

Laboratory **Eco Care, Manoj Talkies (Basement Floor), Kumarpur, Asansol, District Burdwan, West Bengal**

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

Certificate Number **TC-5109 (in lieu of T-4346)**

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Validity **29.12.2016 to 28.12.2018**

Last Amended on **20.02.2018**

Sl.	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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CHEMICAL TESTING

I.	POLLUTION AND ENVIRONMENT			
1.	Waste Water & Liquid Effluent	Electrical Conductivity	APHA 22nd edition 2012: 2510 B (Conductivity meter)	20 µS/cm to 200 mS/cm
		Colour	APHA 22nd edition 2012: 2120 B & C (Visual Comparison method)	5 Hazen Unit to 50 Hazen Units
		pH	APHA 22nd edition 2012: 4500 H ⁺ B	2 to 10
		Total Solids	APHA 22nd edition 2012: 2540 B (Gravimetric)	50 mg/l to 10000 mg/l
		Dissolved Solids	APHA 22nd edition 2012: 2540 C IS 3025 (Part 16): 1999 (RA 2006) (Gravimetric)	10 mg/l to 2500 mg/l
		Total Suspended Solids	APHA 22nd edition 2012: 2540 D IS 3025 (Part 17): 1999 (RA 2012) (Gravimetric)	5 mg/l to 10000 mg/l
		Turbidity	APHA 22nd edition 2012: 2130 B (Nephelometric)	1.0 NTU to 100 NTU
		Settleable Solids	APHA 22nd edition 2012: 2540F (Imhoff cone & Gravimetric)	5 mg/l to 1000 mg/l
		Alkalinity	APHA 22nd edition 2012: 2320B (Titrimetric)	10 mg/l to 500 mg/l
		Ammoniacal Nitrogen	APHA 22nd edition 2012: 4500 NH ₃ B&C IS 3025 (Part 34): 1988 (RA 2003) (Distillation followed by Titrimetric)	5 mg/l to 500 mg/l

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		Chloride	APHA 22nd edition 2012: 4500 Cl ⁻ B (Titrimetric)	20 mg/l to 5000 mg/l
		Dissolved Oxygen	APHA 22nd Edition 2012: 4500 O C IS 3025 (Part 38): 1989 (RA 2003) (Modified Winkler Method)	1 mg/l to 14 mg/l
		Fluoride	APHA 22nd Edition 2012: 4500 F- D (Distillation followed by Spectrophotometric)	0.05 mg/l to 5 mg/l
		Total Hardness (CaCO ₃)	APHA 22nd Edition 2012: 2340 C (Titrimetric)	20 mg/l to 1000 mg/l
		Kjeldahl Nitrogen	APHA 22nd Edition 2012: 4500 N _{org} - A & B IS 3025 (Part 34): 1988 (RA 2003) (Digestion followed by Titrimetric)	5 mg/l to 100 mg/l
		Nitrite Nitrogen	APHA 22nd Edition 2012: 4500 NO ₂ B IS 3025 (Part 34): 1988 (RA 2003) (Spectrophotometric Method)	0.02 mg/l to 10.00 mg/l
		Nitrate Nitrogen	APHA 22nd Edition 2012: 4500 NO ₃ ⁻ E IS 3025 (Part 34): 1988 (RA 2003) (Reduction followed by Spectrophotometric Method)	0.20 mg/l to 100 mg/l
		Phosphate as P	APHA 22nd Edition 2012: 4500 P D IS 3025 (Part 31): 1988 (RA 2003) (Spectrophotometric method)	0.05 mg/l to 20 mg/l

Ajay Kumar Sharma
Convenor

N. Venkateswaran
Program Director

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		Sulphate	APHA 22nd Edition 2012: 4500 SO ₄ ²⁻ E (Spectrophotometric method)	5 mg/l to 4000 mg/l
		Silica	APHA 22nd Edition 2012: 4500 SiO ₂ C (Spectrophotometric method)	1 mg/l to 100 mg/l
		Hexavalent Chromium	APHA 22nd Edition 2012: 3500 Cr B IS 3025 (Part 52): 2003 (Spectrophotometric method)	0.01 mg/l to 100 mg/l
		Iron	APHA 22nd Edition 2012: 3500 Fe B (Spectrophotometric method)	0.05 mg/l to 20 mg/l
		Calcium	APHA 22nd edition 2012: 3500 Ca B (Titrimetric Method)	5 mg/l to 1000 mg/l
		Magnesium	APHA 22nd edition 2012: 3500 Mg B IS 3025 (Part 46): 1994 (RA 2003)	0.5 mg/l to 200 mg/l
		Acidity	APHA 22nd edition:2012: 2310 B IS 3025 (Part 22): 1986 (RA 2003) (Titrimetric Method)	5 mg/l to 200 mg/l
		Arsenic	IS 3025 (Part 37): 1988 (RA 2003) (SDDC method)	0.01 mg/l to 3.0 mg/l
		BOD (Three day at 27 °C)	IS 3025 (Part 44): 1993 (RA 2009)	2.0 mg/l to 10,000 mg/l
		COD	APHA 22nd edition, 2012: 5220 B IS 3025 (Part 58): 2006 (Dichromate Reflux)	10 mg/l to 10,000 mg/l
		Chromium	IS 3025 (Part 52): 2003 (Spectrophotometric method)	0.02 mg/l to 10 mg/l

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		Oil & Grease	APHA 22nd Edition 2012:5520 B IS 3025 (Part 39): 1991 (RA 2003) (Gravimetric Method)	2 mg/l to 200 mg/l
II.	WATER			
1.	Drinking water, Surface Water, Ground water	Electrical Conductivity	IS 3025 (Part 14): 1984 (RA 2013) APHA 22nd Edition 2012:2510 B	5 µS/cm to 10000 µS/cm
		Colour	IS 3025 (Part 4): 1983 (RA 2002)	5 Hazen Unit to 50 Hazen Units
		pH	IS 3025 (Part 11): 1983 (RA 2002)	4 to 12
		Total Solids	IS 3025 (Part 15): 1984 (RA 2009) APHA 22nd Edition 2012:2540 B (Gravimetric)	10 mg/l to 1000 mg/l
		Total Dissolved Solids	IS 3025 (Part 16): 1999 (RA 2006) APHA 22nd Edition 2012:2540 C (Gravimetric)	10 mg/l to 2500 mg/l
		Total Suspended Solids	IS 3025 (Part 17): 1999 (RA 2012) APHA 22nd Edition 2012:2540 D (Gravimetric)	5 mg/l to 1000 mg/l
		Turbidity	IS 3025 (Part 10): 1984 (RA 2002) APHA 22nd Edition 2012:2130B (Nephelometric)	5 NTU to 100 NTU
		Settle-able Solids	APHA 22nd Edition 2012:2540F (Imhoff cone & Gravimetric)	5 mg/l to 1000 mg/l
		Alkalinity	IS 3025 (Part 23): 1986 (RA 2003) APHA 22nd Edition 2012:2320B (Titrimetric)	5 mg/l to 500 mg/l

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		Ammonical Nitrogen	APHA 22nd Edition 2012: 4500NH ₃ B&C (Distillation followed by Titrimetric)	5 mg/l to 500 mg/l
		Chloride	IS 3025 (Part 32): 1988 (RA 2003) APHA 22nd Edition 2012: 4500 Cl ⁻ B (Titrimetric Method)	5 mg/l to 5000 mg/l
		Residual Free Chlorine	IS 3025 (Part 26): 1986 (RA 2003)	0.5 mg/l to 2 mg/l
		Dissolved Oxygen	IS 3025 (Part 38): 1989 (RA 2003) APHA 22nd Edition 2012: 4500 O C (Modified Winkler Method)	1 mg/l to 14 mg/l
		Fluoride	IS 3025 (Part 60): 2008 APHA 22nd Edition 2012: 4500 F D (Distillation followed by Spectrophotometric)	0.05 mg/l to 10 mg/l
		Total Hardness (CaCO ₃)	IS 3025 (Part 21): 2009 APHA 22nd Edition 2012:2340 C (Titrimetric)	5 mg/l to 1000 mg/l
		Total Kjeldahl Nitrogen	IS 3025 (Part 34): 1988 (RA 2003) APHA 22nd Edition 2012: 4500 N _{org} - A & B (Digestion followed by Titrimetric method)	5 mg/l to 100 mg/l
		Nitrite Nitrogen	IS 3025 (Part 34): 1988 (RA 2003) APHA 22nd Edition 2012: 4500 NO ₂ B (Spectrophotometric Method)	0.02 mg/l to 10.00 mg/l

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		Nitrate Nitrogen	IS 3025 (Part 34): 1988 (RA 2003) APHA 22nd Edition 2012: 4500 NO ₃ ⁻ E (Reduction followed by Spectrophotometric Method)	0.20 mg/l to 100 mg/l
		Phosphate as P	IS 3025 (Part 31): 1988 (RA 2003) APHA 22nd edition, 2012: 4500 P D (Spectrophotometric method)	0.05 mg/l to 20 mg/l
		Sulphate	IS 3025 (Part 24): 1986 (RA 2003) (Spectrophotometric method)/ APHA 22nd Edition 2012: 4500 SO ₄ ²⁻ E	5 mg/l to 400 mg/l
		Silica	IS 3025 (Part 35): 1988 (RA 2003) APHA 22nd Edition 2012: 4500 SiO ₂ C (Spectrophotometric method)	1 mg/l to 100 mg/l
		Hexavalent Chromium	IS 3025 (Part 52): 2003 APHA 22nd edition, 2012: 3500 Cr B (Spectrophotometric Method)	0.01 mg/l to 10 mg/l
		Iron as Fe	IS 3025 (Part 53) : 2003 APHA 22nd Edition 2012: 3500 Fe B (Spectrophotometric method)	0.05 mg/l to 20 mg/l
		Calcium	IS 3025 (Part 40): 1991 (RA 2003) APHA 22nd edition 2012: 3500 Ca B (Titrimetric Method)	5 mg/l to 1000 mg/l

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		Magnesium	IS 3025 (Part 46): 1994 (RA 2003) APHA 22nd edition 2012: 3500 Mg B	1 mg/l to 200 mg/l
		Chromium	IS 3025 (Part 52): 2003 (Spectrophotometric method)	0.02 mg/l to 10 mg/l
		Acidity	IS 3025 (Part 22): 1986 (RA 2003) APHA 22nd edition 2012: 2310 B (Titrimetric Method)	5 mg/l to 500 mg/l
		BOD (Three day at 27°C)	IS 3025(Part 44): 1993 (RA 2009)	2.0 mg/l to 500 mg/l
		COD	IS 3025 (Part 58): 2006 APHA 22nd edition 2012: 5220 B (Dichromate Reflux)	10 mg/l to 1000 mg/l
		Oil & Grease	IS 3025 (Part 39): 1991 (RA 2003) APHA 22nd Edition 2012: 5520 B (Gravimetric Method)	2 mg/l to 50 mg/l
III.	ATMOSPHERIC POLLUTION			
1.	Ambient Air	Oxides of Nitrogen (NO ₂ / NO _x)	IS 5182 (Part 6): 2006	6 µg/m ³ to 750 µg/m ³
		Sulphur Oxides (SO ₂)	IS 5182 (Part 2): 2001	4 µg/m ³ to 1050µg/m ³
		Suspended Particulate Patter (SPM)	IS 5182 (Part 4): 1999 (RA 2005)	5 µg/m ³ to 5000µg/m ³
		PM10	IS 5182 (Part 23): 2006	20 µg/m ³ to 500µg/m ³
		PM2.5	EPA CFR-40 (pt 50) Appendix-1	10 µg/m ³ to 200µg/m ³
		Ammonia	ISC 401, 3 rd edition 1999	20 µg/m ³ to 500µg/m ³
		Ozone as O ₃	ISC 411, 3 rd edition 1999	10 µg/m ³ to 200µg/m ³
		Total Flouride	IS 5182 (Part 13): 1991 (RA 2003)	2.0 µg/m ³ to 20µg/m ³
2.	Noise	Ambient Noise (Leq, Lmax, Lmin)	IS 9989: 1981 (RA 2001)	35 dB(A) to 130 dB(A)

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		Noise Source Measurement	IS 4758: 1968 (RA 2002)	35 dB(A) to 130 dB(A)
3.	Source Emission (Stack Gases)	Particulate Matter	IS 11255 (Part 1): 1995 (RA 2003)/ IS11255 (Part 3): 2008	5 mg/Nm ³ to 2000 mg/Nm ³
		Sulphur dioxide	IS 11255 (Part 2): 1985 (RA 2003)	3.4 mg/Nm ³ to 10000 mg/Nm ³
		Nitrogen Oxides (NO _x)	IS 11255 (Part 7): 2005	2 mg/Nm ³ to 2000 mg/Nm ³
		Carbon dioxide	IS 13270: 1992 (RA 2003)	0.2 % to 20 %
		Carbon monoxide	IS 13270: 1992 (RA 2003)	0.2 % to 1 %
		Oxygen	IS 13270: 1992 (RA 2003)	0.2 % to 20 %