

Laboratory **Mumbai Waste Management Limited, Laboratory, Plot No. P-32, MIDC, Taloja, Dist. Raigad, Maharashtra**

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

Certificate Number **TC-7166**

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Validity **09.08.2019 to 12.04.2020**

Last Amended on --

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 & ENVIRONMENT			
1.	Waste Water, Effluent, Sewage	pH @25°C	APHA 23 rd Edition, June 2017; 4500 H ⁺ B	2 to 11
		Temperature	APHA 23 rd Edition, June 2017; 2550-B	Ambient to 45°C
		Conductivity	APHA 23 rd Edition, June 2017; 2510 B	2 µs/cm to 10,000µs/cm
		Acidity as CaCO ₃	APHA 23 rd Edition, June 2017; 2310 B	10 mg/L to 1000 mg/L
		Alkalinity as CaCO ₃	APHA 23 rd Edition, June 2017; 2320 B	10 mg/L to 1000 mg/L
		Total Solids	APHA 23 rd Edition, June 2017; 2540 B	10 mg/L to 10000 mg/L
		Total Dissolved Solids	APHA 23 rd Edition, June 2017; 2540 C	10 mg/L to 10000 mg/L
		Total Suspended Solids	APHA 23 rd Edition, June 2017; 2540 D	10 mg/L to 10000 mg/L
		Fixed Solids	APHA 23 rd Edition, June 2017; 2540 E	10 mg/L to 10000 mg/L
		Volatile Solids	APHA 23 rd Edition, June 2017; 2540 E	10 mg/L to 10000 mg/L
		Chlorides as Cl ⁻	APHA 23 rd Edition, June 2017; 4500 Cl ⁻ B	10 mg/L to 10000 mg/L
		Sulphates as SO ₄ ⁻²	APHA 23 rd Edition, June 2017; 4500 SO ₄ ⁻² E	20 mg/L to 1000 mg/L
		Sulphide as S ⁻²	APHA 23 rd Edition, June 2017; 4500 S ² F	10 mg/L to 100 mg/L
		Sulphite as SO ₃ ⁻²	APHA 23 rd Edition, June 2017; 4500 SO ₃ ⁻² , B	10 mg/L to 1000 mg/L

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		Nitrate as NO ₃ -N	IS 3025 (Part 34): 1998 (RA 2009)	5 mg/L to 300 mg/L
		Nitrite NO ₂ -N	APHA 23 rd Edition, June 2017; 4500 NO ₂ -B	1 mg/L to 100 mg/L
		Ammonical Nitrogen as NH ₃	APHA 23 rd Edition, June 2017; 4500 NH ₃ B, C	1 mg/L to 1000 mg/L
		Fluorides as F ⁻	APHA 23 rd Edition, June 2017; 4500 F-B,D	1 mg/L to 50 mg/L
		Residual Chlorine as Cl	APHA 23 rd Edition, June 2017; 4500 Cl B	1 mg/L to 100 mg/L
		Cyanides as CN ⁻	APHA 23 rd Edition, June 2017; 4500 CN-C, E	0.1 mg/L to 50 mg/L
		Total Hardness as CaCO ₃	APHA 23 rd Edition, June 2017; 2340 C	10 mg/L to 5000 mg/L
		Dissolved Phosphate	APHA 23 rd Edition, June 2017; 4500-P-B &D	1 mg/L to 500 mg/L
		Dissolved Oxygen	APHA 23 rd Edition, June 2017; 4500-O-B&C	1 mg/L to 8 mg/L
		Oil & Grease	APHA 23 rd Edition, June 2017; 5520 O & G B	10 mg/L to 10000 mg/L
		Chemical Oxygen Demand	APHA 23 rd Edition, June 2017; 5220 B	5 mg/L to 50000 mg/L
		Biological Oxygen Demand (3 Days at 27°C)	IS:3025 (Part 44):1993 Ref: 2003	3 mg/L to 2500 mg/L
		Phenolic Compounds as C ₆ H ₅ OH	APHA 23 rd Edition, June 2017; 5530 B & D	1 mg/L to 100 mg/L
		Calcium as Ca	APHA 23 rd Edition, June 2017; 3500 Ca B	10 mg/L to 1000 mg/L
		Magnesium as Mg	APHA 23 rd June Edition, 2017; 3500-Mg B	10 mg/L to 1000 mg/L
		Iron as Fe	APHA 23 rd Edition, June 2017; (Part 3500-Fe :B)	0.1 mg/L to 500 mg/L
		Total Silica as SiO ₂	APHA 23 rd Edition, June 2017; 4500 C	0.1 mg/L to 100 mg/L
		Hexavalent Chromium as	APHA 23 rd Edition, June	0.5 mg/L to 100 mg/L

Ruchi Guntuku
Convenor

Sunita Rawat
Program Manager

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		Cr ⁺⁶	2017; 3500 Cr B	
		Cadmium Cd	APHA 23 rd Edition, June 2017; 3120 B	0.1 mg/L to 100 mg/L
		Total Chromium as Cr	APHA 23 rd Edition, June 2017; 3120 B	0.1 mg/L to 200 mg/L
		Lead as Pb	APHA 23 rd Edition, June 2017; 3120 B	0.05 mg/L to 100 mg/L
		Manganese as Mn	APHA 23 rd Edition, June 2017; 3120 B	0.05 mg/L to 100 mg/L
		Nickel as Ni	APHA 23 rd Edition, June 2017; 3120 B	0.05 mg/L to 200 mg/L
		Arsenic as As	APHA 23 rd Edition, June 2012; 3120 B	0.02 mg/L to 100 mg/L
		Zinc as Zn	APHA 23 rd Edition, June 2017; 3120 B	0.05 mg/L to 200 mg/L
		Copper as Cu	APHA 23 rd Edition, June 2017; 3120 B	0.03 mg/L to 100 mg/L
2.	Hazardous Waste (Solid/ Semi Solid)	pH	USEPA 1998 SW-846; 9045 C	2 to 11
		Bulk Density	ASTM D 5057-2010	0.2 g/cc to 2 g/cc
		Calorific Value	IS 1350:Part 2-1975 (Reff:2010)	50 cal/g to 11000 cal/g
		Flash Point (Ignitability)	USEPA 1998, SW-846; 1020 A	Ambient to 80°C
		Loss on drying at 105°C (Moisture Content)	US EPA 1998, SW-846; 1684	1% to 95%
		Loss on ignition at 550°C	US EPA 1998, SW-846; 1684	1% to 99%
		Ash Content at 900°C	US EPA 1998, SW-846; 1684	1% to 99%
		Paint Filter Liquid Test	USEPA 1998, SW-846; 9095 B	Qualitative (Free Liquid Present / Absent)
		Reactive Cyanide (as	USEPA 1998, SW-846;	1mg/kg to 50 mg/kg

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		HCN)	9010 C & 9014	
		Reactive Sulfide as H ₂ S	USEPA 1998, SW-846; 9030 B & 9034	10 mg/kg to 50000 mg/kg
		n-Hexane Extractable Materials	USEPA 1998, SW-846; 3540 C & 9071 B	1% to 5%
		Iron as Fe	USEPA 1998, SW-846; 3050 B	5 mg/kg to 1000 mg/kg
		Cadmium as Cd	USEPA 1998, SW-846; 3050 B	0.5 mg/kg to 500 mg/kg
		Lead as Pb	USEPA 1998, SW-846; 3050 B	10 mg/kg to 500 mg/kg
		Manganese as Mn	USEPA 1998, SW-846; 3050 B	5 mg/kg to 200 mg/kg
		Nickel as Ni	USEPA 1998, SW-846; 3050 B	5 mg/kg to 1000 mg/kg
		Zinc as Zn	USEPA 1998, SW-846; 3050 B	5 mg/kg to 1000 mg/kg
		Copper as Cu	USEPA 1998, SW-846; 3050 B	5 mg/kg to 1000 mg/kg
		Total Chromium as Cr	USEPA 1998, SW-846; 3050 B	5 mg/kg to 1000 mg/kg
		Carbon Hydrogen Nitrogen Sulphur	Lab SOP No. 027, Issue no. 04, Rev date: 01.12.17	0.01% to 72.53% 0.01% to 6.09% 0.01% to 6.51% 0.01% to 7.44%
		TCLP (Toxicity Characteristic Leaching Procedure) Metals	USEPA 1998, SW-846; 1311	
		Iron as Fe	USEPA 1998, SW-846; 3010 A-ICP	0.1 mg/L to 50 mg/L
		Hexavalent Chromium as Cr ⁺⁶	APHA 23 rd Edition, June 2017: 3500 Cr-B	0.05 mg/L to 500 mg/L
		Cadmium as Cd	USEPA 1998, SW-846; 3010 A-ICP	0.01 mg/L to 100 mg/L
		Total Chromium as Cr	USEPA 1998, SW-846; 3010	0.05 mg/L to 200 mg/L

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			A-ICP	
		Lead as Pb	USEPA 1998, SW-846; 3010 A-ICP	0.05 mg/L to 100 mg/L
		Manganese as Mn	USEPA 1998, SW-846; 3010 A-ICP	0.05 mg/L to 100 mg/L
		Nickel as Ni	USEPA 1998, SW-846; 3010 A-ICP	0.05 mg/L to 200 mg/L
		Copper as Cu	USEPA 1998, SW-846; 3010 A-ICP	0.5 mg/L to 100 mg/L
		Zinc as Zn	USEPA 1998, SW-846; 3010 A-ICP	0.05 mg/L to 20 mg/L
		Arsenic as As	USEPA 1998, SW 846; 3010 A-ICP	0.02 mg/L to 10 mg/L
II.	WATER			
1.	Bore Well, Surface Water	pH @25°C	APHA 23 rd Edition, June 2017; 4500 H ⁺ B	2 to 11
		Temperature	APHA 23 rd Edition, June 2017; 2550-B	Ambient to 45°C
		Conductivity	APHA 23 rd Edition, June 2017; 2510 B	2 µs/cm to 10,000µs/cm
		Acidity as CaCO ₃	APHA 23 rd Edition, June 2017; 2310 B	10 mg/L to 1000 mg/L
		Total Suspended Solids	APHA 23 rd Edition, June 2017; 2540 D	10 mg/L to 10000 mg/L
		Fixed Solids	APHA 23 rd Edition, June 2017; 2540 E	10 mg/L to 10000 mg/L
		Volatile Solids	APHA 23 rd Edition, June 2017; 2540 E	10 mg/L to 10000 mg/L
		Chlorides as Cl ⁻	APHA 23 rd Edition, June 2017; 4500 Cl ⁻ B	10 mg/L to 1000 mg/L
		Sulphates as SO ₄ ⁻²	APHA 23 rd Edition, June 2017; 4500 SO ₄ ⁻² E	20 mg/L to 1000 mg/L
		Sulphide as S ⁻²	APHA 23 rd Edition, June	10 mg/L to 100 mg/L

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			2017; 4500 S ² F	
		Sulphite as SO ₃ ²⁻	APHA 23 rd Edition, June 2017; 4500 SO ₃ ²⁻ , B	10 mg/L to 1000 mg/L
		Nitrate as NO ₃ -N	IS: 3025 (Part 34)-1998; (Reff-2009)	5 mg/L to 300 mg/L
		Ammonical Nitrogen as NH ₃ N	APHA 23 rd Edition, June 2017; 4500 NH ₃ B, C	1 mg/L to 1000 mg/L
		Fluorides as F ⁻	APHA 23 rd Edition, June 2017; 4500 F-B,D	1 mg/L to 50 mg/L
		Residual Chlorine as Cl	APHA 23 rd Edition, June 2017; 4500 Cl B	1 mg/L to 100 mg/L
		Cyanides as CN ⁻	APHA 23 rd Edition, June 2017; 4500 CN-C, E	0.5 mg/L to 50 mg/L
		Total Hardness as CaCO ₃	APHA 23 rd Edition, June 2017; 2340 C	10 mg/L to 5000 mg/L
		Dissolved Phosphorus as P	APHA 23 rd Edition, June 2017; 4500-P-B & D	1 mg/L to 500 mg/L
		Dissolved Oxygen	APHA 23 rd Edition, June 2017; 4500-O-B&C	1 mg/L to 8 mg/L
		Oil & Grease	APHA 23 rd Edition, June 2017; 5520 O & G B	10 mg/L to 10000 mg/L
		Chemical Oxygen Demand	APHA 23 rd Edition, June 2017; 5220 B	5 mg/L to 50000 mg/L
		Biochemical Oxygen Demand (3 Days at 27°C)	IS: 3025 (Part 44): 1993 Ref: 2003	3 mg/L to 2500 mg/L
		Phenolic Compounds as C ₆ H ₅ OH	APHA 23 rd Edition, June 2017; 5530 B & D	1 mg/L to 100 mg/L
		Calcium as Ca	APHA 23 rd Edition, June 2017; 3500 Ca B	10 mg/L to 1000 mg/L
		Magnesium as Mg	APHA 23 rd Edition, June 2017; 3500-Mg B	10 mg/L to 1000 mg/L
		Iron as Fe	APHA 23 rd Edition, June 2017; (Part 3500-Fe :B)	0.1 mg/L to 500 mg/L
		Total Silica as SiO ₂	APHA 23 rd Edition, June	0.1 mg/L to 100 mg/L

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			2017; 4500 C	
		Hexavalent Chromium as Cr ⁺⁶	APHA 23 rd Edition, June 2017; 3500 Cr B	0.05 mg/L to 100 mg/L
		Cadmium Cd	APHA 23 rd Edition, June 2017; 3120 B	0.1 mg/L to 100 mg/L
		Total Chromium as Cr	APHA 23 rd Edition, June 2017; 3120 B	0.2 mg/L to 200 mg/L
		Lead as Pb	APHA 23 rd Edition, June 2017; 3120 B	0.05 mg/L to 100 mg/L
		Manganese as Mn	APHA 23 rd Edition, June 2017; 3120 B	0.05 mg/L to 100 mg/L
		Nickel as Ni	APHA 23 rd Edition, June 2017; 3120 B	0.05 mg/L to 200 mg/L
		Arsenic as As	APHA 23 rd Edition, June 2017; 3120 As B	0.02 mg/L to 100 mg/L
		Zinc as Zn	APHA 23 rd Edition, June 2017; 3120	0.05 mg/L to 200 mg/L
		Copper as Cu	APHA 23 rd Edition, June 2017; 3120 B	0.03 mg/L to 100 mg/L
III.	ATMOSPHERIC POLLUTION			
1.	Ambient Air Quality Monitoring	Sulphur Dioxide (SO ₂)	IS 5182 (Part II) : 2001 (Reff. 2006)	4 µg/m ³ to 200 µg/m ³
		Oxides of Nitrogen(NO _x)	IS 5182 (Part VI) : 2006	6 µg/m ³ to 740 µg/m ³
		Ammonia (NH ₃)	Std. Method of Air sampling and analysis-3 rd & method No. 401 (APHA Year-1992)	22 µg/m ³ to 700 µg/m ³
		Lead as Pb	IS 5182(Part 22): 2004 (RA 2009)	0.03 µg/m ³ to 10 µg/m ³
		Particulate Matter PM 2.5	Lab SOP NO. 108 based on CPCB Guidelines-2011	5 µg/m ³ to 250 µg/m ³
		Particulate Matter PM 10	IS 5182 (Part 23): 2006	10 µg/m ³ to 2000 µg/m ³
2.	Stack Emission	Sulphur Dioxide (SO ₂)	IS 11255 (Part 2) 1985	4 mg/Nm ³ to 400 mg/Nm ³

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			(RA 2009)	
		Oxides of Nitrogen (NO _x)	IS 11255 (Part 7) 2005	4 mg/Nm ³ to 200 mg/Nm ³
		Particulate Matter	IS 11255 (Part 1) 1985 (RA 2014)	5 mg/Nm ³ to 400mg/Nm ³

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