

Laboratory Ecosystem Resource Management Pvt. Ltd., First Floor, Ashoka Pavillion A, New Civil Road, Surat, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6603 (*in lieu of T-2013*)

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Validity 26.10.2017 to 25.10.2019

Last Amended on 05.03.2018

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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BIOLOGICAL TESTING

I.	WATER			
1.	Drinking Water, Ground Water, Surface Water	Total Coliform	APHA 23 rd Edition, (Part-9000) Section: 9221 B & C	1.1 MPN/100ml to 1600 MPN/100ml
			APHA 23 rd Edition, (Part-9000) Section: 9221 D	Qualitative (Present/Absent)

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CHEMICAL TESTING

I.	WATER			
1.	Drinking Water, Surface Water, Ground Water	pH	IS 3025 (Part 11)	4 to 10
		Total dissolved solids	IS 3025 (Part 16)	5mg/l to 5000mg/l
		Total Hardness	IS 3025 (Part 21)	1mg/l to 1000mg/l
		Calcium	IS 3025 (Part 40)	2mg/l to 500mg/l
		Magnesium	IS 3025 (Part 46)	2mg/l to 200mg/l
		Chloride	IS 3025 (Part 32) (Argentometric Method)	1mg/l to 1000mg/l
		Total Alkalinity	IS 3025 (Part 23)	25mg/l to 500mg/l
		Sodium	IS 3025 (Part 45) (Flame Photometric Method)	5mg/l to 50mg/l
		Potassium	IS 3025 (Part 45) APHA 23 rd Edition: 3500-K B	5mg/l to 50mg/l
		Ammonical Nitrogen	IS 3025 (Part 34) (Nesslerization Method)	2mg/l to 100mg/l
		Iron as Fe	IS 3025 (Part 53) (1,10 Phenanthroline method)	0.05mg/l to 25mg/l
		Hexavalent Chromium	IS 3025(Part 52) (Diphenylcarbazide method)	0.03mg/l to 5mg/l
		Phenolic Compounds	IS 3025 (Part 43) (4- Aminoantipyrine method without Chloroform Extraction)	0.01mg/l to 50mg/l
		Phosphate	APHA 23 rd Edition, (Part 4000) Section: 4500-P, D,	0.02mg/l to 50mg/l
Turbidity	APHA 23 rd Edition, (Part 2000) Section: 2130-B,	1 NTU to 1000 NTU		

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II.	POLLUTION AND ENVIRONMENT			
1.	Waste Water (Effluent, Sewage)	pH	IS 3025 (Part 11)	2 to 12
		Total dissolved solids	IS 3025 (Part 16)	10mg/l to 60000mg/l
		Total Hardness	IS 3025 (Part 21)	10mg/l to 10000mg/l
		Calcium	IS 3025 (Part 40)	4mg/l to 4000mg/l
		Magnesium	IS 3025 (Part 46)	4mg/l to 500mg/l
		Chloride	IS 3025 (Part 32) (Argentometric Method)	4mg/l to 10000mg/l
		Ammonical Nitrogen	IS 3025 (Part 34) (Titrimetric Method)	5mg/l to 500mg/l
		Ammonical Nitrogen	IS 3025 (Part 34) (Nesslerization Method)	0.1mg/l to 25mg/l
		Iron as Fe	IS 3025 (Part 53) (1,10 Phenanthroline method)	0.1mg/l to 50mg/l
		Hexavalent Chromium	IS 3025(Part 52) (Diphenylcarbazide method)	0.03mg/l to 5mg/l
		Phenolic Compounds	IS 3025 (Part 43) (4- Aminoantipyrine method without Chloroform Extraction)	0.1mg/l to 100mg/l
		Phosphate	APHA 23 rd Edition., (Part – 4000) Section:4500–P,D	0.1mg/l to 50mg/l
		Total Alkalinity as CaCO ₃	IS 3025 (Part 23)	25mg/l to 2000mg/l
		BOD	IS 3025 (Part 44)	4mg/l to 1000mg/l
		COD	APHA 23 rd Edition, (Part – 5000) Section: 5220-B (Open Reflux Method)	10mg/l to 10000mg/l
	Sodium	IS 3025 (Part 45) (Flame Photometric Method)	5mg/l to 150mg/l	
	Potassium	IS 3025 (Part 45) (Flame Photometric Method)	2mg/l to 50mg/l	
	Conductivity	APHA 23 rd Edition, (Part-2000) Section : 2510-B	1 μS/cm to 50000 μS/cm	

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		Color	APHA 23 rd Edition, (Part – 2000) Section : 2120-C (Spectrophotometric - Single Wavelength Method)	5 Hazen to 700 Hazen
		Total Solids	IS 3025 (Part15)	4mg/l to 60000mg/l
		Total Suspended Solids	IS 3025 (Part17)	2mg/l to 2000mg/l
		Temperature	IS 3025 (Part 09)	5°C to 70°C
		Acidity	APHA 23 rd Edition, (Part- 2000) Section: 2310-B (titration)	25 mg/l to 1000 mg/l
		Chlorine residual	IS 3025 (Part 26) (Iodometric Method)	0.1mg/l to 10mg/l
		Total kjehldal nitrogen (TKN)	IS 3025 (Part 34) (Nesslerization Method)	0.1mg/l to 10mg/l
		Total kjehldal nitrogen (TKN)	IS 3025 (Part 34) (Titrimetric Method)	5mg/l to 100mg/l
		Nitrite Nitrogen	IS 3025 (Part 34) (NEDA Method)	0.01mg/l to 2mg/l
		Nitrate Nitrogen	IS 3025 (Part 34) (Devadra Alloy Method)	2mg/l to 50mg/l
		Sulphate	APHA 23 rd Edition, (Part-4000) Section : 4500-E SO ₄ ⁻² (Turbidity Method)	1mg/l to 100mg/l
			APHA 23 rd Edition, (Part-4000) Section : 4500-C SO ₄ ⁻² (Gravimetric Method)	10mg/l to 1000mg/l
		Bromide	APHA 23 rd Edition, (Part-4000) Section : 4500-Br B (Phenol Red Colorimetric Method)	0.1mg/l to 5mg/l
		Silica	APHA 23 rd Edition, (Part-4000) Section : 4500-SiO ₂ C (Molybdosilicate Method)	0.1mg/l to 50mg/l

Amit Kumar
Convenor

N. Venkateswaran
Program Director

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		Total Chromium	IS 3025 (Part 52) (Diphenylcarbazide method)	0.03mg/l to 10mg/l
		Oil & Grease	IS 3025 (Part 39) (Partition Gravimetric Method)	1mg/l to 1000mg/l
		Cadmium (Cd)	IS 3025 (Part 41)	0.05mg/l to 2mg/l
		Copper (Cu)	IS 3025 (Part 42) AAS Method	0.5mg/l to 10mg/l
		Lead (Pb)	IS 3025 (Part 47)	0.02mg/l to 10mg/l
		Mercury (Hg)	APHA 23 rd Edition, (Part -3000) Section : 3500 Hg (AAS)	0.01mg/l to 10mg/l
		Nickel (Ni)	IS 3025 (Part 54) AAS method	0.3mg/l to 10mg/l
		Zinc (Zn)	IS 3025 (Part 49) AAS Method	0.1mg/l to 10mg/l
2.	Soil	pH	IS 2720 (Part- 26)	5 to 10
		Available Calcium	WI/5.4/02-I/08 (Issue No.02, Issue Date : 02/05/2017)	50l mg/100g to 10000 mg/100g
		Available Magnesium	WI/5.4/02-I/09 (Issue No.02, Issue Date : 02/05/2017)	50 mg/100g to 10000 mg/100g
		Available Sodium	WI/5.4/02-I/10 (Issue No.02, Issue Date : 02/05/2017)	5 mg/100g to 1000 mg/100g
		Available Potassium	WI/5.4/02-I/11 (Issue No.02, Issue Date : 02/05/2017)	5 mg/100g to 500 mg/100g
III.	ATMOSPHERIC POLLUTION			
1.	Ambient air	SPM	IS 5182 (Part 4)	10 µg/m ³ to 1500 µg/m ³
		RSPM (PM ₁₀)	IS 5182 (Part 13)	10 µg/m ³ to 700 µg/m ³

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		PM _{2.5}	WI/5.4/02-B/03, Issue No. 01, Date:01/01/2010	10 µg/m ³ to 300 µg/m ³
		SO ₂	IS 5182 (Part 2)	6 µg/m ³ to 500 µg/m ³
		NO ₂	IS 5182 (Part 6)	6 µg/m ³ to 500 µg/m ³
		NH ₃	WI/5.4/02-B/06, Issue No. 01, Issue Date : 01/01/2010	1 µg/m ³ to 500 µg/m ³
		Cl ₂	IS 5182 (Part 19)	1 µg/m ³ to 500 µg/m ³
		O ₃	IS 5182 (Part 9)	20 µg/m ³ to 60 µg/m ³
		Fluoride	IS 5182 (Part 13)	3.2 µg/m ³ to 100 µg/m ³
		Lead	IS 5182 (Part 22)	0.01 µg/m ³ to 10 µg/m ³
		CS ₂	IS -5182 (Part -20)	1 µg/m ³ to 50 µg/m ³
		H ₂ S	IS-5182 (Part-VII)	5 µg/m ³ to 100 µg/m ³
2.	Stack Emission	PM	IS 11255 (Part 1)	5 mg/Nm ³ to 2000 mg/Nm ³
		SO ₂	IS 11255 (Part 2)	5 mg/Nm ³ to 1000 mg/Nm ³
		NO _x	SOP No. WI/5.4/02-G/03, Issue No. 01 and Issue Date: 01/01/2010	5 mg/Nm ³ to 1000 mg/Nm ³
		NH ₃	IS 11255 (Part 6) (Nessler Method)	5 mg/Nm ³ to 500 mg/Nm ³
		Cl ₂	ERM/LAB/Stack /Rev/01/10/17/04 Issue No. : 01 Issue Date: 02/10/2017	5 mg/Nm ³ to 500 mg/Nm ³
		Fluoride (Particulate)	IS 11255 (Part 5)	0.3 mg/Nm ³ to 20 mg/Nm ³
		Fluoride (Gaseous)	IS 11255 (Part 5)	0.3 mg/Nm ³ to 20 mg/Nm ³

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		CS ₂	IS-11255 (Part-4)	3.2 mg/Nm ³ to 50 mg/Nm ³
		H ₂ S	IS-11255 (Part-4)	3.2 mg/Nm ³ to 50 mg/Nm ³

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<u>CHEMICAL TESTING</u>				
AT SITE				
I.	ATMOSPHERIC POLLUTION			
1.	Ambient Noise	Ambient Noise	IS 9989	30 dB(A) to 100 dB(A)

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