Laboratory	Maharashtra Institute of Technology, Center for Analytical Research and Studies (MIT-CARS), MIT Campus Beed Bye-Pass Road, Satara Village Road, Aurangabad, Maharashtra	
Accreditation Standard	ISO/IEC 17025: 2005	
Certificate Number	TC-8242	Page 1 of 10
Validity	01.01.2019 to 31.12.2020	Last Amended on

SI.	Product / Material	Specific Test Performed	Test Method Specification	Range of Testing /
	of Test	-	against which tests are	Limits of Detection
			performed	

CHEMICAL TESTING

Ι.	WATER			
1.	Ground water, Surface water, Industrial Water, Irrigation Water,	Color	IS 3025 (Part 4) (Platinum Cobalt Visible Comparison Method) AHPA 2120B, 23 rd Edition	2 to 100
	Drinking Water	Odor	IS 3025 (Part 5)	Qualitative
		Turbidity	IS 3025 (Part 10) APHA 2130 B, 23 rd Edition	0.1 NTU to 100 NTU
		Total Dissolved Solids (TDS) @ 105 °C	IS 3025 (Part 16)	10 mg/L to 10000 mg/L
		pH	IS 3025 (Part 11) APHA 4500-H ⁺ B, 23 rd Edition	2 to 12
		Electrical Conductivity	IS 3025 (Part 14) APHA 2510 B, 23 rd Edition	2 µS/cm to 20000 µS/cm
		Iron as Fe	IS 3025 (Part 53) APHA 3111 B, 23 rd Edition	0.02 mg/L to 10 mg/L
		Nitrate as NO ₃	APHA 4500-NO ₃ B 23 rd Edition	0.1 mg/L to 200 mg/L
		Nitrite as NO ₂	IS 3025 (Part 34) APHA 4500-NO ₂ B 23 rd Edition	0.01 mg/L to 10 mg/L
		Chloride as Cl	IS 3025 (Part 32) APHA 4500-CI-B 23 rd Edition	2 mg/L to 2000 mg/L
		Fluoride as F	APHA 4500-F ⁻ D 23 rd Edition (SPADNS) IS 3025 (Part 60)	0.1 mg/L to 10 mg/L

Laboratory	Maharashtra Institute of Technology, Center for Analytical Research and Studies (MIT-CARS), MIT Campus Beed Bye-Pass Road, Satara Village Road, Aurangabad, Maharashtra	
Accreditation Standard	ISO/IEC 17025: 2005	
Certificate Number	TC-8242	Page 2 of 10
Validity	01.01.2019 to 31.12.2020	Last Amended on

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Sulphate as SO ₄	IS 3025 (Part 24) APHA 4500-SO ₄ E, 23 rd Edition	4 mg/L to 1000 mg/L
		Total Alkalinity as CaCO ₃ (P and M Alkalinity)	IS 3025 (Part 23) APHA 2320 B, 23 rd Edition	2 mg/L to 1000 mg/L
		Carbonates as CO₃	IS 3025 (Part 23) APHA 2320 B, 23 rd Edition	0.01 mg/L to 200 mg/L
		Bicarbonates as HCO ₃	IS 3025 (Part 23) APHA 2320 B, 23 rd Edition	0.1 mg/L to 200 mg/L
		Calcium as Ca	IS 3025 (Part 40) APHA 3500-Ca B 23 rd Edition	1 mg/L to 1000 mg/L
		Total Hardness as CaCO ₃	IS 3025 (Part 21) APHA 2340 C, 23 rd Edition	5 mg/L to 2000 mg/L
		Magnesium as Mg	IS 3025 (Part 46) APHA 3500-Mg B 23 rd Edition	1 mg/L to 400 mg/L
		Sodium as Na	IS 3025 (Part 45) APHA 3500-Na B 23 rd Edition	1 mg/L to 1000 mg/L
		Potassium as K	IS 3025 (Part 45) APHA 3500-K B 23 rd Edition	1 mg/L to 400 mg/L
		Residual chlorine	IS 3025 (Part 26) Iodometric Method	0.1 mg/L to 5.0 mg/L 1 mg/L to 10 mg/L
		Boron as B	IS 13428 (Annexure H) APHA 4500-B, 23 rd Edition	0.1 mg/L to 5.0 mg/L
		Silica as SiO ₂	IS 3025 (Part 35) APHA 4500 – SiO ₂ C, 23 rd Edition	0.1 mg/L to 60 mg/L

Laboratory	Maharashtra Institute of Technology, Center for Analytical Research and Studies (MIT-CARS), MIT Campus Beed Bye-Pass Road, Satara Village Road, Aurangabad, Maharashtra	
Accreditation Standard	ISO/IEC 17025: 2005	
Certificate Number	TC-8242	Page 3 of 10
Validity	01.01.2019 to 31.12.2020	Last Amended on

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Residual Sodium Carbonate (RSC)	IS 11624 (by Calculation) CO ₃ ^{2–} + HCO ₃ [–] –Ca ²⁺ – Mg ²⁺	0.1 meq/L to 20 meq/L
		Sodium Absorption Ratio (SAR)	IS 11624	1 meq/L to 50 meq/L
11.	RESIDUES IN WATE	R (Trace Metals)		
1.	Trace Metal Elements	Barium as Ba	IS 15302 APHA 3111 B, 23 rd Edition (by ICP–OES Method)	0.1 mg/L to 10 mg/L
		Copper as Cu	APHA 3111 B, 23 rd Edition (by ICP–OES Method)	0.01 mg/L to 10 mg/L
		Manganese as Mn	3111 B-APHA 23 rd Edition (by ICP–OES Method)	0.02 mg/L to 10 mg/L
		Selenium as Se	APHA 3114 C, 23 rd Edition (by ICP–OES Method)	0.01 mg/L to 10 mg/L
		Silver as Ag	APHA 3111 B, 23 rd Edition (by ICP–OES Method)	0.02 mg/L to 10 mg/L
		Zinc as Zn	APHA 3111 B, 23 rd Edition (by ICP–OES Method)	0.02 mg/L to 10 mg/L
		Cadmium as Cd	APHA 3111 C, 23 rd Edition (by ICP–OES Method)	0.003 mg/L to 10 mg/L
		Lead as Pb	IS 3025 (Part 47) APHA 3111 C, 23 rd Edition (by ICP–OES Method)	0.01 mg/L to 10 mg/L
		Mercury as Hg	APHA 3112 B, 23 rd Edition (by ICP–OES Method)	0.001 mg/L to 5 mg/L
		Nickel as Ni	APHA 3111 C, 23 rd Edition (by ICP–OES Method)	0.01 mg/L to 10 mg/L
		Total Arsenic as As	APHA 3114 C, 23 rd Edition (by ICP–OES Method)	0.01 mg/L to 10 mg/L

Laboratory	Maharashtra Institute of Technology, Center for Analytical Research and Studies (MIT-CARS), MIT Campus Beed Bye-Pass Road, Satara Village Road, Aurangabad, Maharashtra	
Accreditation Standard	ISO/IEC 17025: 2005	
Certificate Number	TC-8242	Page 4 of 10
Validity	01.01.2019 to 31.12.2020	Last Amended on

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Total Chromium	APHA 3111 C, 23 rd Edition (by ICP–OES Method)	0.01 mg/L to 10 mg/L
		Aluminum as Al	IS 3025 (Part 55) APHA 3500 AI B 23 rd Edition	0.02 mg/L to 10 mg/L
III.	POLLUTION AND E	NVIRONMENT		
1.	Waste Water	Color	AHPA 2120 D 23rd Edition	Qualitative
	(Effluent/Sewage), ETP/STP Water, Liquid Effluents	рН	IS 3025 (Part 11) APHA 4500 H+ B 23 rd Edition	2 to 12
	and Aeration Tank Water	Total Dissolved Solids (TDS) at 105 °C	IS 3025 (Part 16)	10 mg/L to 10000 mg/L
		Total Suspended Solids (TSS)	IS 3025 (Part 17) APHA 2540 D, 23 rd Edition	10 mg/L to 1000 mg/L
		Mixed Liquor Suspended Solids (MLSS)	IS 3025 (Part 17) APHA 2540 D, 23 rd Edition	100 mg/L to 5000 mg/L
		Total Volatile Suspended Solids (TVSS)	IS 3025 (Part 18) APHA 2540 E, 23 rd Edition	10 mg/L to 1000 mg/L
		Mixed liquor volatile suspended solid (MLVSS)	IS 3025 (Part 18) APHA 2540 E, 23 rd Edition	100 mg/L to 5000 mg/L
		Temperature	APHA 2550 B, 23 rd Edition	20 °C to 50 °C
		Hexavalent Chromium as Cr ⁶⁺	IS 3025 (Part 52) APHA 3500-Cr B 23 rd Edition	0.05 mg/L to 10 mg/L
		Residual Free Chlorine	IS 3025 (Part 26) Iodometric Method	1 mg/L to 10 mg/L
		Chloride as Cl	IS 3025 (Part-32) APHA 4500-CI-B & C 23 rd Edition	10 mg/L to 5000 mg/L

Laboratory	Maharashtra Institute of Technology, Center for Analytical Research and Studies (MIT-CARS), MIT Campus Beed Bye-Pass Road, Satara Village Road, Aurangabad, Maharashtra	
Accreditation Standard	ISO/IEC 17025: 2005	
Certificate Number	TC-8242	Page 5 of 10
Validity	01.01.2019 to 31.12.2020	Last Amended on

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Sulphide as S ²⁻	APHA 4500-S ²⁻ , F- 23 rd Edition	1.0 mg/L to 20 mg/L
		Ammonical Nitrogen as N	IS 3025 (Part 34) APHA 4500-NH3 C 23 rd Edition	0.5 mg/L to 50 mg/L
		Total Kjeldahl Nitrogen as N	IS 3025 (Part 34) APHA 4500-N(org) B 23 rd Edition	1 mg/L to 200 mg/L
		Phosphorous as P	IS 3025 (Part 31) APHA 4500-P D & E 23 rd Edition	0.1 mg/L to 50 mg/L
		Sulphate as SO ₄	IS 3025 (Part 24)	1 mg/L to 5000 mg/L
		Biochemical Oxygen Demand (BOD ₃) for 3 days @ 27 °C	IS 3025 (Part 44)	2 mg/L to 2000 mg/L
		Chemical Oxygen Demand (COD)	IS 3025 (Part 58) APHA 5220 B, 23 rd Edition	4 mg/L to 6000 mg/L
		Oil and Grease	IS 3025 (Part 39) APHA 5520 B, 23 rd Edition	1 mg/L to 1000 mg/L
		Phenolic Compounds	IS 3025 (Part 43) APHA 5530 B, C & D 23 rd Edition	0.001 mg/L to 10 mg/L
		Cyanide as CN	APHA 4500 CNE, 23 rd Edition	0.02 mg/L to 10 mg/L
		Boron as B	IS 13428 (Annexure H) APHA 4500-B, B 23 rd Edition	0.1 mg/L to 5.0 mg/L
		Iron as Fe	APHA 3111 B, 23 rd Edition	0.02 mg/L to 100 mg/L
		Manganese as Mn	APHA 3111 B, 23 rd Edition	0.02 mg/L to 100 mg/L
		Fluoride as F	IS 3025 (Part 60) APHA 4500-F⁻D 23 rd Edition	0.1 mg/L to 5.0 mg/L

Laboratory	Maharashtra Institute of Technology, Center for Analytical Research and Studies (MIT-CARS), MIT Campus Beed Bye-Pass Road, Satara Village Road, Aurangabad, Maharashtra	
Accreditation Standard	ISO/IEC 17025: 2005	
Certificate Number	TC-8242	Page 6 of 10
Validity	01.01.2019 to 31.12.2020	Last Amended on

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Total Arsenic as As	APHA 3114C, 23 rd Edition (by ICP–OES Method)	0.01 mg/L to 10 mg/L
		Mercury as Hg	APHA 3112 B, 23 rd Edition (by ICP–OES Method)	0.001 mg/L to 1.0 mg/L
		Lead as Pb	APHA 3111C, 23 rd Edition (by ICP–OES Method)	0.02 mg/L to 10 mg/L
		Cadmium as Cd	APHA 3111 B, 23 rd Edition (by ICP–OES Method)	0.01 mg/L to 10 mg/L
		Total Chromium as Cr	APHA 3111 B, 23 rd Edition (by ICP–OES Method)	0.02 mg/L to 10 mg/L
		Copper as Cu	APHA 3111 B, 23 rd Edition (by ICP–OES Method)	0.02 mg/L to 10 mg/l
		Zinc as Zn	APHA 3111 B, 23 rd Edition (by ICP–OES Method)	0.02 mg/L to 10 mg/l
		Selenium as Se	APHA 3114 C, 23 rd Edition (by ICP–OES Method)	0.01 mg/L to 10 mg/l
		Nickel as Ni	APHA 3111 B, 23 rd Edition (by ICP–OES Method)	0.02 mg/L to 10 mg/l
		Vanadium as V	APHA 3500VB, 23 rd Edition	0.01 mg/L to 10 mg/l
2.	Soils	рН	FAO Method 2007 Page No. 41 to 42	1 to 14
		Conductivity	FAO Method 2007 Page No. 43 to 44	2 μS/cm to 5000 μS/cm
		Moisture	FAO Method 2008 Page No. 31 to 32	1% to 50 %
		Organic Carbon	FAO Method 2008 Page No. 39 to 40	0.1% to 5 %
		Organic Matter	FAO Method 2007 Page No. 61 & 62	0.2% to 20 %
		Exchangeable / Available Sodium as Na₂O	ICĂRDA, 2013 Page No. 111 & 112	2 meq % to 1000 meq %

Laboratory	Maharashtra Institute of Technology, Center for Analytical Research and Studies (MIT-CARS), MIT Campus Beed Bye-Pass Road, Satara Village Road, Aurangabad, Maharashtra	
Accreditation Standard	ISO/IEC 17025: 2005	
Certificate Number	TC-8242	Page 7 of 10
Validity	01.01.2019 to 31.12.2020	Last Amended on

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Exchangeable / Available	FAO Method 2008	4.46 mg/kg to
		Potassium as K ₂ O	Page No. 53 & 54	446.42 mg/kg
		Exchangeable / Available Calcium as Ca	FAO Method 2008 Page No. 57 to 59	10 meq% to 10000 meq%
ļ		Exchangeable / Available	FAO Method 2008	10 meg % to 2000 meg
		Magnesium as Mg	Page No. 57 to 59	%
		Sodium Absorption Ratio (SAR)	IS 11624	0.05 meq/100g to 5.0 meq/100g
		Available Nitrogen as N	FAO Method 2008 Page No. 44 & 45	4.46 mg/kg to 446.42 mg/kg
		Available Phosphorous as P_2O_5	FAO Method 2007 Page No. 75 to 76	0.89 mg/kg to 446.42 mg/kg
		Water Extractable Chloride as Cl	FAO Method 2007 Page No. 48	10 mg/kg to 1000 mg/kg
		Available Sulphur	FAO Methods 2007 (Page No. 80 to 81)	1 mg/kg to 500 mg/kg
		Hexavalent chromium as Cr6⁺	7196 A, EPA SW–846 and 3060 A1–15	0.1 mg/kg to 250 mg/kg
IV.	ATMOSPHERIC PO	LUTION		
1.	Source / Stack Emissions	Particulate Matter	IS 11255 (Part 1)	5 mg/Nm ³ to 1000 mg/Nm ³
		Sulphur Dioxide (SO ₂)	IS 11255 (Part 2)	5 mg/Nm ³ to 2000 mg/Nm ³
		Oxides of Nitrogen (NO _x)	IS 11255 (Part 7)	5 mg/Nm ³ to 1000 mg/Nm ³
		Flue gas Velocity	IS 11255 (Part 3)	3 m/s to 30 m/s
		Flow Rate	IS 11255 (Part 3)	10 Nm ³ /hour to 1200000 Nm ³ /hour

Laboratory	Maharashtra Institute of Technology, Center for Analytical Research and Studies (MIT-CARS), MIT Campus Beed Bye-Pass Road, Satara Village Road, Aurangabad, Maharashtra	
Accreditation Standard	ISO/IEC 17025: 2005	
Certificate Number	TC-8242	Page 8 of 10
Validity	01.01.2019 to 31.12.2020	Last Amended on

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	Ambient Air	Relative Humidity	IS 5182 (Part 4)	10 % to 98 %
		Temperature	IS 5182 (Part 4)	10 °C to 50 °C
		Suspended Particulate Matter (SPM)	IS 5182 (Part 4)	5 μg/m³ to 1000 μg/m³
		Particulate Matter (PM ₁₀)	IS 5182 (Part 23)	5 μg/m ³ to 1000 μg/m ³
		Particulate Matter (PM 2.5)	MIT–CARS/SOP/AA–02 Issue: 01 / 16–07–2014	2 μg/m ³ to 500 μg/m ³
		Sulphur Dioxide (SO ₂)	IS 5182 (Part 2)	8 μg/m³ to 500 μg/m³
		Oxides of Nitrogen (NO _x)	IS 5182 (Part 6)	4 μg/m³ to 500 μg/m³
		Ozone (O ₃)	IS 5182 (Part 9)	5 µg/m ³ to 30 µg/m ³
		Ammonia (NH ₃)	MIT-CARS/SOP/AA-06	0.1 μg/m ³ to 1000 μg/m ³
			Issue No.: 01/ 05–06–2017	
			Ammonia (NH3)	
			(Indophenol Blue Method)	
		Arsenic (As)	USEPA–IO–3.2–1999 (by ICP–OES)	1 ng/m ³ to 1000 ng/m ³
		Lead (Pb)	USEPA–IO–3.2–1999 (by ICP–OES)	0.1 μg/m³ to 10 μg/m³
		Nickel (Ni)	USEPA-IO-3.2-1999 (by ICP-OES)	10 ng/m ³ to 100 ng/m ³
		Mercury (Hg)	USEPA-IO-3.2-1999 (by ICP-OES)	0.1 ng/m ³ to 100 ng/m ³
3.	Ambient Noise	Noise Level	IS 9989	40 dB(A) to 110 dB(A)
V.	FOOD & AGRICULT	URAL PRODUCTS		
1.	Leafy Vegetables (Spinach and	Copper as Cu	AOAC 20 th Edition 2016 Chapter 3 985–01	30 mg/kg to 500 mg/kg
	Coriander)	Molybdenum as Mo	AOAC 20 th Edition 2016 Chapter 3 960.05	0.1 mg/kg to 200 mg/kg

Laboratory	Maharashtra Institute of Technology, Center for Analytical Research and Studies (MIT-CARS), MIT Campus Beed Bye-Pass Road, Satara Village Road, Aurangabad, Maharashtra	
Accreditation Standard	ISO/IEC 17025: 2005	
Certificate Number	TC-8242	Page 9 of 10

Validity 01.01.2019 to 31.12.2020

"In view of the transition for ISO/IEC 17025:2017, the validity of this accreditation certificate will cease on 30.11.2020"

Last Amended on --

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	Leafy Vegetables (Spinach and	Sodium as Na	AOAC 20 th Edition 2016 Chapter 3 956.1	0.5 mg/100g to 1000 mg/100g
	Coriander) and beet root	Iron as Fe	AOAC 20 th Edition 2016 Chapter 3 928–03	0.2 mg/kg to 1000 mg/kg
3.	Leafy Vegetables (Spinach and	Manganese as Mn	AOAC 20 th Edition 2016 Chapter 3 985–01	20 mg/kg to 1000 mg/kg
	Coriander) and Sweet Potato	Magnesium as Mg	AOAC 20 th Edition 2016 Chapter 3 985–01	1 mg/kg to 200 mg/kg
4.	Leafy Vegetables (Spinach and Coriander) and Legumes (French Beans)	Total Nitrogen	AOAC 20 th Edition 2016 IS 7219	1 % to 20 %
5.	Leafy Vegetables (Spinach and coriander) & onion	Phosphorus	AOAC 20 th Edition 2016 Chapter 3 966–01	0.5 % to 20 %
6.	Leafy Vegetables (Spinach and Coriander) and Cucumber	Potassium as K	AOAC 20 th Edition 2016 Chapter 3 956–01	2.0 mg/100g to 100 mg/100g
7.	Leafy Vegetables (Spinach and coriander) & garlic	Zinc as Zn	AOAC 20 th Edition 2016 Chapter 3 985–01	20 mg/kg to 500 mg/kg
8.	Leafy Vegetables (Spinach and coriander) & onion broccoli, carrot	Boron as B	AOAC 20 th Edition 2016 Chapter 3 985–01	10 mg/kg to 50 mg/kg
9.	Leafy Vegetables (Spinach and Coriander) & Okra	Calcium as Ca	AOAC 20 th Edition 2016 Chapter 3 985–01	0.1 mg/kg to 300 mg/kg

Laboratory	Maharashtra Institute of Technology, Center for Analytical Research and Studies (MIT-CARS), MIT Campus Beed Bye-Pass Road, Satara Village Road, Aurangabad, Maharashtra	
Accreditation Standard	ISO/IEC 17025: 2005	
Certificate Number	TC-8242	Page 10 of 10
Validity	01.01.2019 to 31.12.2020	Last Amended on

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
10.	Oil seeds and	Moisture	IS 3579	0.5 g/100g to 50 g/100g
	products (Peanut,	Ash	AOAC 20 th Edition 2016	0.1 g/100g to 10 g/100g
	Sesame, Mustard,		Chapter 40 950.49	
	Castor, Sunflower	Crude Protein	AOAC 20 th Edition 2016	1 g/100g to 50 g/100g
	and Safflower)		Chapter 4, 2001.11	5 5 5 5
		Fat	IS 3579	1 g/100g to 70 g / 100 g
		Crude fiber	AOAC 20 th Edition 2016	0.1 g/100g to 1 g/100g
			Chapter 4, 978.10	