/15-05-63



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
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Certificate of Calibration

Certificate No. : 22T1689

Page : 1 of 2

Equipment : Digital Thermometer With Sensor

Manufacturer : Testo

Model : 106

Serial No. : 83638005/0122

ID No. : BKK_LG0059

Condition As-Received: New Item

Received Date: 26 August 2022

Calibration Date: 12 September 2022
to 19 September 2022

Reference: 2208-0918DSC

Submitted by: ALS Laboratory Group (Thailand) Co., Ltd.

Ambient Temperature: (25 ± 3) °C

Relative Humidity: (50 ± 20) %

104 Phatthanakan 40, Phatthanakan Rd.,

Khwaeng Phatthanakan, Khet Suan Luang,

Bangkok 10250 Thailand

Procedure used: Calibration were conducted using in-house calibration procedure CP-T01 according to comparison with Industrial Platinum Resistance Thermometer (IPRT) in liquid bath temperature controller.
The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standards Instruments :

Instrument	Model	Serial No.	Certificate No.	Due Date
1) Digital Thermometer	1529	A7A609	2111126	14 Oct 2022
2) Industrial Platinum Resistance Thermometer	5627	824304	2111126	14 Oct 2022

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

3. This Certification is traceable to the International System of Unit maintained at:-

-National Institute of Metrology Thailand (NIMT)

REVIEW BY	<i>Chayathorn P.</i>
APPROVED BY	<i>Manon P.</i>
NEXT CAL. DATE	<i>12/09/22</i>

Calibrated by : Thatchanan Chankong
Issue Date : 22 September 2022

Approved Signatory :

- ☐ Phalinee Prabpaipat
- ☐ Chatchawan Khunpluek
- ☒ Wanlop Larpkum

B 0296889

Cert. No.: 22T1689

Page.: 2 of 2

Result of Calibration:-

Without Adjustment

Function: Temperature measurement

Dimension of probe : Diameter 3 mm., Length 55 mm. Sheath material : Stainless Steel

Immersion	Standard	UUC*		Uncertainty
Depth	Temperature	Reading	Error	of Measurement
(mm.)	(°C)	(°C)	(°C)	(± °C)
50	25.0028	25.0	-0.0028	0.12
50	30.0026	30.0	-0.0026	0.12
50	35.0033	35.0	-0.0033	0.12
50	40.0026	40.1	0.0974	0.12
50	45.0036	45.0	-0.0036	0.12

UUC* : Unit Under Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.

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B 0296890



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TEL. 0-2717-3000-27 FAX. 0-2719-4484



Cert. No.: 22TM676
Page.: 1 of 3

Certificate of Calibration

Equipment : Autoclave
Manufacturer : TOMY
Model : SX-700
Serial No. : 48134190
ID No. : BKK_ML0041

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

Received Order : 20 May 2022
Calibration Date : 20 May 2022
Ambient Temperature : $(26 \pm 10) ^\circ\text{C}$
Relative Humidity : $(50 \pm 30) \%$

Calibrated by : Preecha Hlahib

Approved by :

Approved Signatory

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

Issue Date : 24 May 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 0041435



Equipment : Autoclave
Condition As-Received : Used Item
Reference : 2205-0404OC-2
Procedure Used :-

Cert. No.: 22TM676
Page.: 2 of 3

Calibration were conducted using in-house calibration procedure CP-OT03 according to direct measurement method with Data Acquisition which connected with Thermocouple Type T
The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Data Acquisition	34972A	MY57013823	22LM24	26 Feb 2023

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

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

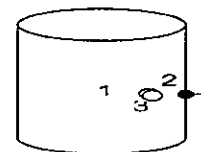
4. This result of calibration covers laboratory autoclaves for the sterilization of goods and material which could be infected with organisms categorized as Hazard Group 1, 2 and 3**

(** = Categorization of pathogens according to hazard and categories of containment, second edition, 1990)
It does not cover autoclaves for use with material infect with organisms in Hazard Group 4, for which complete containment and sterilization of infected condensate is considered to be essential.

This result of calibration does not apply to sterilizers or disinfectors used for medical, dental, pharmaceutical or veterinary purposes which are directly concerned with patient care, or those used for fabrics subjected to sterilization which are required to be dry at the end of cycle.

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source



	Environmental		
	(°C)	(%R.H.)	(Volt)
Beginning of Calibration	24	55	220
Finished of Calibration	26	57	221

Position	Description	Ref. Std. ID No.:
1 =	Center of chamber	19-17TC-11
2 =	Temperature sensor	19-17TC-12
3 =	Exhaust port	19-17TC-13

a 1109670



Equipment : Autoclave
 Condition As-Received : Used Item
 Reference : 2205-0404OC-2
 Result of Calibration :- (*) Without Adjustment

Cert. No.: 22TM676
 Page.: 3 of 3

Operating parameter Set : Temperature = 108 °C
 Sterilization period = 10 minute

UUC* Setting (°C)	UUC* Reading (°C)	Position	Average* Standard Reading (°C)	Stability (± °C)	Pressure Reading (MPa)	Uncertainty (± °C)	Coverage Factor k
108	108	1	107.536	0.19	0.04	0.91	2
		2	107.542				
		3	107.471				

Operating parameter Set : Temperature = 115 °C
 Sterilization period = 20 minute

UUC* Setting (°C)	UUC* Reading (°C)	Position	Average* Standard Reading (°C)	Stability (± °C)	Pressure Reading (MPa)	Uncertainty (± °C)	Coverage Factor k
115	115	1	114.502	0.15	0.08	0.89	2
		2	114.582				
		3	114.539				

Operating parameter Set : Temperature = 118 °C
 Sterilization period = 10 minute

UUC* Setting (°C)	UUC* Reading (°C)	Position	Average* Standard Reading (°C)	Stability (± °C)	Pressure Reading (MPa)	Uncertainty (± °C)	Coverage Factor k
118	118	1	117.517	0.094	0.09	0.88	2
		2	117.616				
		3	117.530				

Result of Calibration :- (*) Without Adjustment

Operating parameter Set : Temperature = 121 °C
 Sterilization period = 30 minute

UUC* Setting (°C)	UUC* Reading (°C)	Position	Average* Standard Reading (°C)	Stability (± °C)	Pressure Reading (MPa)	Uncertainty (± °C)	Coverage Factor k
121	121	1	120.400	0.18	1.1	0.90	2
		2	120.511				
		3	120.465				

Average* : The average of 30 values in each position.

Stability : One-half of the greatest maximum difference of measured temperature at any one probe.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity .

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

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a 1109669



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
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 TEL. 0-2717-3000-27 FAX. 0-2719-9484



Cert. No.: 22TM102
 Page.: 1 of 3

Certificate of Calibration

Equipment : Incubator

Manufacturer : SHEL-LAB

Model : 1915A

Serial No. : 0200599

ID No. : BKK_ML0010

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

Location : Incubation & Micrological Reading

Received Order : 21 January 2022

Calibration Date : 21 January 2022

Ambient Temperature : (26 ± 10) °C

Relative Humidity : (50 ± 30) %

Calibrated by : Krisda Malee

Approved by :
 Approved Signatory

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

Issue Date : 3 February 2022

The Uncertainties are for a confidence probability of approximately 95%

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 Approval of the head of Corporate Services & Equipment Calibration and Testing Services.

A 0037377



Equipment : Incubator
 Condition As-Received : Used Item
 Reference : 2201-0616OC-1

Cert. No.: 22TM102
 Page.: 2 of 3

Procedure Used :-

Calibration were conducted using calibration procedure CP-OT02 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector (RTD).

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Data Acquisition	34972A	MY57013711	21LM7	16 Jun 2022

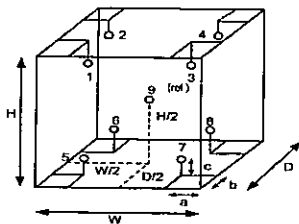
2. This certificate is valid only to the item calibrated on date and place of calibration.

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

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Fresh air setting : Close



Probe Installation Details :

Dimension of Chamber :

a = 10 cm	D = 0.90 m
b = 10 cm	W = 0.75 m
c = 10 cm	H = 1.2 m
	Capacity = 0.81 m³

Environment during calibration		
	Beginning	Finished
Temp. (°C)	26	25
REL.Humid. (%)	53	54
AC Supply (Volt)	220	221

Position :	Ref. Std. ID No.:
1	18-18RTD-01
2	18-18RTD-02
3	18-18RTD-03
4	18-18RTD-04
5	18-18RTD-05
6	18-18RTD-06
7	18-18RTD-07
8	18-18RTD-08
9 (ref.)	18-18RTD-09

Mater.

a 1092309



Equipment : Incubator
 Condition As-Received : Used Item
 Reference : 2201-0616OC-1

Cert. No.: 22TM102
 Page.: 3 of 3

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Fresh air setting : Close

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Uncertainty (± °C)	Coverage Factor k
35.0	35.0	35.0	0.043	0.41	0.42	0.30	2

Calibration Point (°C)	Measured Temperature (°C)							
	Position							
35.0	1	2	3	4	5	6	7	8
	34.801	34.868	34.862	35.012	35.040	35.010	35.084	35.040
								35.178

Average* : The average of 30 values in each position.

Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.

Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity .

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

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Mater.

a 1092308



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
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53/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL. 0-2717-3000-27 FAX. 0-2719-0184



Cert. No.: 21TM1101
Page.: 1 of 3

Certificate of Calibration

Equipment : Hot Air Oven

Manufacturer : Binder

Model : ED240/E2

Serial No. : 00-15533

ID No. : BKK_ML0013

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

Location : Media Preparation Room

Received Order : 7 June 2021
Calibration Date : 7 June 2021
Ambient Temperature : $(26 \pm 10) ^\circ\text{C}$
Relative Humidity : $(50 \pm 30) \%$

Calibrated by : Preecha Hlahib

Approved by :
Approved Signatory

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

Issue Date : 21 June 2021

The Uncertainties are for a confidence probability of approximately 95%

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

A 0029135



Equipment : Hot Air Oven
Condition As-Received : Used Item
Reference : 2106-0101OC-2
Procedure Used :-

Cert. No.: 21TM1101
Page.: 2 of 3

Calibration were conducted using calibration procedure CP-OT02 according to direct measurement method with Data Acquisition which connected with Thermocouple Type T.

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Data Acquisition	34972A	MY57013823	21LM3	26 Feb 2022

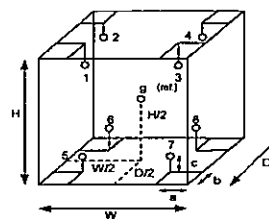
2. This certificate is valid only to the item calibrated on date and place of calibration.

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

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Fresh air setting : Close



Probe Installation Details :	Dimension of Chamber :
a = 5.0 cm	D = 0.50 m
b = 5.0 cm	W = 0.80 m
c = 5.0 cm	H = 0.60 m
	Capacity = 0.24 m ³

Environment during calibration		
	Beginning	Finished
Temp. (°C)	26	27
REL.Humid. (%)	65	72
AC Supply (Volt)	220	222

Position :	Ref. Std. ID No.:
1	19-17TC-01
2	19-17TC-02
3	19-17TC-03
4	19-17TC-04
5	19-17TC-05
6	19-17TC-06
7	19-17TC-07
8	19-17TC-08
9 (ref.)	19-17TC-09

a 1059245



Equipment : Hot Air Oven
Condition As-Received : Used Item
Reference : 2106-0101OC-2
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source

Cert. No.: 21TM1101
Page.: 3 of 3

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Uncertainty (± °C)	Coverage Factor <i>k</i>
180	180	180	0.67	2.4	3.3	1.5	2

Calibration Point (°C)	Measured Temperature (°C)								
	Position								
	1	2	3	4	5	6	7	8	9 (ref.)
180	179.315	181.249	178.684	180.035	179.941	180.511	178.429	180.268	179.065

Average* : The average of 30 values in each position.

Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.

Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity .

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

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Melu

ภาคผนวก จ

สำเนาหนังสืออนุญาตขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน



ที่ อก ๐๓๑๐(๑)/ ๑๐ ๖ ๙

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ เขตราชเทวี
กรุงเทพมหานคร ๑๐๔๐๐

๒๘ มกราคม ๒๕๖๕

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
เรียน กรรมการผู้จัดการ บริษัท แอลเอส 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 แอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ขอต่ออายุ
หนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔
ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร
ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท แอลเอส 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 น้ำได้ดิน
จำนวน ๑๒๖ รายการ อากาศเสีย ๑๖ รายการ สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว 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 จันทร์เจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติการทางพิษวิทยากรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๒๐๒ ๔๑๔๖ ๐ ๒๒๐๒ ๔๐๐๒

โทรสาร ๐ ๒๓๕๔ ๓๒๐๘ ๐ ๒๓๕๔ ๓๔๑๕

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท แอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ว-๒๐๔

ที่ อก ๐๓๑๐(๑)/

ลงวันที่ ๒๘ มกราคม ๒๕๖๕

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๖ ราย

๑) นางสาวยุพพร จันทร์ปลั่ง

ทะเบียนเลขที่ ว-๒๐๔-ค-๔๗๐๐

๒) นางสาวชัชชัย 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 ชุมพรี

ทะเบียนเลขที่ ว-๒๐๔-ค-๖๑๑๓

๒๒๒

(นายศิระ จันทร์เจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติการทางพิษวิทยากรมโรงงานอุตสาหกรรม

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ๖-๒๐๔

ที่ อก ๐๓๑๐(๑) ๑๐๖๕

ลงวันที่ ๒๘ มกราคม ๒๕๖๕

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๖๒ ราย

๑) นางสาวจินดา โขจุลธรรม	ทะเบียนเลขที่ ๖-๒๐๔-จ-๔๗๐๘
๒) นางสาวสววิตรี น้อยเสงี่ยม	ทะเบียนเลขที่ ๖-๒๐๔-จ-๔๗๐๙
๓) นางสาวชนัญญาญจน์ อิ่มชม	ทะเบียนเลขที่ ๖-๒๐๔-จ-๔๗๑๐
๔) นางสาวนรินทร์ สายเส็ง	ทะเบียนเลขที่ ๖-๒๐๔-จ-๔๗๑๕
๕) นางสาวนันทวี สมบูรณ์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๔๗๑๖
๖) นางสาวศรัณญา เกลิมธำรงค์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๔๗๑๗
๗) นางสาวสรารักษ์ มงคลจิรวุฒิ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๔๗๑๙
๘) นางสาวศิริลักษณ์ พึ่งแพง	ทะเบียนเลขที่ ๖-๒๐๔-จ-๔๗๒๐
๙) นายบพพงศ์ จันททรัพย์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๐๘
๑๐) นายบรเศรษฐ์ โกมลาลัย	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๑๑
๑๑) นายธินา จริยา	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๑๔
๑๒) นางสาวเกศรินทร์ แก้วมัน	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๑๖
๑๓) นางสาวสุวิมล ขี้เรือจุล	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๑๗
๑๔) นางสาวสุชาดา ธรรมถาวร	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๒๑
๑๕) นางสาวเมลิภา ชัยเดชอนกุล	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๒๓
๑๖) นางสาวศศิธร หมุสวีสดี	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๒๔
๑๗) นางสาวเสาวลักษณ์ ภูนาอำพร	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๒๕
๑๘) นายอภิสิทธิ์ สิงหา	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๒๖
๑๙) นายศักดิ์สิทธิ์ โพธิ์สัพพ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๒๗
๒๐) ว่าที่ร้อยตรีหญิง พรรณิภา จำเจริญ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๒๘
๒๑) นางจิตตา คำแก้ว	ทะเบียนเลขที่ ๖-๒๐๔-จ-๕๕๓๑
๒๒) นางสาวอรรพรรณ รักยง	ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๑๕
๒๓) นางสาวนพรัตน์ แยมกรานต์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๑๙
๒๔) นายจุลเดช วาจิรินทร์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๒๐
๒๕) นางสาวดาญรัตน์ ร้องคำ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๒๑
๒๖) นายนคร สุขเจริญ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๒๒
๒๗) นายปัญญา นามเขตต์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๒๓
๒๘) นายพรมมี ศรีปัดเนตร	ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๒๕
๒๙) นายอุทิศ อุ่นลิ้ม	ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๒๖
๓๐) ว่าที่ร้อยตรี เกลิมเกียรติ อมรศรีเสริม	ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๒๘
๓๑) นางสาววริยา สร้างนา	ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๒๙
๓๒) นายอนุพงษ์ รัตนศรีประเสริฐ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๓๐
๓๓) นางสาวจุฑารัตน์ โอนสันเทียะ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๔๒
๓๔) นางสาวจารุวรรณ พิมพ์อังกฤตยา	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๗๖

(นายศิระ จันทร์นิค)

๓๕) นางสาวปรังคิทธิ...

มหาวิทยาลัยราชภัฏวชิรเวศน์ วิทยาเขตขอนแก่น
ผู้อำนวยการกองวิจัยและพัฒนาระบบงาน
ปณิธานของมหาวิทยาลัยราชภัฏวชิรเวศน์

- ๒ -

๓๕) นางสาวปรังคิทธิ กิจไพศาลศักดิ์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๗๙
๓๖) นางสาวเดือนใจ ทางกลาง	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๘๐
๓๗) นางสาวจิราพร ศิริเวช	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๘๒
๓๘) นายวรารกร ผูกรักษ์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๘๓
๓๙) นายทง วีริยะสทกิจ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๘๔
๔๐) นายธนิธ เจนจบ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๘๕
๔๑) นายคณิศร ข้าเพชร	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๘๖
๔๒) นายอรรคพล นิยมวิทยาพันธ์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๘๗
๔๓) นายภูวิช พรหมสะอาด	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๘๘
๔๔) นายธนาเดช โกศาพิพัฒน์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๘๙
๔๕) นายชวฤทธิ์ วงษ์จันทร์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๙๐
๔๖) นายอาทิตย์ ศรีเสน	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๙๑
๔๗) นายเจษฎินทร์ คงศักดิ์ไทย	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๙๒
๔๘) นายจรัส บุญยั้ง	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๙๕
๔๙) นายธนาธิป เอนก	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๙๖
๕๐) นายอภิวัฒน์ ทุมพู	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๙๗
๕๑) นางสาวสุภาภรณ์ มาก	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๙๘
๕๒) นางสาวทัศนพร ขวาลสมบุรณ์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๐๐
๕๓) นางสาวธิดา บุญเพ็ง	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๐๑
๕๔) นางสาวกนกพร เข้มเพ็ชร	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๐๒
๕๕) นางสาวพัชรียา หงษ์สมดี	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๐๓
๕๖) นางสาวภาณิดา สุรวงศ์ตระกูล	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๐๔
๕๗) นางสาวภาณุมาศ นามวัฒน์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๐๕
๕๘) นางสาวอุไรรัตน์ ทิพย์สร้างแป้น	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๐๖
๕๙) นายธีรวัฒน์ ปวงสุข	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๐๗
๖๐) นายอิทธิพล ยะโส	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๐๘
๖๑) นายประพนธ์ วรรณชูชัย	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๐๙
๖๒) นายชยธร พวงทิพย์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๑๐
๖๓) นางสาวกนกวรรณ จันทบาล	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๑๑
๖๔) นางสาวเกษร หลีกบุญ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๑๒
๖๕) นายสิทธิโชค ธงเงิน	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๑๓
๖๖) นางศิวารมณ ใจบุญ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๐๕
๖๗) นางสาวพรรณธิดา ทุมคง	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๐๘
๖๘) นางสาวศรณีย์ ยิ่งดี	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๐๙
๖๙) นายนวกัทร ศรีวิริยะ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๑๐
๗๐) นายสุวิชา ทองอ่อน	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๑๑
๗๑) นายวิญญู บุญตะน้อย	ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๑๓

(นายศิระ จันทร์นิค)

๗๒) นายสมบุรณ์...

มหาวิทยาลัยราชภัฏวชิรเวศน์ วิทยาเขตขอนแก่น
ผู้อำนวยการกองวิจัยและพัฒนาระบบงาน
ปณิธานของมหาวิทยาลัยราชภัฏวชิรเวศน์

๗๒) นายสมบุญ บุตรจันทร์
๗๓) นายวิรัตน์ ไชยชนะ
๗๔) นายอนุคน เทมพูน
๗๕) นายจิรณัฐ ขาวละออ
๗๖) นายสมโภช วันสา
๗๗) นายอัสรี นามบุรี
๗๘) นายณัฐนันท์ ปานประเสริฐ
๗๙) นายอัครเวศ จ่อสาว
๘๐) นายประเสริฐ สุระขันธ
๘๑) นายบุญลุด จันทน์นิยม
๘๒) นายพิรพงษ์ ทองคุณปรีดา
๘๓) นายณฤพล ทองนุช
๘๔) นายอนุวัฒน์ ม่วงแพ
๘๕) นายเจตศราวุฒิ ปิตตะมะ
๘๖) นายกฤษณะ สายวรรณ
๘๗) นายพิชัย บุญยงค์
๘๘) นายภาณุพงศ์ ไหมวงศ์
๘๙) นายสามารถ คุ่มปลี
๙๐) นายสัณชัย โกศรินาม
๙๑) นายณัฐวุฒิ ศรีประเสริฐ
๙๒) นายชวลิตชัย นาคพนม
๙๓) นายพงศ์ธร ชัยทิพย์
๙๔) ว่าที่ร้อยตรี ภาณุพงศ์ แสนศรี
๙๕) นายสิทธิโชค ทาสีดา
๙๖) นายธนากร อินสุตา
๙๗) นางสาววรรณิษา ขาติวันชัย
๙๘) นางสาวพิมพ์ตะวัน มีนาถ
๙๙) นางสาวเพชรรัตน์ สิงห์สมบูรณ์
๑๐๐) นางสาวชญาณีน พรหมจันทร์
๑๐๑) นายกิตติ ทวีราช
๑๐๒) นายจักริน หมั่นวิชา
๑๐๓) นายฉัตรชัย สุขเปี้ย
๑๐๔) นายณรนต์ ต๊ะทองคำ
๑๐๕) นายคุณพล สมนอก
๑๐๖) นายทักษ์ชัย อุบลศรี
๑๐๗) นายธนศร นามะกฤษณ์
๑๐๘) นายจิตพงศ์ บัวแดง

ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๑๔
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(นายศิระ จันทรเจ็ด)

มหาวิทยาลัยราชภัฏวชิรเวศน์ วิทยาเขตขอนแก่น
ผู้อำนวยการกองวิจัยและพัฒนามหาวิทยาลัยราชภัฏวชิรเวศน์
มหาวิทยาลัยราชภัฏวชิรเวศน์ วิทยาเขตขอนแก่น

๑๐๙) นายณนทชัย...

๑๐๙) นายณนทชัย อุปลิมภ
๑๑๐) นายณัฐพล คุณสุทธิ
๑๑๑) นายณัฏฐ์ ศาโร
๑๑๒) นายปิยะนัฐ พลมะศรี
๑๑๓) นายพงศ์ศิริ โสมเขียว
๑๑๔) นายพิรพัฒน์ กำคำ
๑๑๕) นายภาณุพงศ์ มานิตย์
๑๑๖) นายมงคล ผลาพิทย์
๑๑๗) นายมนิพัทธ์ พูลศิริ
๑๑๘) นายสิรินันท์ ทองอิน
๑๑๙) นายอนเนชา หันสมัย
๑๒๐) นายอดิศักดิ์ ผมไผ
๑๒๑) นายอนันตชัย วิสม
๑๒๒) นายณัฐดนัย เจือละออ
๑๒๓) นายวรวิธ คันทัก
๑๒๔) นายแสงตะวัน นทะสัด
๑๒๕) นายยุทธพงศ์ รัตนะ
๑๒๖) นายชัยวุฒิ ไชยชนะ
๑๒๗) นายวิศรุต ศรีธรรมมา
๑๒๘) นายณนทกร เมื่อภอง
๑๒๙) นายกำชัย สุทธิ
๑๓๐) นางสาวณัฐภรณ์ รักทะเล
๑๓๑) นางสาวประภาภรณ์ บุตรพรหม
๑๓๒) นางสาวนิลาวัลย์ นามพรหม
๑๓๓) นางสาวพัชรินทร์ แสนศรี
๑๓๔) นายไพรัชย์ เปี่ยมพิมาย
๑๓๕) นางสาวศุภมาศ ทองมาก
๑๓๖) นางสาวลลิตา จิตรสว่าง
๑๓๗) นางสาวไมพร เล็กอุเขียว
๑๓๘) นางสาวกฤติมาพร คำมีแก่น
๑๓๙) นางสาวสกลรัตน์ ภาณุภูมิ
๑๔๐) นางสาวกาญจนา คงคุณ
๑๔๑) นางสาวไพรินทร์ ศรีบุรี
๑๔๒) นางสาวทิพนันดา ผุยปัญญา
๑๔๓) นางสาวสาธิตา ปานทอง
๑๔๔) นางสาวอริสา ทองนวล
๑๔๕) นางสาวอรยา คำค้ำ

ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๔๔
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ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๗๔

(นายศิระ จันทรเจ็ด)

มหาวิทยาลัยราชภัฏวชิรเวศน์ วิทยาเขตขอนแก่น
ผู้อำนวยการกองวิจัยและพัฒนามหาวิทยาลัยราชภัฏวชิรเวศน์
มหาวิทยาลัยราชภัฏวชิรเวศน์ วิทยาเขตขอนแก่น

๑๔๖) นางสาวชุตานภรณ์...

๑๔๖) นางสาวสุดาภรณ์ สุนทรสนาน	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๓๔
๑๔๗) นางสาวสุดารัตน์ นนทประสาท	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๓๖
๑๔๘) นางสาวรัชนิกร เนียมกลาง	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๓๗
๑๔๙) นางสาวกัญญารัตน์ ศรีนิลหา	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๓๘
๑๕๐) นางสาวอัญชลี คำจันทร์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๓๙
๑๕๑) นายบุญฤทธิ์ เอี่ยมเทศ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๐
๑๕๒) นายศิริวัฒน์ พานิชย์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๑
๑๕๓) นางสาวศุภรดา ปันมยุรา	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๒
๑๕๔) นางสาวพาฤดี คุณน่าน	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๓
๑๕๕) นางสาวจิราเจต พองดา	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๔
๑๕๖) นางสาวกนกภรณ์ อูระ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๕
๑๕๗) นางสาวอารยา มีชัย	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๖
๑๕๘) นางสาวจิตสุภา ประเทืองสุข	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๗
๑๕๙) นางสาวอริสา วิริยขันติธรรม	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๘
๑๖๐) นางสาววิษุตา นาคผจญ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๙
๑๖๑) นางสาวพนิดา ยอดอินทร์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๕๐
๑๖๒) นางสาวนันทิยา จันทะสุน	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๕๑



(นายศิระ จันทะสุน)
นักวิทยาศาสตร์ชำนาญการพิเศษ วิชาการการแพทย์
ผู้อำนวยการกองวิจัยและเฝ้าระวังมลพิษ
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอนแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ๖-๒๐๔

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 ฉัตรสุกวิไล)

19 Copper...

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
และทะเบียนห้องปฏิบัติการ

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 ⁽⁹⁾
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⁾

วิมล
(นางวิภาญณ์ นัครฤทธิไค)
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กรมส่งเสริมการค้าระหว่างประเทศ

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⁾


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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⁾

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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⁾


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18 Bis(2-ethylhexyl)phthalate...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
18	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
21	Butanol	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾ 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⁾


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34 Chromium (III)...

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⁾

51

cis-1,2-Dichloroethylene...

(นางวิภาณูจน์ ด้ตรสกุลวิไล)

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กรมควบคุมมลพิษ

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⁾

68

Fluorene...

(นางวิภาณูจน์ ด้ตรสกุลวิไล)

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กรมควบคุมมลพิษ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
68	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
69	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
70	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
71	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
73	n-Hexane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
74	α-HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
75	β-HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
76	γ-HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
77	Hexachlorocyclopentadiene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
78	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
79	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
80	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
81	Lead	1) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ⁽⁴⁾
82	Manganese	1) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ⁽⁴⁾
83	Mercury	1) Cold Vapor Atomic Absorption Spectrometric Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ⁽⁴⁾

วิมล

84 Methanol...

(นางวิภาณูจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการศูนย์มาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
กระทรวงทรัพยากรธรรมชาติและสิ่งแวดล้อม

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
84	Methanol	1) Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾ 2) Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
85	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
86	Methyl Bromide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
87	Methylene Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
88	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
89	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
90	Methyl tert-Butyl Ether	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
91	Naphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
92	Nickel	1) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ⁽⁴⁾
93	Nitrobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
94	N-Nitrosodiphenylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
95	N-Nitrosodi-n-Propylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
96	Polychlorinated Biphenyls - PCB 1016 - PCB 1221 - PCB 1232 - PCB 1242 - PCB 1248 - PCB 1254 - PCB 1260	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾

วิมล

97 Pentachlorophenol...

(นางวิภาณูจน์ ฉัตรสกุลวิไล)

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กระทรวงทรัพยากรธรรมชาติและสิ่งแวดล้อม

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]

วิธีพิมพ์

114 1,1,2-Trichloroethane...

(นางริกาญจน์ ฉัตรสกุลวิไล)

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และทะเบียนมลพิษปฏิบัติการ

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]

เอกสารเสีย (ปล่องระบาย) จำนวน 16 รายการ

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


วิธีพิมพ์

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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สิ่งปฏิกูล...

สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว 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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 และทะเบียนห้องปฏิบัติการ

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)

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กรมควบคุมมลพิษ

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)

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กรมควบคุมมลพิษ

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	2) Soxhlet Extraction, Gas Chromatographic Method ^(10,22) 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^(22,31) 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/Mass Spectrometric 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)

วิธีวิเคราะห์

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⁾ 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,9,25)
24	Mirex	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) 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)


วิธีวิเคราะห์

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',4,5,5'-Pentachlorobiphenyl - 2,3,3',4'-Pentachlorobiphenyl - 2,2',3,4',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',5,6-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 ^(1,9,23) 2) Soxhlet Extraction, Gas Chromatographic Method ^(10,22) 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^(22,31)
29	pH	Electrometric Method ^(129,30)
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 ^(1,9,23) 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)

ฉันทนา
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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...

(นางริกาญจน์ ฉัตรสกุลวิไล)

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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...

(นางริกาญจน์ ฉัตรสกุลวิไล)

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

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- Aroclor 1242...

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'-Pentachlorobiphenyl - 2,3,3',4'-Pentachlorobiphenyl - 2,2',3,4,5'-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',5,6-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]

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และทะเบียนห้องปฏิบัติการ

101 Selenium...

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 ^[11,22] 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 ₃₃)	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]

วิทย์

116 2,4,6-Trichlorophenol...

(นางจิราภรณ์ ด้ตรสกลวิไล)

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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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
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
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กรมโรงงานอุตสาหกรรม

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ กองวิจัยและเตือนภัยมลพิษโรงงาน กรมโรงงานอุตสาหกรรม โทร. ๐ ๒๖๐๒ ๔๐๐๒, ๔๐๔๖