**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-7938 Page 1 of 7

Validity 26.09.2018 to 25.09.2020 Last Amended on --

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are	Range of Testing / Limits of Detection
			performed	

## **CHEMICAL TESTING**

I	WATER			
1.	Bore Water/ Drinking water/ Domestic water/ Boiler Water/ DM Water /	Colour	IS 3025 (Part 4)-1983, RA 2017 (Pt. Co. Visual comparison method). APHA 23 <sup>rd</sup> Edn 2120 B: 2017	2.00 Hazen Units to 500 Hazen Units
	Construction Water/ Surface Water/ Industrial	Odour	IS 3025 (Part 5) - 1983, RA 2018	Qualitative (Agreeable/Dis Agreeable
	Water	Turbidity	IS 3025 (Part 10) - 1984 RA 2017 APHA 23 <sup>rd</sup> Edn 2130 B: 2017	1.0 to 1000 NTU
		pH @ 25 °C	IS 3025 (Part 11) -1983 RA 2017 (Electrometric method) APHA 23 <sup>rd</sup> Edn 4500 H <sup>+</sup> - B: 2017	2 to 13
		Electrical Conductivity @ 25 °C	IS 3025 (Part 14) - 2013 APHA 23 <sup>rd</sup> Edn 2510 B:2017	1.0 µS/cm to 10000 µS/cm
		Total Dissolved Solids	IS 3025 (Part 16)- 1984 RA 2006, Dried at 180°C APHA 23 <sup>rd</sup> Edn 2540 C: 2017	2.0 mg/l to 5000 mg/l
		Acidity as CaCO <sub>3</sub>	IS 3025 (Part 22)- 1986 RA 2014, (Indicator Method) APHA 23 <sup>rd</sup> Edn 2310 B: 2017	2.0 mg/l to 200 mg/l

**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-7938 Page 2 of 7

Validity 26.09.2018 to 25.09.2020 Last Amended on --

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Phenolphthalein Alkalinity as CaCO <sub>3</sub>	IS 3025 (Part 23) - 1986 RA 2014 APHA 23 <sup>rd</sup> Edn 2320 B:2017	2.0 mg/l to 200 mg/l
		Total Alkalinity as CaCO <sub>3</sub>	IS 3025 (Part 23)- 1986 RA 2014 (Titration method) APHA 23 <sup>rd</sup> Edn 2320 B: 2017	2.0 mg/l to 500 mg/l
		Total Hardness as CaCO₃	IS 3025 (Part 21)- 2009 RA 2014 (EDTA Titrimetric Method) APHA 23 <sup>rd</sup> Edn 2340 C: 2017	2.0 mg/l to 5000 mg/l
		Calcium as Ca	IS 3025 (Part 40)- 1991 RA 2014 (EDTA Titrimetric Method) APHA 23 <sup>rd</sup> Edn 3500 Ca B: 2017	2.0 mg/l to 1000 mg/l
		Magnesium as Mg	APHA 23 <sup>rd</sup> Edn 3500 Mg B: 2017 (Calculation method)	2.0 mg/l to 1000 mg/l
		Chloride as Cl <sup>-</sup>	IS 3025 (Part 32)- 1988 RA 2014 (Argentometric method) APHA 23 <sup>rd</sup> Edn 4500 CI B: 2017	2.0 mg/l to 5000 mg/l
		Sulphate as SO <sub>4</sub> <sup>2</sup>	IS 3025 (Part 24)- 1986 RA 2014 (Turbidity method)	5.0 mg/l to 1000 mg/l
		Sodium as Na	IS 3025 (Part 45)- 1993 RA 2014 (Flame photometry method) APHA 23 <sup>rd</sup> Edn 3500 Na B: 2017	2.0 mg/l to 500 mg/l

**Accreditation Standard** ISO/IEC 17025: 2005

Page 3 of 7 **Certificate Number** TC-7938

Validity 26.09.2018 to 25.09.2020 Last Amended on --

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Potassium as K	IS 3025 (Part 45)- 1993 RA 2014 (Flame photometry method) APHA 23 <sup>rd</sup> Edn 3500 K B: 2017	1.0 mg/l to 100 mg/l
		Free Residual Chlorine	IS 3025 (Part 26 ): 1986 RA 2014 (lodometric method) APHA 23rd Edn 4500 Cl- B: 2017	1.0 mg/l to 10 mg/l
		Fluoride as F <sup>-</sup>	APHA 23 <sup>rd</sup> Edn. 4500 F D: 2017 (SPADNS Method)	0.1 mg/l to 15 mg/l
		Iron as Fe	APHA 23 <sup>rd</sup> Edn 3500 Fe- B:2017 (1:10 Phenanthroline method)	0.05 mg/l to 5 mg/l
		Manganese as Mn	APHA 23 <sup>rd</sup> Edn 3500 B:2017	0.01 mg/l to 100 mg/l
		Nitrate as NO <sub>3</sub>	IS 3025 (Part 34)- 1988 RA 2014	0.1 mg/l to 100 mg/l
		Total Silica as SiO <sub>2</sub>	IS 3025 (Part 35)- 1988, RA 2014 APHA 23 <sup>rd</sup> Edn 4500 SiO <sub>2</sub> C: 2017	1.0 mg/l to 1000 mg/l
		Reactive Silica as SiO <sub>2</sub>	IS 3025 (Part 35)- 1988, RA 2014 APHA 23 <sup>rd</sup> Edn 4500 SiO <sub>2</sub> C: 2017	1.0 mg/l to 1000 mg/l
		Colloidal silica	IS 3025 (Part 35)- 1988, RA 2014 APHA 23 <sup>rd</sup> Edn 4500 SiO <sub>2</sub> C: 2017	1.0 mg/l to 1000mg/l
		Phosphate as P	IS 3025 (Part 31)- 1988 RA 1999	0.1 mg/l to 100 mg/l

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**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-7938 Page 4 of 7

Validity 26.09.2018 to 25.09.2020 Last Amended on --

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			(Vanado Molybdo Phosphorid Acid Method) APHA 23 <sup>rd</sup> Edn.2017- 4500 P-C	
		Hexavalent Chromium (Cr <sup>6+)</sup>	APHA 23 <sup>rd</sup> Edn. 2017- 3500 Cr B	0.02 mg/l to 8.0 mg/l
II.	ENVIRONMENT AN	D POLLUTION		
1.	Liquid Effluents/ Waste Water /ETP Water, STP Water	pH @ 25 °C	IS 3025 (Part 11)- 1983 RA 2017 APHA 23 <sup>rd</sup> Edn 4500 H <sup>+</sup> - B: 2017 (Electrometric method)	2 to 13
		Electrical Conductivity @ 25 °C	IS 3025 (Part 14) - 2013 APHA 22 <sup>nd</sup> Edn 2510 B:2017 (Laboratory method)	1.0 μS/cm to 10000 μS/cm
		Turbidity	IS 3025 (Part 10)- 1984 RA 2017 APHA 23 <sup>rd</sup> Edn 2130 B: 2017	1.0 NTU to 1000 NTU
		Total Dissolved Solids	IS 3025 (Part 16)- 1984 RA 2017 APHA 23 <sup>rd</sup> Edn 2540 C: 2017 (TDS dried at 180 <sup>0</sup> C)	2.0 mg/l to 5000 mg/l
		Total Suspended Solids	IS : 3025(Part 17)-1984 RA 2017, APHA 23 <sup>rd</sup> Edn. 2540 D: 2017	2.0 mg/l to 5000 mg/l
		Total Solids	IS 3025 (Part 15) 1984, RA 2014, APHA 23 <sup>rd</sup> Edn.2540 B: 2017	2.0 mg/l to 5000 mg/l

**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-7938 Page 5 of 7

Validity 26.09.2018 to 25.09.2020 Last Amended on --

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		Oil & Grease	IS 3025 (Part 39) 1991, RA 2014	2.0 mg/l to 2000 mg/l
		Phenolphthalein Alkalinity as CaCO <sub>3</sub>	IS 3025 (Part 23)- 1986 RA 2014 APHA 23 <sup>rd</sup> Edn 2320 B: 2017	2.0 mg/l to 200 mg/l
		Total Alkalinity as CaCO₃	IS 3025 (Part 23)- 1986 RA 2014 (Titration method) APHA 23 <sup>rd</sup> Edn 2320 B: 2017	2.0 mg/l to 500 mg/l
		Total Hardness as CaCO <sub>3</sub>	IS 3025 (Part 21) 2009  RA 2014  APHA 23 <sup>rd</sup> Edn 2340 C: 2017 (EDTA Titrimetric method)	1.0 mg/l to 5000 mg/l
		Calcium as Ca	IS 3025 (Part 40)- 1991 RA 2014 APHA 23 <sup>rd</sup> Edn 3500 Ca B: 2017 (EDTA Titrimetric method)	2.0 mg/l to 1000 mg/l
		Magnesium as Mg	APHA 23 <sup>rd</sup> Edn 3500 Mg B:2017 (Calculation method)	2.0 mg/l to 1000 mg/l
		Chloride as Cl	IS 3025 (Part 32)- 1988 RA 2014 (Argentometric method) APHA 23 <sup>rd</sup> Edn 4500 CI B: 2017	2.0 mg/l to 5000 mg/l
		Sulphate as SO₄²-	IS 3025 (Part 24)- 1986 RA 2014 (Turbidimetric method)	5.0 mg/l to 1000 mg/l
		Fluoride as F	APHA 23 <sup>rd</sup> Edn 4500 F D: 2017 (SPADNS Method)	0.1 mg/l to 15 mg/l

**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-7938 Page 6 of 7

Validity 26.09.2018 to 25.09.2020 Last Amended on --

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Free Residual Chlorine	IS 3025 (Part 26 )- 1986 RA 2014 (lodometric method-l) APHA 23 <sup>rd</sup> Edn 4500 Cl- B: 2017	1.0 mg/l to 10 mg/l
		Iron as Fe	APHA 23 <sup>rd</sup> Edn 3500 Fe- B: 2017 (1,10 Phenanthroline method)	0.05 mg/l to 5 mg/l
		Nitrate as NO₃	IS 3025 (Part 34)- 1988 RA 2014 (Chromotrophic Acid Method)	0.1 mg/l to 100 mg/l
		Sodium	IS 3025 (Part 45)- 1993 RA 2014 (Flame Emission photometric method) APHA 23 <sup>rd</sup> Edn 3500 Na B: 2017	2.0 mg/l to 500 mg/l
		Potassium	IS 3025 (Part 45)- 1993 RA 2014 (Flame Emission photometric method) APHA 23 <sup>rd</sup> Edn 3500 K B: 2017	1.0 mg/l to 100 mg/l
		Total Silica as SiO <sub>2</sub>	IS 3025 (Part 35)- 1988, RA 2014 APHA 23 <sup>rd</sup> Edn 4500 SiO₂ C: 2017	1.0 mg/l to 1000 mg/l
		Reactive Silica as SiO <sub>2</sub>	IS 3025 (Part 35)- 1988, RA 2014 APHA 23 <sup>rd</sup> Edn 4500 SiO <sub>2</sub> C: 2017	1.0 mg/l to 1000 mg/l
		Colloidal silica	IS 3025 (Part35)- 1988 RA 2014	1.0 mg/l to 1000mg/l

**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-7938 Page 7 of 7

Validity 26.09.2018 to 25.09.2020 Last Amended on --

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			APHA 23 <sup>rd</sup> Edn 4500 SiO₂ C: 2017 (Calculation Method)	
		Manganese as Mn	APHA 23 <sup>rd</sup> Edn - 3500 Mn. B: 2017	0.1 mg/l to 100 mg/l
		Phosphate as P	IS 3025 (Part 31)- 1988 RA 1999 (Vanadomolybdo- Phosphoric Acid Method) APHA 23 <sup>rd</sup> Edn. 4500 P-C: 2017	0.1 mg/l to 100 mg/l
		Hexavalent Chromium (Cr <sup>6+)</sup>	APHA 23 <sup>rd</sup> Edn. 3500 Cr B: 2017	0.02 mg/l to 10.0 mg/l
		Chemical Oxygen Demand	IS 3025 (Part 58)- 2006, RA 2017, APHA 23 <sup>rd</sup> Edn. 5220 B: 2017	5.0 mg/l to 5000 mg/l
		Dissolved Oxygen	IS 3025 (Part 38)- 1989, RA 2014, APHA 23 <sup>rd</sup> Edn. 4500 O- B : 2017	1 mg/l to 9 mg/l
		Biochemical Oxygen Demand 3 day at 27°C	IS 3025 (Part 44)-1993, RA 2014	3.0 mg/l to 1000 mg/l