Issue date: 23 June 2025
Valid Until: -

NO: SAMM 778
(Issue 2, 23 June 2025 replacement
of SAMM 778 dated 13 November 2024)

LABORATORY LOCATION/ CENTRAL OFFICE:	T & T Borneo Laboratory Sdn. Bhd. Ground Floor, Sublot 20, Lot 5575, Kuching City Mall, New Expressway 4.5 Miles, Off Penrissen Road, 93250 Kuching, Sarawak , 93250, SARAWAK MALAYSIA
ACCREDITED SINCE :	23 JUNE 2025
FIELD(S) OF TESTING:	CHEMICAL MICROBIOLOGICAL

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

CENTRAL LOCATION:	T & T Borneo Laboratory Sdn. Bhd. Ground Floor, Sublot 20, Lot 5575, Kuching City Mall, New Expressway 4.5 Miles, Off Penrissen Road, 93250 Kuching, Sarawak , 93250, Sarawak
FIELD(S) OF TESTING :	CHEMICAL, MICROBIOLOGICAL

SCOPE OF TESTING : CHEMICAL

Material / Product Tested	**Type Of Test / Properties Measured / Range Of Measurement**	**Standard Test Methods / Equipment / Techniques**
Water Industrial Effluent Wastewater surface Water portable Water Reverse Osmosis Water	pH	APHA 4500-H+ B (2005, 2017)
	Total Suspended Solids	APHA 2540 D (2005, 2017)
Water Industrial Effluent wastewater Surface Water	Biochemical Oxygen Demand (BOD 5 days)	APHA 5210 B, APHA 4500-O G (2005, 2017)
	Chemical Oxygen Demand (COD)	APHA 5220 C (2005, 2017)
Water	Free Chlorine	APHA 4500-Cl G (2017)

Issue date: 23 June 2025
Valid Until: -

NO: SAMM 778
(Issue 2, 23 June 2025 replacement
of SAMM 778 dated 13 November 2024)

Material / Product Tested	**Type Of Test / Properties Measured / Range Of Measurement**	**Standard Test Methods / Equipment / Techniques**
Potable Water/ Drinking Water tap Water	Colour	APHA 2120 B (2017)
Water Potable Water/ Drinking Water reverse Osmosis Water	Aluminium	APHA 3120 B, 23rd Ed (2017)
	Cadmium	APHA 3120 B, 23rd Ed (2017)
	Chromium	APHA 3120 B, 23rd Ed (2017)
	Lead	APHA 3120 B, 23rd Ed (2017)
	Manganese	APHA 3120 B, 23rd Ed (2017)
	Silver	APHA 3120 B, 23rd Ed (2017)
	Zinc	APHA 3120 B, 23rd Ed (2017)
Water Potable Water/ Drinking Water tap Water wastewater Effluent surface Water	Total Dissolved Solid	APHA 2540 C,21st Ed (2005), 23rd Ed (2017)
	Total Solid	APHA 2540 B,21st Ed (2005), 23rd Ed (2017)
	Nitrate	APHA 4500 NO3 - B, 23rd Ed (2017)
	Nitrite	APHA 4500 NO2 - B, 23rd Ed (2017)
	Phosphorus	APHA 4500-P B & C, 23rd Ed (2017)
	Oil and Grease	APHA 5520 B, 21st Ed (2005)
	Ammoniacal Nitrogen	APHA 4500 NH3 B & C, 23rd Ed (2017)
	Conductivity	APHA 2510 B, 23rd Ed (2017)
	Salinity	APHA 2520 B, 23rd Ed (2017)
	Chloride	APHA 4500 Cl B, 23rd Ed (2017)
	Total Alkalinity	APHA 2320 B, 23rd Ed (2017)
	Turbidity	APHA 2130 B, 23rd Ed (2017)
	Copper	APHA 3111 B, 23rd (2017)
	Calcium	APHA 3111 B, 23rd (2017)
	Magnesium	APHA 3111 B, 23rd Ed (2017)
	Iron	APHA 3111 B, 23rd Ed (2017)
	Sodium	APHA 3111 B, 23rd Ed (2017)
	Potassium	APHA 3111 B, 23rd Ed (2017)
	Manganese	APHA 3111 B, 23rd Ed (2017)
	Hardness (as CaCO3)	APHA 2340 B, 23rd Ed (2017)
	Mercury	APHA 3112 B, 23rd Ed (2017)
	Arsenic	APHA 3114 C, 23rd Ed (2017)
	Fluoride	APHA 4500-F D (2017)
Feed	Moisture	AOAC 930.15 (2010)
	Ash	AOAC 942.05 (2010)
	Crude Fiber	AOAC 978.10 (2010)
	Fat (Crude)	AOAC 920.39 (2010)
	Protein (Crude)	AOAC 2001.11 (2010)

NO: SAMM 778
(Issue 2, 23 June 2025 replacement
of SAMM 778 dated 13 November 2024)

Material / Product Tested	**Type Of Test / Properties Measured / Range Of Measurement**	**Standard Test Methods / Equipment / Techniques**
	Sodium Potassium Calcium Magnesium Iron Copper	AOAC 968.08 (2005)
	Phosphorus	In-house method TM TT-FE02004 based on AOAC 965.17 (2005)
Foods	Moisture	AOAC 984.25 (2010)
	Ash	In-house method TM TT-FD02002 based on AOAC 923.03 & AOAC 940.26 (2010)
	Total Sugar	AOAC 968.28 (2010)
	Carbohydrate & Energy	Method of Analysis for Nutrition Labelling, AOAC 1993 Page 5 & 106
	Salt	AOAC 960.29 (2011)
	Fat (Crude)	In-house method TM TT-FD02004 based on AOAC 920.39 (2010)
	Protein	In-house method TM TT-FD02003 based on AOAC 2001.11 (2010)
	Sodium Potassium Calcium Magnesium Iron Copper	In-house method TM TT-FE02003 based on AOAC 968.08 (2005)
	Phosphorus	In-house method TM TT-FE02004 based on AOAC 965.17 (2005)
	Arsenic	In-house method TM TT-FD02013 based on AOAC 971.21 (2005)
	Mercury	In-house method TM TT-FD02012 based on AOAC 971.21 (2005)
	Lead Cadmium	In-house method TM TT-FD02011 based on AOAC 999.11 (2006)
	Antimony Tin	In-house method TM TT-FD02010 based on AOAC 985.01 (2005)
	Sulphur dioxide	Buchi Application Note No. 229/2016
Dairy Products	Fat	AOAC 989.05 (2011)
Palm Oil Mill Effluent	Biochemical Oxygen Demand (BOD3 days)	DOE, 2019 Alternative Method
Palm Oil & Palm Oil Products	Free Fatty Acid	MPOB p2.5:2004
	Iodine Value	MPOB p3.2:2004
	Peroxide Value	MPOB p2.3:2004
	Moisture and Volatile Matter	MPOB p2.1 Part 1:2004
	Deterioration of Bleachability Index (DOBI)	MPOB p2.9:2004

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Fertilizer	Ash	MS 417: Part 2: 1994
	Calcium (as CaO)	MS 417: Part 8: 1997
	Potassium (as K2O)	MS 417: Part 5: 1994
	Magnesium (as MgO)	MS 417: Part 6: 1994, Clause 5&7
	Moisture	MS 417: Part 2: 1994, Method 1
	Nitrogen	In-house method TM TT-FT02005 based on Buchi Application Note 041/2010
	Phosphorus (as P2O5)	MS 417: Part 4: 1994, Method 1
Soil	pH value (6% w/v solution)	MS 2457:2012
	Conductivity	MS 2458:2012
	Total Organic Carbon	MS 2469:2012
	Nitrogen	In-house method TM TT-FT02005 based on Buchi Application Note 041/2010
	C:N ratio	In-house method TM TT-FT02008 based on TM TT-FT02005 and MS 2469:2012

SCOPE OF TESTING : MICROBIOLOGICAL

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Foods And Feeds	Total Plate Count	AOAC 966.23 (2005)
	Coliform and Escherichia coli (MPN)	AOAC 966.24 (2005)
	Coliform and Escherichia coli Count (Petrifilm)	AOAC 998.08 (2005)
	Coliform and Escherichia coli Count (Rapid Petrifilm)	AOAC 2018.13 (2018)
	Total Yeasts and Moulds	FDA Bacteriological Analytical Method, Chapter 18 (2001)
	Yeast and Mould Count (Petrifilm)	AOAC 997.02 (2005)
	Detection of Salmonella	AOAC 995.20 (2005)
Foods	Staphylococcus aureus Count	AOAC 975.55 (2005)
	Lactobacillus Count	In-house method, TM-TT-FD03007, Based on Merck Microbiology Manual 12th Edition (2010)
	Detection of Listeria monocytogenes	FDA Bacteriological Analytical Method, Chapter 10 (2017)
	Campylobacter spp. Count	ISO 10272-2:2017

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NO: SAMM 778
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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Bacillus cereus Count	In-house method TM TT-FD03012 based on FDA BAM Chapter 14 (2020)
	Enterobacteriaceae Count	AOAC 2003.01 (2006)
	Vibrio Parahaemolyticus	FDA BAM Chapter 9, 2004
	Vibrio Cholera	FDA BAM Chapter 9, 2004
	Coliform Count (Solid Medium Method)	In-house method, TM-TT-FD03015 based on FDA BAM Chapter 4 (2020)
	Escherichia coli Count (Solid Medium Method)	In-house method, TM-TT-FD03015 based on FDA BAM Chapter 4 (2020)
Water	Total Heterotropic Plate Count	APHA 9215 B (2012)
	Total Heterotrophic Plate Count (Membrane Filtration)	APHA 9215 D (2012)
	Total Coliform Count	APHA 9221 B (2012)
	Escherichia coli count	APHA 9221 B & 9221 F (2012)
	Fecal Enterococcus/Streptococcus Count	APHA 9230 B (2012)
	Pseudomonas aeruginosa Count	APHA 9213 E (2012)
	Detection of Clostridium perfringens	ISO 14189 (2013)
	Sulfite-reducing Anaerobes (Clostridia)	ISO 6461/2 (1986)
	Legionella spp.	AS/NZS 3896:2008
	Fecal Coliform Count (MPN Method)	APHA 9221 E/F (2023)
	Fecal Streptococcus and Enterococcus Count (Membrane Filtration)	APHA 9230 C (2023)
Settled Plates (for Air Sampling)	Total plate count	In-house method TM TT-MS03002 based on Compendium of Methods for the Microbiological Examination of Foods, 5th Edition 2015, Chapter 3
	Total yeast and mould count	In-house method TM TT-MS03002 based on Compendium of Methods for the Microbiological Examination of Foods, 5th Edition 2015, Chapter 3
	Coliform count	In-house method TM TT-MS03002 based on Compendium of Methods for the Microbiological Examination of Foods, 5th Edition 2015, Chapter 3

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Material / Product Tested	**Type Of Test / Properties Measured / Range Of Measurement**	**Standard Test Methods / Equipment / Techniques**
	Escherichia coli count	In-house method TM TT-MS03002 based on Compendium of Methods for the Microbiological Examination of Foods, 5th Edition 2015, Chapter 3
Surface Swab, Hand Swab	Total plate count Total yeast and mould count Coliform count Escherichia coli count Staphylococcus aureus count Salmonella spp. Listeria spp. Enterobacteriaceae Lactic acid bacteria Pseudomonas aeruginosa Clostridium perfringens Bacillus cereus	In-house method TM TT-MS03002 based on Compendium of Methods for the Microbiological Examination of Foods, 5th Edition 2015, Chapter 3