

Schedule

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LABORATORY LOCATION/ CENTRAL OFFICE:	E S Laboratories (M) Sdn Bhd No. 18, Jalan Tago 11 Tago Industrial Park Sri Damansara , 52200, WILAYAH PERSEKUTUAN KUALA LUMPUR MALAYSIA
	
ACCREDITED SINCE :	28 APRIL 2025
FIELD(S) OF TESTING:	CHEMICAL MICROBIOLOGICAL
SITE:	
1 . SITE LABORATORY(HQ) :	CATEGORY I, No. 18, Jalan Tago 11 Tago Industrial Park Sri Damansara 52200 WP Kuala Lumpur, MALAYSIA
FIELD(S) OF TESTING :	CHEMICAL,MECHANICAL

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:	E S Laboratories (M) Sdn Bhd No. 18, Jalan Tago 11 Tago Industrial Park Sri Damansara , 52200, Wilayah Persekutuan Kuala Lumpur
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 Potable Water ground Water surface Water	Color	APHA 2120 B, 2005, 2017 & 2023
	Acidity	APHA 2310 B, 2005,2017 & 2023
	Alkalinity	APHA 2320 B, 2005, 2017 & 2023
	Hardness	APHA 2340 B, 2005,2017 & 2023 APHA 2340 C, 2005, 2017 & 2023

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Conductivity	APHA 2510 B, 2005,2017 & 2023
	Total Solids	APHA 2540 B, 2005,2017 & 2023
	Total Dissolved Solids	APHA 2540 C, 2005,2017 & 2023
	Total Suspended Solids	APHA 2540 D, 2005,2017 & 2023
	Fixed Solids & Volatile Solids	APHA 2540 E, 2005,2017 & 2023
	Aluminium (as Al)	APHA 3111 D, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Antimony (as Sb)	APHA 3120 B, 2005,2017 & 2023
	Arsenic (as As)	APHA 3114 C, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Barium (as Ba)	APHA 3111 D, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Boron (as B)	APHA 3120 B, 2005,2017 & 2023 APHA 4500-B C, 2005,2017 & 2023 ISO 9390: 1990 E
	Calcium (as Ca)	APHA 3111 B, 2005, 2017 & 2023 APHA 3120 B, 2005, 2017 & 2023
	Cadmium (as Cd)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Chromium (as Cr)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Chromium, hexa (Cr ⁶⁺)	APHA 3500-Cr B, 2005,2017 & 2023
	Chromium, tri (Cr ³⁺)	In-House Method (ESL/L/W-01) based on APHA 3111 B, 2005,2017 & 2023 / APHA 3120 B, 2005,2017 & 2023 & APHA 3500-Cr B, 2005,2017 & 2023:By Calculation
	Copper (as Cu)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Cobalt (as Co)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Iron (as Fe)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Lead (as Pb)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Mercury (as Hg)	APHA 3112 B, 2005,2017 & 2023 USEPA 245.1, 1991
	Manganese (as Mn)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Magnesium (as Mg)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Nickel (as Ni)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Potassium (as K)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Sodium (as Na)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Selenium (as Se)	APHA 3114 C, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Silver (as Ag)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Tin (as Sn)	In-House Method (ESL/L/W-07) based on APHA 3114C, 2005,2017 & 2023 In-House Method (ESL/L/W-08) based on APHA 3120B, 2005,2017 & 2023
	Vanadium (as V)	APHA 3120 B, 2005,2017 & 2023
	Zinc (as Zn)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	pH	APHA 4500-H ⁺ B, 2005,2017 & 2023
	Cyanide	APHA 4500-CN C & F, 2005,2017 & 2023
	Chloride	APHA 4500-Cl ⁻ B, 2005,2017 & 2023 ASTM D 512, 1981 (Method C)
	Chlorine	APHA 4500-Cl B, 2005,2017 & 2023 APHA 4500-Cl G, 2005,2017 & 2023 Free Chlorine, In-House Method (ESL/L/W-06) based on BS 1427:1962
	Fluoride	APHA 4500-F ⁻ D, 2005,2017 & 2023
	Nitrogen (Ammonia)	APHA 4500-NH ₃ B&C, 2005,2017 & 2023 APHA 4500-NH ₃ B&C, 1992
	Nitrogen (Nitrate)	APHA 4500-NO ₃ ⁻ B, 2005,2017 & 2023
	Nitrogen (Nitrite)	APHA 4500-NO ₂ ⁻ B, 2005,2017 & 2023
	Oxygen (Dissolved)	APHA 4500-O G, 2005,2017 & 2023
	Phosphorus (Total)	APHA 4500-P B & D, 2005,2017 & 2023
	Phosphorus (Dissolved)	APHA 4500-P D, 2005,2017 & 2023
	Silica (Dissolved)	APHA 4500-SiO ₂ C, 2005,2017 & 2023
	Sulphide	APHA 4500-S ²⁻ F, 2005,2017 & 2023
	Sulphate	APHA 4500-SO ₄ ²⁻ E, 2005,2017 & 2023
	BOD ₅	APHA 5210 B, 2005,2017 & 2023 APHA 4500-O G, 2005,2017 & 2023

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	COD	APHA 5220 B, 2005,2017 & 2023
	Oil & Grease	APHA 5520 B, 2005,2017 & 2023
	Phenol	APHA 5530 B & D, 2005,2017 & 2023 APHA 5530 C, 2005,2017 & 2023
	Color (ADMI)	APHA 2120 F, 2005,2017 & 2023
	Formaldehyde	USEPA 8315 A, 1996 HACH Method 8110 (03/2014, 8ed)
	<u>Phenolic Compound in Water for:</u> Phenol 3-methylphenol 2-nitrophenol 2,4-dichlorophenol 4-chloro-3-methylphenol 2,4,6-trichlorophenol 4-nitrophenol 2-methyl-4,6-dinitrophenol Pentachlorophenol 2-chlorophenol 2-methylphenol 4-methylphenol 2,4-dimethylphenol 2,4-dinitrophenol 2,6-dichlorophenol 2,4,5-trichlorophenol 2,3,4,6-tetrachlorophenol 2-sec-butyl-4,6-dinitrophenol	APHA 6420 B, 2005,2017 & 2023

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	<u>Polynuclear Aromatic Hydrocarbons (PAHs)</u> <u>In Water for:</u> Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(ghi)perylene Benzo (k)fluoranthene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	APHA 6440 B, 2005,2017 & 2023
	<u>Organochlorine Pesticides in Water for:</u> Aldrin Alpha-BHC Beta-BHC Delta-BHC Dieldrin Endosulfan I (alpha) Endosulfan II (beta) Endosulfan sulphate Endrin Endrin aldehyde Endrin ketone Gamma-BHC Heptachlor Heptachlor Epoxide Isomer B Methoxychlor 4,4'-DDE 4,4'-DDD 4,4'-DDT	APHA 6630 B, 2005,2017 & 2023 APHA 6630 C, 2005,2017 & 2023

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Aromatics Volatile Organic Compounds in Water for: Benzene Chlorobenzene Ethylbenzene Isopropylbenzene n-propylbenzene sec-butylbenzene Toluene tert-butylbenzene Xylene (o, m, p) 2-chlorotoulene 4-chlorotoluene 1,2-dichlorobenzene 1,3-dichlorobenzene 1,4-dichlorobenzene	DIN 38407, part 9, 1991
Water Surface Water Marine Water	Ammonia (unionised)	In-house Method (ESL/L/W-10) based on APHA 4500-NH3 B&C, 1992/ APHA 4500-NH3 B&C, 2005,2017 & 2023 & Florida Department
	Chlorophyll a	APHA 10150 B, 2023 (trichromatic method)

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Water Portable Water Ground Water Surface Water Drinking Water Marine Water	Aluminium (Al) Antimony (Sb) Arsenic (As) Barium (Ba) Boron (B) Cadmium (Cd) Chromium (Cr) Copper (Cu) Cobalt (Co) Iron (Fe) Lead (Pb) Nickel (Ni) Manganese (Mn) Mercury (Hg) Molybdenum (Mo) Selenium (Se) Silver (Ag) Tin (Sn) Uranium (U) Vanadium (V) Zinc (Zn) Calcium (Ca) Magnesium (Mg) Potassium (K) Sodium (Na)	APHA 3125 B, 2023
	Volatile Organic Compounds: 1) Dichlorodifluoromethane 2) Chloromethane 3) Chloroethene 4) Bromomethane 5) Ethyl Chloride 6) Trichloromonofluoromethane 7) 1,1-Dichloroethene 8) Methylene chloride 9) 1,2-Dichloroethylene (E) 10) 1,1-Dichloroethane 11) 1,2-Dichloroethylene (Z) 12) 2,2-Dichloropropane 13) Bromochloromethane 14) Trichloromethane 15) 1,1,1-Trichloroethane 16) 1,1-Dichloro-1-propene 17) Carbon tetrachloride 18) 1,2-Dichloroethane 19) Benzene 20) Trichloroethylene 21) 1,2-Dichloropropane	USEPA 5021A (Headspace preparation) & USEPA 8260 D (Gas Chromatography— Mass Spectrophotometry)

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	22) Dibromomethane 23) Bromodichloromethane 24) 1,3-Dichloro-1-propene (Z) 25) Toluene 26) 1,3-Dichloro-1-propene (E) 27) 1,1,2-Trichloroethane 28) 1,3-Dichloropropane 29) Tetrachloroethylene 30) Dibromochloromethane 31) 1,2-Dibromoethane 32) Chlorobenzene 33) Ethylbenzene 34) 1,1,1,2-Tetrachloroethane 35) m & p-xylene 36) Styrene 37) o-Xylene 38) Tribromomethane 39) 1-Methylethyl benzene 40) 1,1,2,2-Tetrachloroethane 41) 1,2,3-Trichloropropane 42) Bromobenzene 43) Propylbenzene 44) 1,2-Methylchlorobenzene 45) Mesitylene 46) 1,4-Methylchlorobenzene 47) tert-Butylbenzene 48) 1,2,4-Trimethylbenzene 49) 1-Methylpropylbenzene 50) p-Cymene 51) 1,3-Dichlorobenzene 52) 1,4-Dichlorobenzene 53) n-Butylbenzene 54) 1,2-Dichlorobenzene 55) 1,2-Dibromo-3-chloropropane 56) 1,2,4-Trichlorobenzene 57) 1,3-Butadiene-1,1,2,3,4,4-hexachloro 58) Naphthalene 59) 1,2,3-Trichlorobenzene	
	Oil and Grease	APHA 5520 C, 2023
	Hydrocarbon (Mineral Oil)	APHA 5520 F, 2023
Water	Conductivity	APHA 2510 B, 2023
Marine Water	Total Solids	APHA 2540 B, 2023
	Total Dissolved Solids	APHA 2540 C, 2023
	Total Suspended Solids	APHA 2540 D, 2023
	pH	APHA 4500-H ⁺ B, 2023
	Chromium hexa (Cr ⁶⁺)	APHA 3500- Cr B, 2023

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Cyanide	HACH Method 8027 (01/2014, 9ed)
	Ammonia	APHA 4500-NH ₃ B&C, 1992
	Nitrate	APHA 4500-NO ₃ - B, 2023
	Nitrite	APHA 4500-NO ₂ - B, 2023
	Oxygen (Dissolved)	APHA 4500-O G, 2023
	Phosphorus (Dissolved)	APHA 4500-P D, 2023
	Mercury (Hg)	APHA 3112 B, 2023
	Phenol	APHA 5530 B&D, 2023 APHA 5530 C, 2023
	<u>Polynuclear Aromatic Hydrocarbons (PAHs):</u> Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoroanthene Benzo(ghi)perylene Benzo(k)fluoroanthene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	APHA 6440 B, 2023
	Water Portable Water Ground Water Surface Water Drinking Water	Herbicides: 2,4-D 2,4,5-T 2,4,5-TP Herbicides: Atrazine Propanil Simazine
		USEPA 555, 1992 (High Performance Liquid Chromatography)
		In-house method (ESL/L/W-15) based on USEPA 555, 1992 (High Performance Liquid Chromatography)
	Water Potable Water Ground Water Surface Water Marine Water	Nitrogen (Total)
		In-house Method (ESL/L/W-11) based on Shimadzu Application News No. SCA-130-503
		Turbidity (NTU)
		APHA 2130 B, 2005, 2017 & 2023
		Salinity (ppt)
		APHA 2520 B, 2005, 2017 & 2023
		Total Organic Carbon
		APHA 5310 B, 2005, 2017 & 2023

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Oil and Grease	APHA 5520 G, 2005,2017 & 2023
	Anionic surfactant (as MBAS)	APHA 5540 C, 2005,2017 & 2023
	Uranium (U)	In-House Method (ESL/L-W-12) based on APHA 3120 B, 2005,2017 & 2023
	Pre-treatment of sample for metal analysis: Nitric acid Digestion	APHA 3030 E, 2005,2017 & 2023
	Pre-treatment of sample for metal analysis: Nitric acid – Hydrochloric acid Digestion	APHA 3030 F, 2005,2017 & 2023
	Pre-treatment of sample for metal analysis: Nitric acid – Sulfuric acid Digestion	APHA 3030 G, 2005,2017 & 2023
Environmental Monitoring Soil sediments Sludge Solid Waste	Toxicity Characteristic Leaching Procedure (TCLP)	USEPA 1311
	Barium (Ba) Boron (B) Cadmium (Cd) Chromium (Cr) Lead (Pb) Silver (Ag) Selenium (Se)	APHA 3120 B, 2023
	Mercury (Hg)	APHA 3112 B, 2023
	Arsenic (As)	APHA 3114 C, 2023
	Preliminary treatment of sample: acid digestion	USEPA 3050 B

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Compositional analysis of metal elements: Antimony (Sb) Aluminium (Al) Barium (Ba) Beryllium (Be) Boron (B) Cadmium (Cd) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Manganese (Mn) Nickel (Ni) Zinc (Zn) Silver (Ag) Selenium (Se) Thallium (Tl) Vanadium (V)	APHA 3120 B, 2023
	Compositional analysis of metal elements:	APHA 3112 B, 2023
	Mercury	
	Compositional analysis of metal elements:	APHA 3114 C, 2023
	Arsenic (As)	
Environmental Monitoring Tclp Extract	Herbicides: 2,4-D 2,4,5-T 2,4,5-TP Atrazine Propanil Simazine	In-house method (ESL/L/W-16) based on USEPA 555, 1992 (High Performance Liquid Chromatography)
Environmental Monitoring Liquid Effluents	Color	APHA 2120 B, 2005, 2017 & 2023
	Acidity	APHA 2310 B, 2005, 2017 & 2023
	Alkalinity	APHA 2320 B, 2005, 2017 & 2023
	Hardness	APHA 2340 B, 2005, 2017 & 2023 APHA 2340 C, 2005, 2017 & 2023

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Conductivity	APHA 2510 B, 2005,2017 & 2023
	Total Solids	APHA 2540 B, 2005,2017 & 2023
	Total Dissolved Solids	APHA 2540 C, 2005,2017 & 2023
	Total Suspended Solids	APHA 2540 D, 2005,2017 & 2023
	Fixed Solids & Volatile Solids	APHA 2540 E, 2005,2017 & 2023
	Aluminium (as Al)	APHA 3111 D, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Antimony (as Sb)	APHA 3120 B, 2005,2017 & 2023
	Arsenic (as As)	APHA 3114 C, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Barium (as Ba)	APHA 3111 D, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Boron (as B)	APHA 3120 B, 2005,2017 & 2023 APHA 4500-B C, 2005,2017 & 2023 ISO 9390: 1990 E
	Calcium (as Ca)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Cadmium (as Cd)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023

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	Chromium (as Cr)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Chromium, hexa (Cr ⁶⁺)	APHA 3500-Cr B, 2005,2017 & 2023
	Chromium, tri (Cr ³⁺)	In-House Method (ESL/L/W-01) based on APHA 3111 B, 2005,2017 & 2023 / APHA 3120 B, 2005,2017 & 2023 & APHA 3500-Cr B, 2005,2017 & 2023:By Calculation
	Copper (as Cu)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Cobalt (as Co)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Iron (as Fe)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Lead (as Pb)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Mercury (as Hg)	APHA 3112 B, 2005,2017 & 2023 USEPA 245.1, 1991
	Manganese (as Mn)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023

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	Magnesium (as Mg)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Nickel (as Ni)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Potassium (as K)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Sodium (as Na)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Selenium (as Se)	APHA 3114 C, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Silver (as Ag)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023
	Tin (as Sn)	In-House Method (ESL/L/W-07) based on APHA 3114C, 2005,2017 & 2023 In-House Method (ESL/L/W-08) based on APHA 3120B, 2005,2017 & 2023
	Vanadium (as V)	APHA 3120 B, 2005,2017 & 2023
	Zinc (as Zn)	APHA 3111 B, 2005,2017 & 2023 APHA 3120 B, 2005,2017 & 2023

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	pH	APHA 4500-H ⁺ B, 2005,2017 & 2023
	Cyanide	APHA 4500-CN C & F, 2005,2017 & 2023
	Chloride	APHA 4500-Cl ⁻ B, 2005,2017 & 2023 ASTM D 512, 1981 (Method C)
	Chlorine	APHA 4500-Cl B, 2005,2017 & 2023 APHA 4500-Cl G, 2005,2017 & 2023 Free Chlorine, In-House Method (ESL/L/W-06) based on BS 1427:1962
	Fluoride	APHA 4500-F ⁻ D, 2005,2017 & 2023
	Nitrogen (Ammonia)	APHA 4500-NH ₃ B&C, 2005,2017 & 2023 APHA 4500-NH ₃ B&C, 1992
	Nitrogen (Nitrate)	APHA 4500-NO ₃ ⁻ B, 2005,2017 & 2023
	Nitrogen (Nitrite)	APHA 4500-NO ₂ ⁻ B, 2005,2017 & 2023
	Oxygen (Dissolved)	APHA 4500-O G, 2005,2017 & 2023
	Phosphorus (Total)	APHA 4500-P B & D, 2005,2017 & 2023
	Phosphorus (Dissolved)	APHA 4500-P D, 2005,2017 & 2023
	Silica (Dissolved)	APHA 4500-SiO ₂ C, 2005,2017 & 2023
	Sulphide	APHA 4500-S ²⁻ F, 2005,2017 & 2023
	Sulphate	APHA 4500-SO ₄ ²⁻ E, 2005,2017 & 2023

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	BOD ₅	APHA 5210 B, 2005,2017 & 2023 APHA 4500-O G, 2005,2017 & 2023
	COD	APHA 5220 B, 2005,2017 & 2023
	Oil & Grease	APHA 5520 B, 2005,2017 & 2023
	Phenol	APHA 5530 B & D, 2005,2017 & 2023 APHA 5530 C, 2005,2017 & 2023
	Color (ADMI)	APHA 2120 F, 2005,2017 & 2023
	Formaldehyde	USEPA 8315 A, 1996 HACH Method 8110 (03/2014, 8ed)
	Turbidity (NTU)	APHA 2130 B, 2005,2017 & 2023
	Salinity (ppt)	APHA 2520 B, 2005,2017 & 2023
	Total Organic Carbon	APHA 5310 B, 2005,2017 & 2023
	Oil and Grease	APHA 5520 G, 2005,2017 & 2023
	Anionic surfactant (as MBAS)	APHA 5540 C, 2005,2017 & 2023
	Uranium (U)	In-House Method (ESL/L-W-12) based on APHA 3120 B, 2005,2017 & 2023
	Nitrogen (Total)	In-house Method (ESL/L/W-11) based on Shimadzu Application News No. SCA-130-503
	Pre-treatment of sample for metal analysis: Nitric acid Digestion	APHA 3030 E, 2005,2017 & 2023
	Pre-treatment of sample for metal analysis: Nitric acid – Hydrochloric acid Digestion	APHA 3030 F, 2005,2017 & 2023

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Pre-treatment of sample for metal analysis: Nitric acid – Sulfuric acid Digestion	APHA 3030 G, 2005,2017 & 2023
	<u>Phenolic Compound in Water for:</u> Phenol 3-methylphenol 2-nitrophenol 2,4-dichlorophenol 4-chloro-3-methylphenol 2,4,6-trichlorophenol 4-nitrophenol 2-methyl-4,6-dinitrophenol Pentachlorophenol 2-chlorophenol 2-methylphenol 4-methylphenol 2,4-dimethylphenol 2,4-dinitrophenol 2,6-dichlorophenol 2,4,5-trichlorophenol 2,3,4,6-tetrachlorophenol 2-sec-butyl-4,6-dinitrophenol	APHA 6420 B, 2005,2017 & 2023
	<u>Polynuclear Aromatic Hydrocarbons (PAHs)</u> <u>In Water for:</u> Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(ghi)perylene Benzo (k)fluoranthene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	APHA 6440 B, 2005,2017 & 2023

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	<u>Organochlorine Pesticides in Water for:</u> Aldrin Alpha-BHC Beta-BHC Delta-BHC Dieldrin Endosulfan I (alpha) Endosulfan II (beta) Endosulfan sulphate Endrin Endrin aldehyde Endrin ketone Gamma-BHC Heptachlor Heptachlor Epoxide Isomer B Methoxychlor 4,4'-DDE 4,4'-DDD 4,4'-DDT	APHA 6630 B, 2005,2017 & 2023 APHA 6630 C, 2005,2017 & 2023
	<u>Aromatics Volatile Organic Compounds in Water for:</u> Benzene Chlorobenzene Ethylbenzene Isopropylbenzene n-propylbenzene sec-butylbenzene Toluene tert-butylbenzene Xylene (o, m, p) 2-chlorotoulene 4-chlorotoluene 1,2-dichlorobenzene 1,3-dichlorobenzene 1,4-dichlorobenzene	DIN 38407, part 9, 1991

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Environmental Monitoring Effluents	Volatile Organic Compounds: 1) Dichlorodifluoromethane 2) Chloromethane 3) Chloroethene 4) Bromomethane 5) Ethyl Chloride 6) Trichloromonofluoromethane 7) 1,1-Dichloroethene 8) Methylene chloride 9) 1,2-Dichloroethylene (E) 10) 1,1-Dichloroethane 11) 1,2-Dichloroethylene (Z) 12) 2,2-Dichloropropane 13) Bromochloromethane 14) Trichloromethane 15) 1,1,1-Trichloroethane 16) 1,1-Dichloro-1-propene 17) Carbon tetrachloride 18) 1,2-Dichloroethane 19) Benzene 20) Trichloroethylene 21) 1,2-Dichloropropane 22) Dibromomethane 23) Bromodichloromethane 24) 1,3-Dichloro-1-propene (Z) 25) Toluene 26) 1,3-Dichloro-1-propene (E) 27) 1,1,2-Trichloroethane 28) 1,3-Dichloropropane 29) Tetrachloroethylene 30) Dibromochloromethane 31) 1,2-Dibromoethane 32) Chlorobenzene 33) Ethylbenzene 34) 1,1,1,2-Tetrachloroethane 35) m & p-xylene 36) Styrene 37) o-Xylene 38) Tribromomethane 39) 1-Methylethyl benzene 40) 1,1,2,2-Tetrachloroethane 41) 1,2,3-Trichloropropane 42) Bromobenzene 43) Propylbenzene 44) 1,2-Methylchlorobenzene 45) Mesitylene 46) 1,4-Methylchlorobenzene 47) tert-Butylbenzene	USEPA 5021A (Headspace preparation) & USEPA 8260 D (Gas Chromatography— Mass Spectrophotometry)

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	48) 1,2,4-Trimethylbenzene 49) 1-Methylpropylbenzene 50) p-Cymene 51) 1,3-Dichlorobenzene 52) 1,4-Dichlorobenzene 53) n-Butylbenzene 54) 1,2-Dichlorobenzene 55) 1,2-Dibromo-3-chloropropane 56) 1,2,4-Trichlorobenzene 57) 1,3-Butadiene-1,1,2,3,4 - hexachloro 58) Naphthalene 59) 1,2,3-Trichlorobenzene	
	Oil and Grease Hydrocarbon (Mineral Oil)	APHA 5520 C, 2023 APHA 5520 F, 2023
Workplace Environment And Hazard Personal Exposure / Work Place Atmosphere	Dust (total)	NIOSH 0500 (issue 2: 15 Aug 1994) Excluding Sampling
	Dust (respirable)	NIOSH 0600 (Issue 3:15 Jan 1998) Excluding Sampling
	Hydrocarbon Aromatic: Benzene Toluene Ethylbenzene Xylenes	NIOSH 1501 (Issue 3: 15 Mar 2003) Excluding Sampling
	Metals on Air Filter: Aluminium (Al) Barium (Ba) Cadmium (Cd) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Manganese (Mn) Nickel (Ni) Zinc (Zn)	NIOSH 7303 (Issue 1: 15 Mar 2003) Excluding Sampling

SCOPE OF TESTING : MICROBIOLOGICAL

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Water Potable Water Ground Water	Heterotrophic Plate Count	APHA 9215 D, 2005,2017 & 2023 (MF Method)

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Surface Water Marine Water drinking Water	Total Coliform	APHA 9221 B, 2005, 2017 & 2023 (MPN Method) APHA 9222 B, 2005, 2017 & 2023 (MF Method)
	Fecal Coliform	APHA 9221 E, 2005, 2017 & 2023 (MPN Method) APHA 9222 D, 2005, 2017 & 2023 (MF Method)
	Escherichia Coli	APHA 9221 F, 2005 (MPN Method) APHA 9221 G, 2017 & 2023 (MPN Method) APHA 9222 G, 2005 (MF Method) APHA 9222 I, 2017 & 2023 (MF Method)
	Enterococci	APHA 9230 C, 2017 (MF)
	Pseudomonas aeruginosa	APHA 9213 E, 2017 & 2023 (MF)
Environmental Monitoring Liquid Effluents	Heterotrophic Plate Count	APHA 9215 D, 2005, 2017 & 2023 (MF Method)
	Total Coliform	APHA 9221 B, 2005, 2017 & 2023 (MPN Method) APHA 9222 B, 2005, 2017 & 2023 (MF Method)
	Fecal Coliform	APHA 9221 E, 2005, 2017 & 2023 (MPN Method) APHA 9222 D, 2005, 2017 & 2023 (MF Method)
	Escherichia Coli	APHA 9221 F, 2005 (MPN Method) APHA 9221 G, 2017 & 2023 (MPN Method) APHA 9222 G, 2005 (MF Method) APHA 9222 I, 2017 & 2023 (MF Method)
	Enterococci	APHA 9230 C, 2017 (MF)
	Pseudomonas aeruginosa	APHA 9213 E, 2017 & 2023 (MF)

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SITE LOCATION (HQ)	1. CATEGORY I, No. 18, Jalan Tago 11 Tago Industrial Park Sri Damansara 52200 WP Kuala Lumpur, MALAYSIA
FIELD(S) OF TESTING :	CHEMICAL,MECHANICAL

SCOPE OF TESTING : CHEMICAL

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Environmental Monitoring Ambient Air	Sampling and Analysis of Total Suspended Particulates in the Atmosphere Using High Volume Sampler	ASTM D 4096, 2017
	Sampling and Analysis of PM 10 (particulates 10 micron) in the Atmosphere Using PM 10 High Volume Sampler	ASTM D 4096, 2017
	Treatment of Silica Fibre Media for Analysis of Heavy Metals (Cd, Cr, Cu, Fe, Mn, Ni, Zn, Al, Pb) in the Total Suspended Particulates Collected Using High Volume Sampler	ISO 9855, 1993
	Analysis of Heavy Metals in the Collected Total Suspended Particulates in the Atmosphere for: Cadmium Chromium Copper Iron Lead Manganese Nickel Zinc	APHA 3111 B, 2023
	Aluminium	APHA 3111 D, 2023
	Arsenic	In-House Method (ESL/L/A-01) based on APHA 3114C, 2023
	Selenium	In-House Method (ESL/L/A-03) based on APHA 3114C, 2023
	Mercury	In-House Method (ESL/L/A-02) based on APHA 3112B, 2023

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	Sampling and Analysis of Sulphur Dioxide in the Atmosphere Using Trigas Sampler and Colorimetric Analysis	ASTM D 2914, 2015 (Reapproved 2022)
	Sampling and Analysis of Nitrogen Dioxide in the Atmosphere Using Trigas Sampler and Colorimetric Analysis	ASTM D 1607, 1991 (Reapproved 2018)
	Sampling and analysis of total suspended particulates, PM 10 & PM 2.5 in atmosphere using small volume sampler	In-House Method (ESL/F/A-06) based on Manufacturer's Measurement Procedures (Small volume sampler)
	Carbon Monoxide (CO)	ASTM D4599-21 (Length-of-stain dosimeter)
	Ozone (O3)	APHA ISC 820 (2nd Ed)
	Nitrogen Dioxide (NO2)	In-house Method (ESL/F/A-09) based on Journal of the Air Pollution Control Association 23:1, 30-33
	Environmental Monitoring Chimney Stack Emission	Sampling and Analysis of Dust Concentration in the Stack Flue Gas Using Isokinetic Sampling Technique
		MS 1596: 2003 JIS Z 8808, 1992 Isokinetic Sampler, Type 1
		Treatment of Silica Fiber Thimble for Analysis of Heavy Metals (Cd, Cr, Cu, Fe, Pb, Mn, Ni, Zn, Al) in the Dust Particles Collected Using Isokinetic Sampling Technique
		JIS K 0097, 1992
	Analysis of Heavy Metals in the Collected Dust Particulates in Stack Flue Gas for:	APHA 3111 B, 2023
	Cadmium	
	Chromium	
	Copper	
	Iron	
	Lead	
	Manganese	
	Nickel	
	Zinc	
	Cobalt (Co)	
	Thalium (Tl)	
	Aluminium	APHA 3111 D, 2023
	Vanadium (V)	
	Arsenic	In-House Method (ESL/L/F-01) based on APHA 3114C, 2023
	Selenium	In-House Method (ESL/L/F-03) based on APHA 3114C, 2023
	Mercury	In-House Method (ESL/L/F-02) based on APHA 3112B, 2023
	Antimony (Sb)	APHA 3114C, 2023 (FIAS-AAS)

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	Measurement of SO ₂ , NO, NO ₂ , CO Using Portable Flue Gas Analyser based on Electrochemical Sensor Principal	In-House Method (ESL/F/F-01) based on Manufacturer's Measurement Procedures (Flue gas analyzer)
	Measurement of CO ₂ and O ₂ using Portable Flue Gas Analyser based on Electrochemical Sensor Principal	In-house Method (ESL/F/F-01) based on Manufacturer's Measurement Procedures (Flue gas analyser)
Environmental Monitoring Liquid Effluents	Conductivity (insitu)	APHA 2510B, 2005,2017 & 2023
	pH (insitu)	APHA 4500-H ⁺ B, 2005,2017 & 2023
	Temperature (Insitu)	APHA 2550 B, 2005,2017 & 2023
	Dissolved Oxygen (Insitu)	APHA 4500-O G, 2005,2017 & 2023 APHA 4500-O H, 2017 & 2023
	Turbidity (Insitu)	APHA 2130 B, 2005,2017 & 2023
	Salinity (Insitu)	APHA 2520 B, 2005,2017 & 2023
	Free chlorine (Insitu)	HACH 8021, Edition 9, 2014
	Total Chlorine (Insitu)	HACH 8167, Edition 11, 2022
	Combined Chlorine (by calculation)	In-house Method (ESL/F/W-06) based on HACH 8021 & HACH 8167
Water Portable Water Ground Water Surface Water Marine Water	Conductivity (insitu)	APHA 2510B, 2005,2017 & 2023
	pH (insitu)	APHA 4500-H ⁺ B, 2005,2017 & 2023
	Temperature (Insitu)	APHA 2550 B, 2005,2017 & 2023
	Dissolved Oxygen (Insitu)	APHA 4500-O G, 2005,2017 & 2023 APHA 4500-O H, 2017 & 2023
	Turbidity (Insitu)	APHA 2130 B, 2005,2017 & 2023
	Salinity (Insitu)	APHA 2520 B, 2005,2017 & 2023
	Free chlorine (Insitu)	HACH 8021, Edition 9, 2014
	Total Chlorine (Insitu)	HACH 8167, Edition 11, 2022
	Combined Chlorine (by calculation)	In-house Method (ESL/F/W-06) based on HACH 8021 & HACH 8167

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SCOPE OF TESTING : MECHANICAL

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Environmental Tests Ambient Air	Wind Speed and Direction	In-House Method (ESL/F/A-08) based on manufacturer's manual
Acoustic / Noise Measurement	Measurement of Environmental Noise Level	ISO 1996-1:2016 & ISO 1996- 2:2017
Ground Vibration	Measurement of vibration meter (PPV & frequency)	In-House Method (ESL/F/V-01) based on Manufacturer's Measurement Procedures (Vibration meter)

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