

Laboratory Madhya Pradesh Waste Management Project Laboratory,
Plot No. 104, Industrial Area No. II, Pithampur, Dhar, Madhya Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5022 (in lieu of T-2449) **Page 1 of 8**

Validity 12.02.2017 to 11.02.2019 **Last Amended on 27.02.2017**

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 (Effluent & Sewage)	pH	APHA 22 nd Edition, 2012; 4500 H+ B (Electrometric Method)	2-12
		Temperature	APHA 22 nd Edition, 2012; 2550 B (Laboratory & Field Methods)	1 °C -50°C
		Conductivity	APHA 22 nd Edition, 2012; 2510 B (Laboratory Method)	2 µmho/cm- 10000 µmho/cm
		Total Solids	APHA 22 nd Edition, 2012; 2540 B (Total Solids Dried at 103 - 105 °C)	10 mg/L - 5000 mg/L
		Total Dissolved Solids	APHA 22 nd Edition, 2012; 2540 C (Total Dissolve Solids Dried at 180 °C)	10 mg/L - 5000 mg/L
		Total Suspended Solids	APHA 22 nd Edition, 2012; 2540 D (Total Suspended Solids Dried at 103 - 105 °C)	10 mg/L - 5000 mg/L
		Fixed Solids	APHA 22 nd Edition, 2012; 2540 E(Fixed & Volatile Solids ignited at 550 °C)	10 mg/L - 5000 mg/L
		Volatile Solids	APHA 22 nd Edition, 2012; 2540 E(Fixed & Volatile Solids ignited at 550 °C)	10 mg/L - 5000 mg/L
		Chlorides as Cl ⁻	APHA 22 nd Edition, 2012; 4500 Cl ⁻ B & C (Argentometric Method)	1 mg/L -50000 mg/L
		Residual Chlorine as Cl	APHA 22 nd Edition, 2012; 4500 Cl B (Idometric Method -I)	1 mg/L -100 mg/L
		Dissolved Oxygen	APHA 22 nd Edition, 2012; 4500 O C (Azide Modification)	1 mg/L -12 mg/L

Jitendra B. Vispute
Convenor

N. Venkateswaran
Program Director

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		Oil & Grease	APHA 22 nd Edition, 2012; 5520 B, (Liquid – Liquid, Partition – Gravimetric Method)	10 mg/L - 1000 mg/L
		Chemical Oxygen Demand	APHA 22 nd Edition, 2012; 5220 B (Open Reflux Method)	5 mg/L -100000 mg/L
		Biological Oxygen Demand (5 Days at 20°C) 3 Days at 27°C	APHA 22 nd Edition, 2012; 5210 B, 4500-O. C (5- Day BOD Test & Azide Modification) IS : 3025 : Part – 44	5 mg/L -10000 mg/L
		Cadmium Cd	APHA 22 nd Edition, 2012; 3111 (Direct Air – Acetylene Flame Method)	0.10 mg/L - 100 mg/L
		Total Chromium as Cr	APHA 22 nd Edition, 2012; 3111 B (Direct Air – Acetylene Flame Method)	1.0 mg/L -100 mg/L
		Iron as Fe	APHA 22 nd Edition, 2012; 3111 B (Direct Air – Acetylene Flame Method)	0.5 mg/L -100 mg/L
		Lead as Pb	APHA 22 nd Edition, 2012; 3111 B (Direct Air – Acetylene Flame Method)	1.0 mg/L -100mg/L
		Manganese as Mn	APHA 22 nd Edition, 2012; 3111 B (Direct Air Acetylene Flame Method)	0.1mg/L -100mg/L
		Nickel as Ni	APHA 22 nd Edition, 2012; 3111 B (Direct Air – Acetylene Flame Method)	0.5 mg/L -100 mg/L
		Zinc as Zn	APHA 22 nd Edition, 2012; 3111 B (Direct Air – Acetylene Flame Method)	0.1 mg/L -100mg/L
		Copper as Cu	APHA 22 nd Edition, 2012; 3111 B(Direct Air – Acetylene Flame Method)	0.5 mg/L -100 mg/L

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N. Venkateswaran
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2.	Waste (Hazardous)	pH	USEPA 1998 SW-846; 9045 C (Solid & Waste pH)	2-12
		Bulk Density	APHA 2710 F (Specific Gravity)	0.2 gm/cc - 3 gm/cc
		Calorific Value	IS:1350 Part II – 1970 (Bomb Calorimeter)	500 cal/gm - 10,000 cal/gm
		Moisture content	IS 326 (Part 21) :2001 (KF Titration)	0.1%-100%
		Loss on drying at 105°C	APHA 22 nd Edition, 2012; 2540 (Total Solid Dried at 103-105°C)	5%- 80%
		Loss on ignition at 550°C	APHA 22 nd Edition, 2012; 2540 (Fixed & Volatile Solids Ignited at 550°C)	5%- 100%
		Paint Filter Liquid Test	USEPA 1998, SW-846; 9095 A (Paint Filter Liquid Test)	Pass/ Fail
		Reactive Cyanide as HCN	USEPA 1998, SW-846; 9014 (Titrimetric & Manual Spectrophotometric Determinative Method for Cyanide)	1 mg/Kg - 500 mg/Kg
		Total Cyanide as CN ⁻	USEPA 1998, SW-846; 9010B, 9014 (Distillation Titrimetric & manual Spectrophotometric Determinative method for Cyanide)	10 mg/Kg -500 mg/kg
		Total Sulfide as S ²⁻	USEPA 1998, SW-846; 9215 (Potentiometric determination of sulphide in aqueous samples and distillates with ion-selective electrode)	10 mg/Kg -50 mg/Kg
		Reactive Sulfide as H ₂ S	USEPA 1998, SW-846; 9034 (Titrimetric Procedure For Acid-Soluble And Acid Insoluble Sulfides)	10 mg/Kg - 600 mg/Kg

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		Water soluble halides (as Cl ⁻)	USEPA 1998, SW-846; 9253 (Titrimetric, Silver Nitrate)	1 mg/Kg - 50000 mg/Kg
		Metals by Digestion		
		Cadmium as Cd	USEPA 1998, SW-846; 7130 (Atomic Absorption, Direct Aspiration)	5 mg/Kg -200 mg/Kg
		Copper as Cu	USEPA 1998, SW-846; 7210 (Atomic Absorption, Direct Aspiration)	5 mg/kg -1000 mg/kg
		Total Chromium as Cr	USEPA 1998, SW-846; 7190 (Atomic Absorption, Direct Aspiration)	5 mg/kg -500 mg/Kg
		Iron as Fe	USEPA 1998, SW-846; 7380 (Atomic Absorption, Direct Aspiration)	5 mg/kg -1000mg/Kg
		Lead as Pb	USEPA 1998, SW-846; 7420 (Atomic Absorption, Direct Aspiration)	10 mg/kg - 500mg/Kg
		Manganese as Mn	USEPA 1998, SW-846; 7460 (Atomic Absorption, Direct Aspiration)	5 mg/kg - 500 mg/Kg
		Nickel as Ni	USEPA 1998, SW-846; 7520 (Atomic Absorption, Direct Aspiration)	5 mg/kg -50 mg/Kg
		Zinc as Zn	USEPA 1998, SW-846; 7950 (Atomic Absorption, Direct Aspiration)	5 mg/kg -100 mg/Kg
		Metals by TCLP		
		Cadmium as Cd	USEPA 1998, SW-846; 7130 (Atomic Absorption, Direct Aspiration)	0.1 mg/L - 10 mg/L
		Total Chromium as Cr	USEPA 1998, SW-846; 7190 (Atomic Absorption, Direct Aspiration)	0.1 mg/L - 20 mg/L

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		Hexavalent Chromium as Cr ⁺⁶	APHA 22 nd Edition, 2012; 3500 Cr B (Colorimetric Method)	0.1 mg/L - 10 mg/L
		Iron as Fe	USEPA 1998, SW-846; 7380 (Atomic Absorption, Direct Aspiration)	0.1 mg/L - 50 mg/L
		Lead as Pb	USEPA 1998, SW-846; 7420 (Atomic Absorption, Direct Aspiration)	0.1 mg/L - 50mg/L
		Manganese as Mn	USEPA 1998, SW-846; 7460 (Atomic Absorption, Direct Aspiration)	0.1 mg/L - 20 mg/L
		Nickel as Ni	USEPA 1998, SW-846; 7520 (Atomic Absorption, Direct Aspiration)	0.5 mg/L - 20 mg/L
		Copper as Cu	USEPA 1998, SW-846; 7210 (Atomic Absorption, Direct Aspiration)	0.5 mg/L - 20 mg/L
		Zinc as Zn	USEPA 1998, SW-846; 7950 (Atomic Absorption, Direct Aspiration)	0.5 mg/L - 50 mg/L
II.	WATER			
1.	Surface & Ground Water	pH	APHA 22 nd Edition, 2012; 4500 H ⁺ B (Electrometric Method)	2-12
		Temperature	APHA 22 nd Edition, 2012; 2550 B (Laboratory & Field Methods)	1 °C - 50 °C
		Conductivity	APHA 22 nd Edition, 2012; 2510 B (Laboratory Method)	2 µmhos/cm – 10000 µmhos/cm
		Acidity as CaCO ₃	APHA 22 nd Edition, 2012; 2310 B (Titration Method)	10 mg/L - 1000 mg/L
		Alkalinity as CaCO ₃	APHA 22 nd Edition, 2012; 2320 B (Titration Method)	10 mg/L - 1000 mg/L

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		Total Solids	APHA 22 nd Edition, 2012; 2540 B (Total Solids Dried at 103 - 105 °C)	10 mg/L - 5000 mg/L
		Total Dissolved Solids	APHA 22 nd Edition, 2012; 2540 C (Total Dissolve Solids Dried at 180 °C)	10 mg/L - 5000 mg/L
		Total Suspended Solids	APHA 22 nd Edition, 2012; 2540 D (Total Suspended Solids Dried at 103 - 105 °C)	10 mg/L - 1000 mg/L
		Fixed Solids	APHA 22 nd Edition, 2012; 2540 E (Fixed & Volatile Solids ignited at 550 °C)	10 mg/L - 5000 mg/L
		Volatile Solids	APHA 22 nd Edition, 2012; 2540 E (Fixed & Volatile Solids ignited at 550 °C)	10 mg/L - 1000 mg/L
		Chlorides as Cl ⁻	APHA 22 nd Edition, 2012; 4500 Cl ⁻ B & C (Argentometric Method)	10 mg/L - 1000 mg/L
		Residual Chlorine as Cl ⁻	APHA 22 nd Edition, 2012; 4500 Cl ⁻ B (Idometric Method -I)	1.0 mg/L - 10 mg/L
		Total Hardness as CaCO ₃	APHA 22 nd Edition, 2012; 2340 C (EDTA Titrimetric Method)	5 mg/L - 1000 mg/L
		Dissolved Oxygen	APHA 22 nd Edition, 2012; 4500 O C (Azide Modification)	2 mg/L - 12 mg/L
		Oil & Grease	APHA 22 nd Edition, 2012; 5520 B, (Liquid - Liquid, Partition - Gravimetric Method)	10 mg/L - 50 mg/L
		Chemical Oxygen Demand	APHA 22 nd Edition, 2012; 5220 B (Open Reflux Method)	5 mg/L - 500 mg/L
		Biological Oxygen Demand (5 Days at 20°C) 3 Days at 27°C	APHA 22 nd Edition, 2012; 5210 B, 4500-O. C (5- Day BOD Test & Azide Modification) IS : 3025 : Part - 44	5 mg/L - 100 mg/L

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		Calcium as Ca	APHA 22 nd Edition, 2012; 3500 Ca B (EDTA Titrimetric Method)	10 mg/L -100mg/L
		Sodium as Na	APHA 22 nd Edition, 2012; 3500 Na B (Flame Emission Photometric Method)	5 mg/L -1000 mg/L
		Magnesium as Mg	APHA 22 nd Edition, 2012; 3500-Mg B (Calculation Method)	10 mg/L -1000mg/L
		Potassium as K	APHA 22 nd Edition, 2012; 3500 K B (Flame Emission Photometric Method)	5 mg/L -1000 mg/L
		Cadmium Cd	APHA 22 nd Edition, 2012; 3111 (Direct Air – Acetylene Flame Method)	0.10 mg/L - 100 mg/L
		Total Chromium as Cr	APHA 22 nd Edition, 2012; 3111 B (Direct Air – Acetylene Flame Method)	1.0 mg/L - 10 mg/L
		Iron as Fe	APHA 22 nd Edition, 2012; 3111 B (Direct Air – Acetylene Flame Method)	0.5 mg/L -50 mg/L
		Lead as Pb	APHA 22 nd Edition, 2012; 3111 B (Direct Air – Acetylene Flame Method)	1.0 mg/L -10mg/L
		Manganese as Mn	APHA 22 nd Edition, 2012; 3111 B (Direct Air – Acetylene Flame Method)	0.10 mg/L -10 mg/L
		Nickel as Ni	APHA 22 nd Edition, 2012; 3111 B (Direct Air – Acetylene Flame Method)	0.5 mg/L -10 mg/L
		Zinc as Zn	APHA 22 nd Edition, 2012; 3111 B (Direct Air – Acetylene Flame Method)	0.1 mg/L - 10 mg/L
		Copper as Cu	APHA 22 nd Edition, 2012; 3111 B (Direct Air – Acetylene Flame Method)	0.5 mg/L -10 mg/L

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III.	ATMOSPHERIC POLLUTION			
1.	Ambient Air	Sulphur Dioxide	IS 5182 (Part II)	4 µg/m ³ -750 µg/m ³
		Oxides of Nitrogen	IS 5182 (Part VI)	10 µg/m ³ -750 µg/m ³
		PM ₁₀	IS 5182 (Part 23)	10 µg/m ³ -500 µg/m ³
		Ammonia as Nitrogen	LAB SOP No.60	5 µg/m ³ -500 µg/m ³
		Lead	IS 5182(Part 22)	0.1 µg/m ³ -10 µg/m ³

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N. Venkateswaran
Program Director