

Laboratory	TUV SUD South Asia Pvt. Ltd., No. 11 & 13, 1st & 4th Floor, Origin Towers - Type 2, Dr. VSI Estate, Thiruvanmiyur, Chennai, Tamil Nadu		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	12.04.2016
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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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AT LABORATORY

I. POLLUTION AND ENVIRONMENT

1.	Waste Water/ Industrial Water / Industrial Effluent/ Domestic Effluent/ STP Water/ Treated Water	Temperature °C	IS 3025 (Part 9): 1984 (RA 2009) (Mercury Thermo sensor)/ APHA (22 nd Edition) 2550 B: 2012(Mercury Thermo sensor)	Ambient -50°C
		pH value	IS 3025 (Part 11): 1983 (RA 2012) (Electrometry)/ APHA (22 nd Edition) 4500 H ⁺ B: 2012(Electrometry)	1 to 14
		Total suspended Solids (TSS)	IS 3025 (Part 17): 1984 (RA 2012) (Gravimetry)/ APHA (22 nd Edition) 2540 D: 2012(Gravimetry)	5 mg/l to 10000 mg/l
		Total Dissolved solids	IS 3025 (Part 16): 1984 (RA 2006) (Gravimetry)/ APHA (22 nd Edition) 2540 C: 2012 (Gravimetry)	5 mg/l to 25000 mg/l
		Oil and Grease	IS 3025 (Part 39): 1991 (RA 2003) (Gravimetry)/ APHA (22 nd Edition) 5520 B: 2012 (Gravimetry)	5 mg/l to 5000 mg/l
		Total Residual Chlorine	IS 3025 (Part 26): 1986 (RA 2003) (Iodometry)/ APHA (22 nd Edition) 4500 Cl B: 2012 (Iodometry)	0.1 mg/l to 10 mg/l
		Free Ammonia as NH ₃	IS 3025 (Part 34): 1988(RA 2003) (Distillation & Titrimetry)/ APHA (22 nd Edition) 4500 NH ₃ B, C: 2012 (Distillation & Titrimetry)	0.1 mg/l to 50 mg/l

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	Waste Water/ Industrial Water / Industrial Effluent/ Domestic Effluent/ STP Water/ Treated Water	Ammonical Nitrogen as NH ₃ -N	IS 3025 (Part 34): 1988 (RA 2009) (Titrimetry) / APHA (22 nd Edition): 2012 (Titrimetry)	0.1 mg/l to 100 mg/l
		Total Kjeldahl Nitrogen as N	IS 3025 (Part 34): 1988 (RA 2009) (Macro-Kjeldhal)/ APHA (22 nd Edition) 4500 Norg B: 2012 (Macro-Kjeldhal)	0.5 mg/l to 250 mg/l
		Biochemical Oxygen Demand (BOD) at 27 °C for 3 days	IS 3025 (Part 44): 1993 (RA 2009) (Winklers & Iodometry method)	2 mg/l to 15000 mg/l
		Biochemical Oxygen Demand (BOD) at 20 °C for 5 days	APHA (22 nd Edition) 5210 B: 2012 (Winklers & Iodometry method)	2 mg/l to 15000 mg/l
		Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2006 (Open reflux Method- Titrimetry)/ APHA (22 nd Edition) 5220 B: 2012 (Open reflux Method- Titrimetry)	10 mg/l to 10000 mg/l
		Arsenic as As	IS 3025 (Part 37): 1988 (RA 2003) AAS/ APHA (22 nd Edition) 3114 B: 2012	0.005 mg/l to 0.5 mg/l
		Mercury as Hg	IS 3025 (Part 48): 1994 (RA 2003) AAS/APHA (22 nd Edition) 3112 B: 2012	0.001 mg/l to 100 mg/l
		Lead as Pb	IS 3025 (Part 47): 1994 (RA 2009) AAS/ APHA (22 nd Edition) 3111 B: 2012	0.005 mg/l to 100 mg/l
		Cadmium as Cd	IS 3025 (Part 41): 1992 (RA 2003) AAS/APHA (22 nd Edition) 3111 B: 2012	0.001 mg/l to 100 mg/l

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	Waste Water/ Industrial Water / Industrial Effluent/ Domestic Effluent/ STP Water/ Treated Water	Hexavalent Chromium as Cr ⁶⁺	IS 3025 (Part 52): 2003 (Spectrophotometry)/ APHA (22 nd Edition) 3500 Cr B: 2012 (Spectrophotometry)	0.03 mg/l to 50 mg/l
		Total Chromium as Cr	IS 3025 (Part 52): 2003 AAS/ APHA (22 nd Edition) 3111 B AAS: 2012	0.001 mg/l to 100 mg/l
		Copper as Cu	IS 3025 (Part 42): 1992 (RA 2003) AAS/APHA (22 nd Edition) 3111 B: 2012 AAS	0.001 mg/l to 100 mg/l
		Zinc as Zn	IS 3025 (Part 49): 1994 (RA 2009) AAS/ APHA (22 nd Edition) 3111 B: 2012 AAS	0.001 mg/l to 100 mg/l
		Selenium as Se	IS 3025 (Part 56): 2003 AAS/ APHA (22 nd Edition) 3111 B: 2012 AAS	0.01 mg/l to 100 mg/l
		Nickel as Ni	IS 3025 (Part 54): 2003 AAS/ APHA (22 nd Edition) 3111 B: 2012 AAS	0.005 mg/l to 100 mg/l
		Boron as B	IS 3025 (Part 57): 2005 (Spectrophotometry)	0.05 mg/l to 100 mg/l
		Percent sodium	SOP 24/ Rev. 1/ Issued. 4/10/2012 (Conversion)	1 % to 80 %
		Cyanide as CN	IS 3025 (Part 27): 1986 (RA 2009) (Spectrophotometry)/ APHA (22 nd Edition) 4500 CN -C, E: 2012 (Spectrophotometry)	0.01 mg/l to 100 mg/l

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	Waste Water/ Industrial Water / Industrial Effluent/ Domestic Effluent/ STP Water/ Treated Water	Chloride as Cl	IS 3025 (Part 32): 1988 (RA 2003) (Argentometry) / APHA (22 nd Edition) 4500 Cl-B: 2012 (Argentometry)	1 mg/l to 10000 mg/l
		Fluoride as F	IS 3025 (Part 60): 2008 (Spectrophotometry)/ APHA (22 nd Edition) 4500 F-B,D: 2012 (Spectrophotometry)	0.1 mg/l to 10 mg/l
		Total Phosphorous as PO ₄	IS 3025 (Part 31): 1988 (RA 2003) (Spectrophotometry) / APHA (22 nd Edition) 4500 P-B,D: 2012 (Spectrophotometry)	0.02 mg/l to 50 mg/l
		Dissolved Phosphorous as PO ₄	IS 3025 (Part 31): 1988 (RA 2003) (Spectrophotometry)/ APHA (22 nd Edition) 4500 P-B,D: 2012 (Spectrophotometry)	0.02 mg/l to 50 mg/l
		Sulphates as SO ₄	IS 3025 (Part 24): 1986 (RA 2003) (Spectrophotometry)/ APHA (22 nd Edition) 4500 SO ₄ -B,E: 2012 (Spectrophotometry)	1 mg/l to 5000 mg/l
		Sulphide as S	IS 3025 (Part 29): 1986 (RA 2009) (Iodometry)/ APHA (22 nd Edition) 4500 S-F: 2012 (Iodometry)	1 mg/l to 100 mg/l
		Phenolic compounds as C ₆ H ₅ OH	IS 3025 (Part 43): 1992 (RA 2003) (Spectrophotometry) / APHA (22 nd Edition) 5530 B,C: 2012 (Spectrophotometry)	0.001 mg/l to 50 mg/l

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	Waste Water/ Industrial Water / Industrial Effluent/ Domestic Effluent/ STP Water/ Treated Water	Sodium as Na	IS 3025 (Part 45): 1993 (RA 2003) (Flame Emission photometer) / APHA (22 nd Edition) 3500 Na-B: 2012 (Flame Emission photometer)	0.1 mg/l to 1000 mg/l
		Potassium as K	IS 3025 (Part 45): 1993 (RA 2003) (Flame photometer)/ APHA (22 nd Edition) 3500 K- B: 2012 (Flame photometer)	0.1 mg/l to 1000 mg/l
		Fixed Solids	IS 3025 (Part 18): 1984 (RA 2012) (Gravimetry) / APHA (22 nd Edition) 2540 E: 2012 (Gravimetry)	1 mg/l to 1000 mg/l
		Volatile Solids	IS 3025 (Part 18): 1984 (RA 2012) (Gravimetry)/ APHA (22 nd Edition) 2540 E : 2012(Gravimetry)	1 mg/l to 1000 mg/l
		Acidity	IS 3025 (Part 22): 1986 (RA 2003) (Titrimetry) / APHA (22 nd Edition) 2310 B: 2012 (Titrimetry)	1 mg/l to 1000 mg/l
		Alkalinity	IS 3025 (Part 23): 1986 (RA 2003) (Titrimetry)/ APHA (22 nd Edition) 2320 B: 2012 (Titrimetry)	1 mg/l to 1000 mg/l
		Conductivity	IS 3025 (Part 14): 1984 (RA 2013) (Electrometry)/ APHA (22 nd Edition) 2510 B: 2012 (Electrometry)	1 µS/cm to 35000 µS/cm

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	Waste Water/ Industrial Water / Industrial Effluent/ Domestic Effluent/ STP Water/ Treated Water	Total Hardness as CaCO ₃	IS 3025 (Part 21): 1983 (RA 2009) (Titrimetry)/ APHA (22 nd Edition) 2340 C: 2012 (Titrimetry)	1 mg/l to 5000 mg/l
		Calcium as Ca	IS 3025 (Part 40): 1991 (RA 2003) (Titrimetry)/ APHA (22 nd Edition) 3500 Ca B : 2012 (Titrimetry)	0.5 mg/l to 50000 mg/l
		Magnesium as Mg	IS 3025 (Part 46): 1994 (RA 2003) (Titrimetry)/ APHA (22 nd Edition) 2340 C, 3500 Ca B, Mg B: 2012 (Titrimetry)	1 mg/l to 50000 mg/l
		Dissolved Oxygen (DO)	IS 3025 (Part 38): 1989 (RA 2003) (Winklers & Iodometry method)/ APHA (22 nd Edition) 4500 O,B,C: 2012 (Winklers & Iodometry method)	0.1 mg/l to 6 mg/l
		Iron as Fe	IS 3025 (Part 53): 2003 (Spectrophotometry) / APHA (22 nd Edition) 3120: 2012	0.01 mg/l to 50 mg/l
		Nitrate Nitrogen	IS 3025 (Part 34): 1988 (RA 2009) (Spectrophotometry) / APHA (22 nd Edition) 4500 NO ₃ B: 2012 (Spectrophotometry)	0.1 mg/l to 500 mg/l
		Nitrite Nitrogen	IS 3025 (Part 34): 1988 (RA 2009) (Spectrophotometry) / APHA (22 nd Edition) 4500 NO ₂ B: 2012 (Spectrophotometry)	0.1 mg/l to 100 mg/l

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	Waste Water/ Industrial Water / Industrial Effluent/ Domestic Effluent/ STP Water/ Treated Water	Total Solid	IS 3025 (Part 15): 1984 (RA 2009) (Gravimetry) / APHA (22 nd Edition) 2540 B: 2012 (Gravimetry)	5 mg/l to 50000 mg/l
		Turbidity	IS 3025 (Part 10): 1984 (RA 2002) (Nephelometry)/ APHA (22 nd Edition) 2130 B: 2012 (Nephelometry)	0.1 NTU to 500 NTU
		Antimony as Sb	APHA (22 nd Edition) 3111 B: 2012	0.01 mg/l to 0.100 mg/l
		Aluminium as Al	IS 3025 (Part 55): 2003 AAS / APHA (22 nd Edition) 3111 B: 2012 AAS	0.001 mg/l to 50 mg/l
		Sulphite as SO ₃	IS 3025 (Part 28): 1986 (RA 2003) (Iodometry) APHA (22 nd Edition) 4500B-SO ₃ B: 2012 (Iodometry)	1 mg/l to 100 mg/l
		Silica as SiO ₂	IS 3025 (Part 35): 1988 (RA 2003) (Spectrophotometry) / APHA (22 nd Edition) 4500 SiO ₂ D: 2012 (Spectrophotometry)	0.05 mg/l to 100 mg/l
		Beryllium as Be	APHA (22 nd Edition) 3111 D: 2012 AAS	0.001 mg/l to 0.1 mg/l
		Barium as Ba	APHA (22 nd Edition) 3111 D: 2012 AAS	0.005 mg/l to 100 mg/l
		Strontium as Sr	APHA (22 nd Edition) 3111 B: 2012 AAS	0.001 mg/l to 10 mg/l
		Cobalt as Co	APHA (22 nd Edition) 3111 B: 2012 AAS	0.001 mg/l to 10 mg/l

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	Waste Water/ Industrial Water / Industrial Effluent/ Domestic Effluent/ STP Water/ Treated Water	Manganese as Mn	APHA (22 nd Edition) 3111 B: 2012 AAS	0.001 mg/l to 100 mg/l
		Salinity	APHA (22 nd Edition) 2520 B: 2012 (Electrometry)	0.1 ppt to 50 ppt
		Sodium absorption ratio	SOP 24/ Rev. 1/ Issued. 4/10/2012 (Conversion)	10 meq/l to 100 meq/l
		Carbon dioxide	APHA (22 nd Edition) 4500 CO ₂ C: 2012 (Titrimetry)	20 mg/l to 4000 mg/l
		Total Organic Carbon	USEPA 415.3 Rev. 1.2: 2009 (Spectrophotometry)	0.1 mg/l to 1000 mg/l
2.	Solid Waste (Municipal Solid Waste)/ Hazardous Waste (Industrial Solid Waste, Sludge, Process Waste)	Chloride	APHA (22 nd Edition) 4500 Cl B: 2012	1 mg/kg to 1000 mg/kg
		Copper as Cu	USEPA -3050 B (1-12) Rev. 2: 1996 (AAS)	1 mg/kg to 100 mg/kg
		Iron as Fe	USEPA -3050 B (1-12) Rev. 2: 1996 (AAS)	1 mg/kg to 100 mg/kg
		Lead as Pb	USEPA -3050 B (1-12) Rev. 2: 1996 (AAS)	1 mg/kg to 100 mg/kg
		Manganese as Mn	USEPA -3050 B (1-12) Rev. 2: 1996 (AAS)	1 mg/kg to 100 mg/kg
		Nickel as Ni	USEPA -3050 B (1-12) Rev. 2: 1996 (AAS)	1 mg/kg to 100 mg/kg
		Zinc as Zn	USEPA -3050 B (1-12) Rev. 2: 1996 (AAS)	1 mg/kg to 100 mg/kg

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	Solid Waste (Municipal Solid Waste) / Hazardous Waste (Industrial Solid Waste, Sludge, Process Waste)	Mercury as Hg	USEPA -200.8 Rev. 5.4 Dec (1994)	1 mg/kg to 100 mg/kg
		Selenium as Se	USEPA -3050 B (1-12) Rev. 2: 1996 (AAS)	1 mg/kg to 100 mg/kg
		Arsenic as As	USEPA -3050 B (1-12) Rev. 2: 1996 (AAS)	1 mg/kg to 100 mg/kg
		Chromium as Cr	USEPA -3050 B (1-12) Rev. 2: 1996 (AAS)	1 mg/kg to 100 mg/kg
		Cobalt as Co	USEPA -3050 B (1-12) Rev. 2: 1996 (AAS)	1 mg/kg to 100 mg/kg
		Moisture/ Water Content	IS 2720 (Part 2): 1973 (RA 2010)	0.5 % to 50 %
		Organic Matter	IS 2720 (Part 22): 1972 (RA 2010)	0.05 % to 50 %
		Organic Carbon	IS 2720 (Part 22): 1972 (RA 2010)	0.025 % to 25 %
		Loss on Ignition	European Standards TC WI:2003(E)	0.5 % to 50 %
		Calcium Carbonate	IS 2720 (Part 23): 1976 (RA 2006)	1 % to 25 %
		Cation Exchange Capacity	IS 2720 (Part 24): 1976 (RA 2010)	(1 meq to 50 meq)/100g
		pH value	IS 2720 (Part 26): 1987 (RA 2002)	1 to 14
		Total Nitrogen	IS 14684: 1999 (RA 2005)/ IS 10158: 1982 (RA 2003)	20 mg/kg to 5000 mg/kg
	Specific Electrical Conductivity	IS 14767: 2000	1 µs/cm to 5000 µs/cm	

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	Solid Waste (Municipal Solid Waste) / Hazardous Waste (Industrial Solid Waste, Sludge, Process Waste)	Total Soluble Solids	IS 2720 (Part 21): 1977 (RA 2001)	100 mg/kg to 50000 mg/kg
		Total Soluble Sulphate	IS 2720 (Part 27): 1977 (RA 2006)	50 mg/kg to 5000 mg/kg
		Sodium absorption ratio in Soil Extract	SOP 24/ Rev. 1/ Issued. 4/10/2012	10 meq/kg to 100 meq/kg
II. WATER				
1.	Drinking Water / Water For Food Industry/ Packaged Drinking Water/ Packaged Natural Mineral Water	Colour	IS 3025 (Part 4): 1983 (RA 2002)	1 Hazen to 200 Hazen
		Odour	IS 3025 (Part 5): 1983 (RA 2012)	Qualitative (Agreeable/Disagreeable)
		pH @ 25°C	IS 3025 (Part 11): 1983 (RA 2002)	1 to 14
		Taste	IS 3025 (Part 8): 1984 (RA 2002)	Qualitative (Agreeable/Disagreeable)
		Turbidity	IS 3025 (Part 10): 1984 (RA 2002)	0.1 NTU to 400 NTU
		Total Dissolved Solids	IS 3025 (Part 16): 1984 (RA 2006)	1 mg/l to 5000 mg/l
		Aluminum as Al	IS 3025 (Part 55): 2003	0.001 mg/l to 0.2 mg/l
		Anionic Surface active agent as MBAS	IS 13428: 2005 Annexure K	0.05 mg/l to 5 mg/l
		Barium as Ba	IS 13428: 2005 Annexure F	0.005 mg/l to 0.7 mg/l
		Boron as B	IS 3025 (Part 57): 2005	0.05 mg/l to 100 mg/l
		Calcium as Ca	IS 3025 (Part 40): 1991 (RA 2003)	0.5 mg/l to 5000 mg/l
		Chloride as Cl	IS 3025 (Part 32): 1988 (RA 2003)	0.5 mg/l to 5000 mg/l

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	Drinking Water / Water For Food Industry/ Packaged Drinking Water/ Packaged Natural Mineral Water	Copper as Cu	IS 3025 (Part 42): 1992 (RA 2003)	0.001 mg/l to 1.5mg/l
		Fluoride as F	IS 3025 (Part 60): 2008	0.1 mg/l to 100 mg/l
		Residual free chlorine	IS 3025 (Part 26): 1986 (RA 2003)	0.1 mg/l to 50 mg/l
		Iron as Fe	IS 3025 (Part 53): 2003	0.001 mg/l to 0.3 mg/l
		Magnesium as Mg	IS 3025 (Part 46): 1994 (RA 2003)	0.5 mg/l to 5000 mg/l
		Manganese as Mn	IS 3025 (Part 59): 2006	0.001 mg/l to 0.3 mg/l
		Mineral Oil	IS 3025 (Part 39): 1991 (RA 2003)	1 mg/l to 100 mg/l
		Nitrate as NO ₃	IS 3025 (Part 34): 1988 (RA 2009)	0.01 mg/l to 100 mg/l
		Phenolic compound as C ₆ H ₅ OH	IS 3025 (Part 43): 1992 (RA 2003)	0.001 mg/l to 10 mg/l
		Selenium as Se	IS 3025 (Part 56): 2003	0.01 mg/l to 0.05 mg/l
		Silver as Ag	IS 13428: 2005 Annexure J	0.001 mg/l to 0.1 mg/l
		Sulphate as SO ₄	IS 3025 (Part 24): 1986 (RA 2003)	1 mg/l to 5000 mg/l
		Sulphide as H ₂ S	IS 3025 (Part 29): 1986 (RA 2003)	0.04 mg/l to 10 mg/l
		Total Alkalinity as CaCO ₃	IS 3025 (Part 23): 1986 (RA 2003)	1 mg/l to 5000 mg/l
		Total Hardness as CaCO ₃	IS 3025 (Part 21): 1983 (RA 2009)	0.5 mg/l to 100 mg/l
		Zinc as Zn	IS 3025 (Part 49): 1994 (RA 2009)	0.001 mg/l to 15 mg/l
		Cadmium as Cd	IS 3025 (Part 41): 1992 (RA 2003)	0.001 mg/l to 0.005 mg/l
		Cyanide as CN	IS 3025 (Part 27): 1986 (RA 2009)	0.01 mg/l to 100 mg/l

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	Drinking Water / Water For Food Industry/ Packaged Drinking Water/ Packaged Natural Mineral Water	Lead as Pb	IS 3025 (Part 47): 1994 (RA 2009)	0.005 mg/l to 0.025 mg/l
		Mercury as Hg	IS 3025 (Part 48): 1994 (RA 2003)	0.001 mg/l to 0.01mg/l
		Molybdenum as Mo	IS 3025 (Part 2): 2004 AAS/ APHA (22 nd Edition) 3111 D E: 2012	0.01 mg/l to 0.10 mg/l
		Nickel as Ni	IS 3025 (Part 54): 2003	0.005 mg/l to 0.02 mg/l
		Arsenic as As	IS 3025 (Part 37): 1988 (RA 2003)	0.005 mg/l to 0.5 mg/l
		Chromium as Cr	IS 3025 (Part 52): 2003	0.001 mg/l to 0.05 mg/l
		Borate	IS 13428: 2005 Annexure H	0.5 mg/l to 5.0 mg/l
		Nitrite NO ₂	IS 3025 (Part 34): 1988 (RA 2009)	0.01 mg/l to 1.0 mg/l
		Total Solids	IS 3025 (Part 15): 1984 (RA 2009)	5 mg/l to 5000 mg/l
		Carbonate Hardness as CaCO ₃	IS 3025 (Part 21): 1983 (RA 2009)	0.5 mg/l to 100 mg/l
		Polychlorinated biphenyle (PCB)		
		2-Chlorobiphenyl	APHA (22 nd Edition) 6630: 2012	0.05 µg/l to 0.5 µg/l
		2,3'-Dichlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2',5-Trichlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,4',5-Trichlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2',3,5'-Tetrachlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2',5,5'-Tetrachlorobiphenyl		0.05 µg/l to 0.5 µg/l

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	Drinking Water / Water For Food Industry/ Packaged Drinking Water/ Packaged Natural Mineral Water	2,3,4,4'-Tetrachlorobiphenyl	APHA (22 nd Edition) 6630: 2012	0.05 µg/l to 0.5 µg/l
		2,2',3,4,5'-Pentachlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2',4,5,5'-Pentachlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,3,3',4',6-Pentachlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2',3,4,4',5'-Hexachlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2',3,4,5,5'-Hexachlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2',3,5',6-Pentachlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2',4,4',5,5'-Hexachlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2', 3,3',4,4',5'-Heptachlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2',3,4,4',5,5'-Heptachlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2',3,4,4',5',6-Heptachlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2',3, 4',5,5',6-Heptachlorobiphenyl		0.05 µg/l to 0.5 µg/l
		2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl		0.05 µg/l to 0.5 µg/l

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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Drinking Water / Water For Food Industry/ Packaged Drinking Water/ Packaged Natural Mineral Water	Polynuclear aromatic hydrocarbons (PAH)		
		Naphthalene	APHA (22 nd Edition) 6440: 2012	0.05 µg/l to 0.5 µg/l
		Acenaphthylene		0.05 µg/l to 0.5 µg/l
		Acenaphthene		0.05 µg/l to 0.5 µg/l
		Fluorene		0.05 µg/l to 0.5 µg/l
		Phenanthrene		0.05 µg/l to 0.5 µg/l
		Anthracene		0.05 µg/l to 0.5 µg/l
		Carbazole		0.05 µg/l to 0.5 µg/l
		Fluoranthene		0.05 µg/l to 0.5 µg/l
		Pyrene		0.05 µg/l to 0.5 µg/l
		Benz[a]anthracene		0.05 µg/l to 0.5 µg/l
		Chrysene		0.05 µg/l to 0.5 µg/l
		Benzo[b]fluoranthene		0.05 µg/l to 0.5 µg/l
		Benzo[k]fluoranthene		0.05 µg/l to 0.5 µg/l
		Benzo[a]pyrene		0.05 µg/l to 0.5 µg/l
		Indeno[1,2,3-cd]pyrene		0.05 µg/l to 0.5 µg/l
		Dibenz[a,h]anthracene		0.05 µg/l to 0.5 µg/l
		Benzo[ghi]perylene		0.05 µg/l to 0.5 µg/l

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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Drinking Water / Water For Food Industry/ Packaged Drinking Water/ Packaged Natural Mineral Water	Pesticide Residues		
		Alachlor	USEPA 525.2 Rev. 2: 1995/ USEPA 507 Rev. 2: 1989	0.01 µg/l to 0.5 µg/l
		Atrazine	USEPA 525.2 Rev. 2: 1995/ USEPA 8141A Rev. 1: 1994	0.01 µg/l to 0.5 µg/l
		Aldrin	USEPA 508 Rev. 3: 1989	0.01 µg/l to 0.5 µg/l
		Dieldrin		0.01 µg/l to 0.5 µg/l
		Alpha HCH		0.01 µg/l to 0.5 µg/l
		Beta HCH		0.01 µg/l to 0.5 µg/l
		Butachlor	USEPA 525.2 Rev. 2: 1995/ USEPA 8141A Rev. 1: 1994	0.01 µg/l to 0.5 µg/l
		Chlorpyrifos-methyl		0.01 µg/l to 0.5 µg/l
		Delta HCH	USEPA 508 Rev. 3: 1989	0.01 µg/l to 0.5 µg/l
		2,4- Dichlorophenoxyacetic acid	USEPA 515.1 Rev. 4: 1989	0.01 µg/l to 0.5 µg/l
		o,p DDT	USEPA 508 Rev. 3: 1989	0.01 µg/l to 0.5 µg/l
		p,p DDT		0.01 µg/l to 0.5 µg/l
		o,p DDE		0.01 µg/l to 0.5 µg/l
		p,p DDE		0.01 µg/l to 0.5 µg/l
		o,p DDD		0.01 µg/l to 0.5 µg/l
		p,p DDD		0.01 µg/l to 0.5 µg/l

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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Drinking Water / Water For Food Industry/ Packaged Drinking Water/ Packaged Natural Mineral Water	alpha Endosulfan	USEPA 508 Rev. 3: 1989	0.01 µg/l to 0.5 µg/l
		beta Endosulfan		0.01 µg/l to 0.5 µg/l
		Endosulfan sulphate		0.01 µg/l to 0.5 µg/l
		Ethion	USEPA 1657 A Rev. A: 2000	0.01 µg/l to 0.5 µg/l
		Gamma HCH (Lindane)	USEPA 508 Rev. 3: 1989	0.01 µg/l to 0.5 µg/l
		Isoproturon	USEPA 532 Rev. 1. 2000	0.01 µg/l to 0.5 µg/l
		Malathion	USEPA 8141A Rev. 1: 1994	0.01 µg/l to 0.5 µg/l
		Methyl parathion		0.01 µg/l to 0.5 µg/l
		Monocrotophos		0.01 µg/l to 0.5 µg/l
		Phorate		0.01 µg/l to 0.5 µg/l
		Volatile Organic Compounds (VOCs)		
		Dichlorodifluoromethane	USEPA 5030C Rev. 3: 2003	5 µg/l to 100 µg/l
		Chloromethane		5 µg/l to 100 µg/l
		Vinyl chloride		5 µg/l to 100 µg/l
		Bromomethane		5 µg/l to 100 µg/l
		Chloroethane		5 µg/l to 100 µg/l
		Trichloromonofluoromethane		5 µg/l to 100 µg/l
		1,1-Dichloroethene		5 µg/l to 100 µg/l

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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Drinking Water / Water For Food Industry/ Packaged Drinking Water/ Packaged Natural Mineral Water	Methylene chloride	USEPA 5030C Rev. 3: 2003	5 µg/l to 100 µg/l
		trans-1,2-Dichloroethene		5 µg/l to 100 µg/l
		1,1-Dichloroethane		5 µg/l to 100 µg/l
		cis - 1,2-Dichloroethene		5 µg/l to 100 µg/l
		Bromochloromethane		5 µg/l to 100 µg/l
		2,2-Dichloropropane		5 µg/l to 100 µg/l
		Chloroform		5 µg/l to 100 µg/l
		1,1,1-Trichloroethane		5 µg/l to 100 µg/l
		Carbon Tetrachloride		5 µg/l to 100 µg/l
		1,1-Dichloropropene		5 µg/l to 100 µg/l
		Benzene		5 µg/l to 100 µg/l
		1,2-Dichloroethane		5 µg/l to 100 µg/l
		Trichloroethene		5 µg/l to 100 µg/l
		1,2-Dichloropropane		5 µg/l to 100 µg/l
		Dibromomethane		5 µg/l to 100 µg/l
		Bromodichloromethane		5 µg/l to 100 µg/l
		cis-1,3-Dichloropropene		5 µg/l to 100 µg/l
		Toluene		5 µg/l to 100 µg/l

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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Drinking Water / Water For Food Industry/ Packaged Drinking Water/ Packaged Natural Mineral Water	trans-1,3-Dichloropropene	USEPA 5030C Rev. 3: 2003	5 µg/l to 100 µg/l
		1,1,2-Trichloroethane		5 µg/l to 100 µg/l
		Tetrachloroethene		5 µg/l to 100 µg/l
		1,3-Dichloropropane		5 µg/l to 100 µg/l
		Chlorodibromomethane		5 µg/l to 100 µg/l
		1,2-Dibromoethane		5 µg/l to 100 µg/l
		Chlorobenzene		5 µg/l to 100 µg/l
		1,1,1,2 Tetrachloroethane		5 µg/l to 100 µg/l
		Ethylbenzene		5 µg/l to 100 µg/l
		m&p-Xylene		5 µg/l to 100 µg/l
		o-Xylene		5 µg/l to 100 µg/l
		Styrene		5 µg/l to 100 µg/l
		Bromoform		5 µg/l to 100 µg/l
		Isopropylbenzene		5 µg/l to 100 µg/l
		Bromobenzene		5 µg/l to 100 µg/l
		1,1,2,2-Tetrachlorethane		5 µg/l to 100 µg/l
		1,2,3-Trichloropropane		5 µg/l to 100 µg/l
		n-Propylbenzene		5 µg/l to 100 µg/l

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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Drinking Water / Water For Food Industry/ Packaged Drinking Water/ Packaged Natural Mineral Water	2-Chlorotoluene	USEPA 5030C Rev. 3: 2003	5 µg/l to 100 µg/l
		1,3,5-Trimethylbenzene		5 µg/l to 100 µg/l
		tert-Butylbenzene		5 µg/l to 100 µg/l
		1,2,4-Trimethylbenzene		5 µg/l to 100 µg/l
		sec-Butylbenzene		5 µg/l to 100 µg/l
		1,3-Dichlorobenzene		5 µg/l to 100 µg/l
		p-Isopropyltoluene		5 µg/l to 100 µg/l
		1,4-Dichlorobenzene		5 µg/l to 100 µg/l
		1,2-Dichlorobenzene		5 µg/l to 100 µg/l
		n - Butylbenzene		5 µg/l to 100 µg/l
		1,2-Dibromo-3-Chloropropane		5 µg/l to 100 µg/l
		1,2,4-Trichlorobenzene		5 µg/l to 100 µg/l
		Hexachlorobutadiene		5 µg/l to 100 µg/l
		Naphthalene		5 µg/l to 100 µg/l
		1,2,3-Trichlorobenzene		5 µg/l to 100 µg/l

III. ATMOSPHERIC POLLUTION

1.	Ambient Air Quality Monitoring	Suspended Particulate Matter	IS 5182 (Part 4): 1999 (RA 2005)	10 µg/m ³ to 5000 µg/m ³
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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Ambient Air Quality Monitoring	Sulphur Dioxide	IS 5182 (Part 2): 2001	4 µg/m ³ to 900 µg/m ³
		Nitrogen Dioxide	IS 5182 (Part 6): 2006	9 µg/m ³ to 740 µg/m ³
		Respirable Suspended Particulate Matter (PM10)	IS 5182 (Part 23): 2006	10 µg/m ³ to 5000 µg/m ³
		Ammonia as NH ₃	Method 401, Air Sampling and Analysis, (3 rd Edition): 1988	0.20 µg/m ³ to 700 µg/m ³
		Carbon monoxide	IS 5182 (Part 10): 1999 (RA 2003)	1.0 mg/m ³ to 10 mg/m ³
		Lead as Pb	IS 5182 (Part 22): 2004	0.01 µg/m ³ to 10000 µg/m ³
		Ozone	Method 411, Air Sampling and Analysis, (3 rd Edition): 1988	1 µg/m ³ to 500 µg/m ³
		Nickel as Ni	Method 822, Methods of Air Sampling and Analysis inter society committee, (3 rd Edition): 1988	3 ng/m ³ to 50 µg/m ³
		Arsenic as As	Method 822, Methods of Air Sampling and Analysis inter society committee, (3 rd Edition): 1988	0.2 ng/m ³ to 500 ng/m ³
		Particulate Matter (PM2.5)	SOP 82/ Rev. 0/ Issued. 19/5/2014	5 µg/m ³ to 500 µg/m ³
		Benzene	ASTM D 3686: 2008/ ASTM D 3687: 2001	5 ng/m ³ to 200 ng/m ³
		Benzo (a) Pyrene (Particulate Phase)	USEPA 8270 IS 5182 (Part 41): 1999 (RA 2005)	0.05 ng/m ³ to 1 ng/m ³

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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	Stack /Source Emission Monitoring	Carbon dioxide	IS 13270: 1992 (RA 2003)	0.1 % to 99.0%
		Carbon monoxide	IS 13270: 1992 (RA 2003)	10 mg/Nm ³ to 2000 mg/Nm ³
		Flue gas Temperature °C	By Digital Thermocouple	30 °C to 250 °C
		Sulphur Dioxide	IS 11255 (Part 2): 1985 (RA 2003)	1 mg/Nm ³ to 1000 mg/Nm ³
		Nitrous Oxide as NO	IS 11255 (Part 7): 2003	1 mg/Nm ³ to 5000 mg/Nm ³
		Particulate Matter	IS 11255 (Part 1): 1985 (RA 2003)	5 mg/Nm ³ to 1000 mg/Nm ³
		Flow Rate	IS 11255 (Part 3): 2008	100 Nm ³ /h to 250000 Nm ³ /h
3.	Indoor Air Quality Monitoring (Workplace, Occupational Exposure, Office, Sick Building, Public Buildings, Hospitals, Residences)	Oxides of Nitrogen	NIOSH Method 6014 Issue. 1: 1994	7 µg /m ³ to 250 µg /m ³
		Illumination	Lab SOP NO-23 Rev. 1: 2012	1 LUX to 50000 LUX
		Carbon Monoxide-CO	NIOSH Method 6604 Issue. 1: 1996	1 µg/m ³ to 2000 µg/m ³
		Oxygen	NIOSH Method 6601 Issue. 2: 1994	1 % to 25 %
		Ammonia as NH ₃	NIOSH Method 6015 Issue. 1: 1994	20 µg/m ³ to 500 µg/m ³
	Hydrogen Sulphide H ₂ S	NIOSH Method 6013 Issue. 1: 1994	1 µg/m ³ to 100 µg/m ³	

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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
IV. OILS & LUBRICANTS				
1	Used Oil & Waste Oil	Relative Density/Density	IS 1448 (Part 32): 1992 (RA 2003)	0.6 g/ml to 1.2 g/ml
		Water Content	IS 1448 (Part 40): 1987 (RA 2006)	0 to 25 %
		Ash Content	IS 1448 (Part 4): 1984 (RA 2002)	0.01 % 10 %
		Gross Calorific Value	IS 1448 (Part 6): 1984 (RA 2002)	100 Cal /kg to 13000 Cal /kg
		Net Calorific Value	IS 1448 (Part 7): 2004	100 Cal /kg to 13000 Cal /kg
		Arsenic as As	USEPA 3031 Rev. 0: 1996	1.0 mg/kg to 50 mg/kg
		Copper as Cu		1.0 mg/kg to 100 mg/kg
		Nickel as Ni		1.0 mg/kg to 100 mg/kg
		Cadmium as Cd		1 mg/kg to 100 mg/kg
		Chromium as Cr		1 mg/kg to 100 mg/kg
		Lead as Pb		1 mg/kg to 100 mg/kg
		Water & Sediment	ASTM D 1796 -04 (Reapproved 2009)	0.05 % to 10 %
		Acid and base number	ASTM-D 974-08	(1 to 25) mgKOH/g
		Total Halogens as Cl	USEPA 5050: 1994/ IS 3025 (Part 32): 1988 (RA 2003)	10 mg/kg to 5000 mg/kg

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AT SITE

I. ATMOSPHERIC POLLUTION

1.	Noise Monitoring	Noise Level (Ambient Noise Leq db (A))	IS 9989: 1981	34 db(A) to 134 db(A)
		Noise Level (Source DG Noise)	SOP 05/ Rev. 1/ Issued. 5/10/2012	34 db(A) to 134 db(A)

-X-X-X-X-X-X-X-X-X-X-X-X-

NOTE: The Laboratory has demonstrated competence for the stated scope for **WATER**. This however **does not fully cover** the specification requirements of **BIS for the Packaged Drinking Water as per IS 14543 and the Packaged Natural Mineral Water IS 13428.**