

Laboratory **Gaheli Environmental Laboratory, Shed No. 1, Second Floor,  
DSIDC Complex, Wazirpur Industrial Area, New Delhi**

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

Certificate Number **TC-7794**

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Validity **30.08.2018 to 29.08.2020**

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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**

<b>I. ATMOSPHERIC POLLUTION</b>				
1.	<b>Ambient Air/ Work Zone Air</b>	Particulate Matter (PM <sub>2.5</sub> )	SOP No. GEL/LAB/SOP/ AIR/03 Issue No.:01 dated 02.03.2018	12 µg/m <sup>3</sup> to 300 µg/m <sup>3</sup>
		Respirable Suspended Particulate Matter (PM <sub>10</sub> )	IS 5182 (Part 23)	12 µg/m <sup>3</sup> to 1000 µg/m <sup>3</sup>
		Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2)	9 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>
		Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6)	6 µg/m <sup>3</sup> to 800 µg/m <sup>3</sup>
		Ammonia (NH <sub>3</sub> )	SOP No. GEL/LAB/SOP/ AIR/09 Issue No.:01 dated 02.03.2018	20 µg/m <sup>3</sup> to 200 µg/m <sup>3</sup>
		Ozone (O <sub>3</sub> )	IS 5182 (Part 9)	20 µg/m <sup>3</sup> to 200 µg/m <sup>3</sup>
2.	<b>Stationary Source/Stack/ Chimney/ Fugitive Emission</b>	Particulate Matter (PM)	IS 11255 (Part 1)	2 mg/Nm <sup>3</sup> to 1000 mg/Nm <sup>3</sup>
		Sulphur Dioxide (SO <sub>2</sub> )	IS 11255 (Part 2)	2 mg/Nm <sup>3</sup> to 500 mg/Nm <sup>3</sup>
		Oxide of Nitrogen (NO <sub>x</sub> as NO <sub>2</sub> )	IS 11255 (Part 7)	2 mg/Nm <sup>3</sup> to 800 mg/Nm <sup>3</sup>
		Carbon Monoxide (CO)	SOP No. GEL/LAB/SOP/ STACK/05 Issue No.:02 dated 25.07.2018	0.1 % to 8 % v/v
		Carbon Dioxide (CO <sub>2</sub> )	SOP No. GEL/LAB/SOP/ STACK/05 Issue No.:02 dated 25.07.2018	0.1 % to 20 %v/v
		Oxygen (O <sub>2</sub> )	SOP No. GEL/LAB/SOP/ STACK/05 Issue No.:02 dated 25.07.2018	0.1 % to 20 % v/v
3.	<b>Noise (Ambient/Source/ DG)</b>	Ambient Noise	IS 9876/ SOP No. GEL/LAB/SOP/ NOISE/01 Issue No.:01	30 dB(A) to 130 dB(A)

**Amit Kumar  
Convenor**

**Anuja Anand  
Program Manager**

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			dated 02.03.2018	
		DG set Noise	IS 4758	30 dB(A) to 130 dB(A)
		Source/Machine Noise	IS 4758	30 dB(A) to 130 dB(A)
<b>II.</b>	<b>WATER</b>			
<b>1.</b>	<b>Swimming Pool Water</b>	Temperature	IS 3025 (Part 9)	5 °C to 80 248 °C
		Turbidity	IS 3025 (Part 10)	1 NTU to 1000 NTU
		pH	IS 3025 (Part 11)	2 to 12
		Specific Conductivity	IS 3025 (Part 14)	1 µmhos/cm to 10,000 µmhos/cm
		Alkalinity as CaCO <sub>3</sub> (Phenolphthalein & Total)	IS 3025 (Part 23)	2 mg/l to 1000 mg/l
		Chloride as Cl	IS 3025 (Part 32)	2 mg/l to 1500 mg/l
		Residual Free Chlorine as Cl <sub>2</sub>	IS 3025 (Part 26)	0.1 mg/l to 10 mg/l
		Total Dissolved Solids (TDS)	IS 3025 (Part 16)	5 mg/l to 2000 mg/l
		Dissolved Oxygen as O <sub>2</sub>	IS 3025 (Part 38)	0.1 mg/l to 12 mg/l
<b>2.</b>	<b>Ground water, Surface water, Drinking Water, Packaged Drinking water, Packaged Mineral water</b>	Temperature	IS 3025 (Part 9)	5 °C to 80 °C
		Turbidity	IS 3025 (Part 10)	1 NTU to 1000 NTU
		pH	IS 3025 (Part 11)	2 to 12
		Specific Conductivity	IS 3025 (Part 14)	1 µmhos/cm to 10,000 µmhos/cm
		Alkalinity as CaCO <sub>3</sub> (Phenolphthalein & Total)	IS 3025 (Part 23)	2 mg/l to 1000 mg/l
		Total Hardness as CaCO <sub>3</sub>	IS 3025 (Part 21)	2 mg/l to 1500 mg/l
		Chloride as Cl	IS 3025 (Part 32)	2 mg/l to 1500 mg/l
		Acidity as CaCO <sub>3</sub>	IS 3025 (Part 22)	2 mg/l to 1000 mg/l
		Residual Free Chlorine as Cl <sub>2</sub>	IS 3025 (Part 26)	0.1 mg/l to 10 mg/l
		Total Dissolved Solids (TDS)	IS 3025 (Part 16)	5 mg/l to 2000 mg/l

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		Total Suspended Solids (TSS)	IS 3025 (Part 17)	5 mg/l to 500 mg/l
		Calcium as Ca	IS 3025 (Part 40)	2 mg/l to 400 mg/l
		Magnesium as Mg	IS 3025 (Part 21)	2 mg/l to 300 mg/l
		Fluoride as F	4500F-D, APHA 23rd Ed.	0.1 mg/l to 15 mg/l
		Sodium as Na	IS 3025 (Part 45)	5 mg/l to 1000 mg/l
		Potassium as K	IS 3025 (Part 45)	5 mg/l to 1000 mg/l
		Phosphorus as P	4500-P D, APHA 23rd Ed.	0.1 mg/l to 50 mg/l
		TKN as N	IS 3025 (Part 34)	0.1 mg/l to 100 mg/l
		Ammonical Nitrogen as NH <sub>3</sub>	IS 3025 (Part 34)	0.1 mg/l to 100 mg/l
		Nitrite as NO <sub>2</sub>	IS 3025 (Part 34)	0.1 mg/l to 50 mg/l
		Nitrate as NO <sub>3</sub>	IS 3025 (Part 34)	0.1 mg/l to 100 mg/l
		Chemical Oxygen Demand (COD)	IS 3025 (Part 58)	2 mg/l to 500 mg/l
		Biochemical Oxygen Demand (BOD) (3 Days at 27°C)	IS 3025 (Part 44)	2 mg/l to 300 mg/l
		Dissolved Oxygen as O <sub>2</sub>	IS 3025 (Part 38)	0.1 mg/l to 12 mg/l
		Silica as SiO <sub>2</sub>	4500-SiO <sub>2</sub> (C/D), APHA 23rd Ed.	2 mg/l to 100 mg/l
		Sulphate as SO <sub>4</sub>	IS 3025 (Part 24)	2 mg/l to 500 mg/l
<b>3.</b>	<b>Industrial Process Water, Cooling Water &amp; Boiler Water</b>	Temperature	IS 3025 (Part 9)	5 °C to 90 °C
		Turbidity	IS 3025 (Part 10)	1 NTU to 1000 NTU
		pH	IS 3025 (Part 11)	2 to 12
		Specific Conductivity	IS 3025 (Part 14)	1 µmhos/cm to 10,000 µmhos/cm
		Alkalinity as CaCO <sub>3</sub> (Phenolphthalein & Total)	IS 3025 (Part 23)	2 mg/l to 1000 mg/l
		Total Hardness as CaCO <sub>3</sub>	IS 3025 (Part 21)	2 mg/l to 1500 mg/l
		Chloride as Cl	IS 3025 (Part 32)	2 mg/l to 1500 mg/l
		Acidity as CaCO <sub>3</sub>	IS 3025 (Part 22)	2 mg/l to 1000 mg/l
		Total Dissolved Solids (TDS)	IS 3025 (Part 16)	5 mg/l to 2000 mg/l

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		Total Suspended Solids (TSS)	IS 3025 (Part 17)	5 mg/l to 500 mg/l
		Calcium as Ca	IS 3025 (Part 40)	2 mg/l to 400 mg/l
		Magnesium as Mg	IS 3025 (Part 21)	2 mg/l to 300 mg/l
		Fluoride as F	4500F-D, APHA 23rd Ed.	0.1 mg/l to 15 mg/l
		Sodium as Na	IS 3025 (Part 45)	5 mg/l to 1000 mg/l
		Potassium as K	IS 3025 (Part 45)	5 mg/l to 1000 mg/l
		Phosphorus as P	4500-P D, APHA 23rd Ed.	0.1 mg/l to 50 mg/l
		TKN as N	IS 3025 (Part 34)	0.1 mg/l to 100 mg/l
		Dissolved Oxygen as O <sub>2</sub>	IS 3025 (Part 38)	0.1 mg/l to 12 mg/l
		Silica as SiO <sub>2</sub>	4500-SiO <sub>2</sub> (C/D), APHA 23rd Ed.	2 mg/l to 100 mg/l
		Sulphate as SO <sub>4</sub>	IS 3025 (Part 24)	2 mg/l to 500 mg/l
4.	<b>Construction Water</b>	Sulphate as SO <sub>4</sub>	IS 3025 (Part 24)	5 mg/l to 1000 mg/l
		Chloride as Cl	IS 3025 (Part 32)	2 mg/l to 2000 mg/l
		Total Suspended Matter, (TSS)	IS 3025 (Part 17)	5 mg/l to 1000 mg/l
		<b>Water Neutralization</b>		
		To neutralize 100ml samples of water using 0.02N NaOH	IS 3025 (Part 22)	0.1 ml to 50 ml
		To neutralize 100ml samples of water using 0.02N H <sub>2</sub> SO <sub>4</sub>	IS 3025 (Part 22)	0.1 ml to 100 ml
III.	<b>RESIDUES IN WATER</b>			
1.	<b>Trace Metals</b>	Manganese as Mn	3110, APHA 23rd Ed.	0.1 mg/l to 10 mg/l
		Cadmium as Cd	3110, APHA 23rd Ed.	0.01 mg/l to 10 mg/l
		Lead as Pb	3110, APHA 23rd Ed.	0.01 mg/l to 10 mg/l
		Zinc as Zn	3110, APHA 23rd Ed.	0.5 mg/l to 50 mg/l
		Chromium as Cr (Total)	3110, APHA 23rd Ed.	0.05 mg/l to 10 mg/l
		Chromium as Cr <sup>+6</sup> (Hexavalent)	IS 3025 (Part 52)	0.05 mg/l to 10 mg/l

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		Aluminum as Al	IS 3025 (Part 55)	0.03 mg/l to 10 mg/l
		Boron as B	IS 3025 (Part 57)	0.1 mg/l to 10 mg/l
		Nickel as Ni	3110, APHA 23rd Ed.	0.02 mg/l to 10 mg/l
		Copper as Cu	3110, APHA 23rd Ed.	0.05 mg/l to 10 mg/l
		Iron as Fe	3110, APHA 23rd Ed.	0.1 mg/l to 50 mg/l
<b>IV.</b>	<b>POLLUTION &amp; ENVIRONMENT</b>			
<b>1.</b>	<b>Waste Water (Industrial/ Domestic Effluent)</b>	Temperature	IS 3025 (Part 9)	5 °C to 80 °C
		Turbidity	IS 3025 (Part 10)	1 NTU to 1000 NTU
		pH	IS 3025 (Part 11)	2 to 12
		Specific Conductivity	IS 3025 (Part 14)	1 µmhos/cm to 10,000 µmhos/cm
		Alkalinity as CaCO <sub>3</sub> (Phenolphthalein & Total)	IS 3025 (Part 23)	2 mg/l to 1000 mg/l
		Total Hardness as CaCO <sub>3</sub>	IS 3025 (Part 21)	2 mg/l to 1500 mg/l
		Chloride as Cl	IS 3025 (Part 32)	2 mg/l to 1500 mg/l
		Acidity as CaCO <sub>3</sub>	IS 3025 (Part 22)	2 mg/l to 1000 mg/l
		Residual Free Chlorine as Cl <sub>2</sub>	IS 3025 (Part 26)	0.1 mg/l to 10 mg/l
		Total Dissolved Solids (TDS)	IS 3025 (Part 16)	5 mg/l to 2000 mg/l
		Total Suspended Solids (TSS)	IS 3025 (Part 17)	5 mg/l to 500 mg/l
		Calcium as Ca	IS 3025 (Part 40)	2 mg/l to 400 mg/l
		Magnesium as Mg	IS 3025 (Part 21)	2 mg/l to 300 mg/l
		Fluoride as F	4500F-D, APHA 23rd Ed.	0.1 mg/l to 15 mg/l
		Sodium as Na	IS 3025 (Part 45)	5 mg/l to 1000 mg/l
		Potassium as K	IS 3025 (Part 45)	5 mg/l to 1000 mg/l
		Phosphorus as P	4500-P D, APHA 23rd Ed.	0.1 mg/l to 50 mg/l
		TKN as N	IS 3025 (Part 34)	0.1 mg/l to 100 mg/l
		Ammonical Nitrogen as NH <sub>3</sub>	IS 3025 (Part 34)	0.1 mg/l to 100 mg/l

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		Nitrite as NO <sub>2</sub>	IS 3025 (Part 34)	0.1 mg/l to 50 mg/l
		Nitrate as NO <sub>3</sub>	IS 3025 (Part 34)	0.1 mg/l to 100 mg/l
		Chemical Oxygen Demand (COD)	IS 3025 (Part 58)	2 mg/l to 500 mg/l
		Biochemical Oxygen Demand (BOD) (3 Days at 27°C)	IS 3025 (Part 44)	2 mg/l to 300 mg/l
		Dissolved Oxygen as O <sub>2</sub>	IS 3025 (Part 38)	0.1 mg/l to 12 mg/l
		Silica as SiO <sub>2</sub>	4500-SiO <sub>2</sub> (C/D), APHA 23rd Ed.	2 mg/l to 100 mg/l
		Sulphate as SO <sub>4</sub>	IS 3025 (Part 24)	2 mg/l to 500 mg/l
		Oil & Grease	IS 3025 (Part 39)	2 mg/l to 1000 mg/l
<b>2.</b>	<b>Soil &amp; Sediment</b>	Exchangeable Potassium	GEL/LAB/SOP/SOIL/07, Issued No.:01 dated 02.03.2018	10 mg/kg to 1000 mg/kg
		Exchangeable Sodium	GEL/LAB/SOP/SOIL/06, Issued No.:01 dated 02.03.2018	10 mg/kg to 1000 mg/kg
		Exchangeable Calcium	GEL/LAB/SOP/SOIL/08, Issued No.:01 dated 02.03.2018	10 mg/kg to 10000 mg/kg
		Exchangeable Magnesium	GEL/LAB/SOP/SOIL/08, Issued No.:01 dated 02.03.2018	10 mg/kg to 5000 mg/kg
		Sulphate as SO <sub>4</sub>	IS 2720(Part 27)	0.2 % to 5.0 %
		Chloride as Cl	GEL/LAB/SOP/SOIL/14, Issued No.:01 dated 02.03.2018	0.1 % to 5 %
		Organic Matter/ Organic Carbon	IS 2720(Part 22)	0.1 %to 10 %
		Moisture	IS 2720(Part 2)	1 % to 90 %
		pH Value	IS 2720(Part 26)	1 to 14
		Specific Conductivity	IS 14767	5 µmhos/cm to 5000 µmhos/cm

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		Phosphorous as P	GEL/LAB/SOP/SOIL/10, Issued No.:01 dated 02.03.2018	2 mg/kg to 100 mg/kg
		Sulphur as S	GEL/LAB/SOP/SOIL/15, Issued No.:01 dated 02.03.2018	4 mg/kg to 100 mg/kg
		Total Dissolved Solids (TDS)	IS 2720(Part 21)	1 % to 10 %
		TKN as N	GEL/LAB/SOP/SOIL/18, Issued No.:01 dated 02.03.2018	5 mg/kg to 1000 mg/kg
		Iron as Fe	3050-B, PP 1-12, USEPA 2nd Revision	5 mg/kg to 5000 mg/kg
		Manganese as Mn	3050-B, PP 1-12, USEPA 2nd Revision	5 mg/kg to 1000 mg/kg
		Lead as Pb	3050-B, PP 1-12, USEPA 2nd Revision	1 mg/kg to 100 mg/kg
		Zinc as Zn	3050-B, PP 1-12, USEPA 2nd Revision	1 mg/kg to 100 mg/kg
		Nickel as Ni	3050-B, PP 1-12, USEPA 2nd Revision	1 mg/kg to 100 mg/kg
		Cadmium as Cd	3050-B, PP 1-12, USEPA 2nd Revision	1 mg/kg to 100 mg/kg
		Chromium as Cr	3050-B, PP 1-12, USEPA 2nd Revision	1 mg/kg to 100 mg/kg
		Copper as Cu	3050-B, PP 1-12, USEPA 2nd Revision	2 mg/kg to 100 mg/kg
		Sodium Absorption Ratio (SAR)	GEL/LAB/SOP/SOIL/19, Issued No.:01 dated 02.03.2018	By Calculation
		Cation Exchange Capacity (CEC)	IS 2720(Part 24)	1 meq/100gm to 100 meq/100gm

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		Texture	GEL/LAB/SOP/SOIL/22, Issued No.:01 dated 02.03.2018	Sand:Upto 99% Clay:Upto 99% Silt:Upto 99%
		Bulk Density	IS 2720(Part 28)	0.5 kg/m <sup>3</sup> to 2.0 kg/m <sup>3</sup>
		Porosity	GEL/LAB/SOP/SOIL/20, Issued No.:01 dated 02.03.2018	Qualitative
		Permeability at 27°C (K <sub>27</sub> )	IS 2720(Part 17)	1 cm/sec to 5 cm/sec
		Calcium Carbonate as CaCO <sub>3</sub>	IS 2720(Part 23)	1 % to 90 %

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