

**Laboratory** Envirochem Testing Lab & Research Centre, Plot No. 165, Sector-25, Part-II, HUDA, Panipat, Haryana

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

**Certificate Number** TC-6015 (in lieu of T-3477)

Page 1 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

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.	WATER			
1.	Potable water / Drinking water / Packaged Drinking water	pH	Electrometric Method IS 3025 (Part-11): 1983 (RA 2012)	2 to 12
		Specific Conductivity	Electrometric Method IS 3025 (Part-14): 1984 (RA 2006)	2 µmhos/cm to 5000 µmhos/cm
		Total Hardness as CaCO <sub>3</sub>	EDTA Titrimetric Method IS 3025 (Part-21) : 2009 (RA2014)	1 mg/L to 2500 mg/L
		Calcium Hardness as Ca	EDTA Titrimetric Method IS 3025 (Part-40) : 1991 (RA 2014)	1 mg/L to 1000 mg/L
		Magnesium as Mg	IS 3025 (Part 46): 1994 (RA 2014)	0.5 mg/L to 600 mg/L
		Total Alkalinity as CaCO <sub>3</sub>	Titrimetric Method IS 3025 (Part-23) : 1986 (RA 2014)	1 mg/L to 2000 mg/L
		Total Acidity	Titration Method IS 3025 (Part 22): 1986 (RA 2014)	1 mg/L to 1000 mg/L
		Chloride as Cl	Argentometric Method IS 3025 (Part-32) : 1988 (RA 2014)	0.5 mg/L to 2000 mg/L
		Turbidity	Nephelometric Method IS 3025 (Part-10) : 1984 (RA 2012)	1 NTU to 100 NTU

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Page 2 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

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		Total Suspended Solids	Gravimetric Method IS 3025 (Part-17) : 1984 (RA 2006)	1 mg/L to 10 mg/L
		Total Dissolved Solids	Gravimetric Method IS 3025 (Part-16) : 1984 (RA 2012)	5 mg/L to 10000 mg/L
		Total Residual Chlorine as Cl	Idometric Method IS 3025 (Part-26) : 1986 (RA 2014)	0.1 mg/L to 5 mg/L
		Temperature	IS 3025 (Part 9): 1984 (RA 2012)	5 °C to 50 °C
		Sulphate as SO <sub>4</sub>	Turbidity Method IS 3025 (Part-24) : 1986 (RA 2014)	1 mg/L to 1250 mg/L
		Nitrate Nitrogen as NO <sub>3</sub>	Chromotropic Method IS 3025 (Part-34) : 1988 (RA 2014)	0.3 mg/L to 100 mg/L
		Phenol	Amino Antipyrine Method IS 3025 (Part-43) : 1992 (RA 2014)	0.2 mg/L to 50 mg/L
		Manganese as Mn	Persulphate Method APHA Method 22 <sup>nd</sup> Edition: 3500: 3-85	0.01 mg/L to 50 mg/L
		Boron as B	Curcumin Method IS: 3025 (Part-57) : 2005 (RA 2010)	0.02 mg/L to 5 mg/L
		Phosphate as PO <sub>4</sub>	Stannous Chloride Method IS 3025 (Part-31) : 1988 (RA 2014)	0.1 mg/L to 25 mg/L
		Fluoride as F	SPADNS Method APHA Method 22 <sup>nd</sup> Edition. 4500: 4-87	0.1 mg/L to 5 mg/L

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Convenor

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**Page 3 of 25**

**Validity** 26.06.2017 to 25.06.2019

**Last Amended on** 14.07.2017

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		Silica as SiO <sub>2</sub>	Molybdate Method IS 3025 (Part-35) : 1988(RA 2014)	0.1 mg/L to 50 mg/L
		Ammonia as NH <sub>3</sub>	Nesslerization Method IS 3025 (Part-34) : 1988 (RA 2014)	0.1 mg/L to 100 mg/L
		Aluminum	IS 3025 (Part 55): 2003 (RA 2014)	0.01 mg/L to 10 mg/L
		Nitrite as NO <sub>2</sub>	Colorimetric Method IS 3025 (Part 34): 1988 (RA 2014)	0.002 mg/L to 10 mg/L
		Sulphide as H <sub>2</sub> S	Methylene Blue Method IS 3025 (Part 29): 1986 (RA 2014)	0.05 mg/L to 100 mg/L
		Sodium as Na	Flame photometer Method IS 3025 (Part-45) : 1993 (RA 2014)	1 mg/L to 100 mg/L
		Potassium as K	Flame photometer Method IS 3025 (Part-45) : 1993(RA 2014)	1 mg/L to 100 mg/L
		Colour	Platinum Cobalt Method IS 3025 (Part 4): 1983 (RA 2012)	5 Hazen to 50 Hazen
		Iron as Fe	Phenanthroline Method IS 3025 (Part-53) : 2003 (RA 2014)	0.05 mg/L to 100 mg/L
		Hexavalent Chromium as Cr (VI)	Diphenyl Carbazide Method IS 3025 (Part 52): 2003 (RA 2014)	0.01 mg/L to 25 mg/L
		Mercury as Hg	By Mercury Analyzer IS 3025 (Part 48): 1994 (RA 2014)	0.001 mg/L to 1 mg/L

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Page 4 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

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		Chloramines (as Cl <sub>2</sub> )	IS 3025 (Part 26): 1986 (RA 2014)	1 mg/L to 200 mg/L
		Copper as Cu	AAS Method IS 3025 (Part-42) : 1992 (RA 2014)	0.08 mg/L to 10 mg/L
		Lead as Pb	AAS Method IS 3025 (Part-47) : 1994 (RA 2014)	0.05 mg/L to 10 mg/L
		Cadmium as Cd	AAS Method IS 3025 (Part-41) : 1992 (RA 2014)	0.05 mg/L to 5 mg/L
		Nickel as Ni	AAS Method IS 3025 (Part-54) : 2003 (RA 2014)	0.05 mg/L to 10 mg/L
		Total Chromium as Cr	AAS Method IS 3025 (Part-52) : 2003 (RA 2014)	0.05 mg/L to 10 mg/L
		Zinc as Zn	AAS Method IS 3025 (Part-49) : 1994 (RA 2014)	0.05 mg/L to 10 mg/L
2.	Ground water / Surface Water	pH	Electrometric Method IS 3025 (Part-11): 1983 (RA 2012)	2 to 12
		Specific Conductivity	Electrometric Method IS 3025 (Part-14): 1984 (RA 2006)	2 µmhos/cm to 5000 µmhos/cm
		Total Hardness as CaCO <sub>3</sub>	EDTA Titrimetric Method IS 3025 (Part-21) : 2009 (RA2014)	1 mg/L to 5000 mg/L
		Calcium Hardness as Ca	EDTA Titrimetric Method IS 3025 (Part-40) : 1991 (RA 2014)	1 mg/L to 2000 mg/L

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Page 5 of 25

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Last Amended on 14.07.2017

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		Magnesium as Mg	IS 3025 (Part 46): 1994 (RA 2014)	0.5 mg/L to 1200 mg/L
		Total Alkalinity as CaCO <sub>3</sub>	Titrimetric Method IS 3025 (Part-23) : 1986 (RA 2014)	1 mg/L to 5000 mg/L
		Carbonate as CaCO <sub>3</sub>	Titrimetric Method IS 3025 (Part 51): 2001	1 mg/l to 1200 mg/l
		Bicarbonate as CaCO <sub>3</sub>	Titrimetric Method IS 3025 (Part 51): 2001	1 mg/l to 6000 mg/l
		Total Acidity	Titration Method IS 3025 (Part 22): 1986 (RA 2014)	1 mg/L to 100 mg/L
		Chloride as Cl	Argentometric Method IS 3025 (Part-32) : 1988 (RA 2014)	0.5 mg/L to 2500 mg/L
		Turbidity	Nephelometric Method IS 3025 (Part-10) : 1984 (RA 2012)	1 NTU to 100 NTU
		Total Suspended Solids	Gravimetric Method IS 3025 (Part-17) : 1984 (RA 2012)	1 mg/L to 10 mg/L
		Total Dissolved Solids	Gravimetric Method IS 3025 (Part-16) : 1984 (RA 2012)	5 mg/L to 10000 mg/L
		Total Solids	Gravimetric Method IS 3025 (Part 15): 1984 (RA 2014)	10 mg/l to 10000 mg/l
		Volatile Solids	IS 3025 (Part 18): 1984 (RA 2012)	10 mg/l to 200 mg/l
		Total Residual Chlorine as Cl	Idometric Method IS 3025 (Part-26) : 1986 (RA 2014) /	0.1 mg/L to 5 mg/L

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Page 6 of 25

**Validity** 26.06.2017 to 25.06.2019

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		Temperature	IS 3025 (Part 9): 1984 (RA 2012)	5 °C to 50 °C
		Sulphate as SO <sub>4</sub>	Turbidity Method IS 3025 (Part-24) : 1986 (RA 2014)	1 mg/L to 1250 mg/L
		Nitrate Nitrogen as NO <sub>3</sub>	Chromotropic Method IS 3025 (Part-34) : 1988 (RA 2014)	0.3 mg/L to 100 mg/L
		Phenol	Amino Antipyrine Method IS 3025 (Part-43) : 1992 (RA 2014)	0.2 mg/L to 50 mg/L
		Manganese as Mn	Persulphate Method APHA Method 22 <sup>nd</sup> Edition: 3500: 3-85	0.1 mg/L to 50 mg/L
		Boron as B	Curcumin Method IS: 3025 (Part-57) : 2005 (RA 2010)	0.02 mg/L to 5 mg/L
		Phosphate as PO <sub>4</sub>	Stannous Chloride Method IS 3025 (Part-31) : 1988 (RA 2014)	0.1 mg/L to 25 mg/L
		Silica as SiO <sub>2</sub>	Molybdate Method IS 302.5 (Part-35) : 1988 (RA 2014)	0.1 mg/L to 50 mg/L
		Fluoride as F	SPADNS Method APHA Method 22 <sup>nd</sup> Edition. 4500: 4-87	0.1 mg/L to 6 mg/L
		Sulphide as H <sub>2</sub> S	Methylene Blue Method IS 3025 (Part 29): 1986 (RA 2014)	0.05 mg/L to 100 mg/L
		Dissolved Oxygen	Winkler Method IS 3025 (Part 38): 1989 (RA 2014)	2.0 mg/l to 6.0 mg/l

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Page 7 of 25

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		Carbon dioxide as CO <sub>2</sub>	Titrimetric Method APHA Method 22 <sup>nd</sup> Edition: 4500: 4-31	1 mg/l to 20 mg/l
		Sodium as Na	Flame photometer Method IS 3025 (Part-45) : 1993 (RA 2014) /	1 mg/L to 100 mg/L
		Potassium as K	Flame photometer Method IS 3025 (Part-45) : 1993 (RA 2014) /	1 mg/L to 100 mg/L
		Colour	Platinum Cobalt Method IS 3025 (Part 4): 1983 (RA 2012) /	5 Hazen to 50 Hazen
		Copper as Cu	AAS Method IS 3025 (Part-42): 1992 (RA 2014) /	0.08 mg/L to 10 mg/L
		Lead as Pb	AAS Method IS 3025 (Part-47) : 1994 (RA 2014) /	0.05 mg/L to 10 mg/L
		Cadmium as Cd	AAS Method IS 3025 (Part-41) : 1992 (RA 2014)	0.05 mg/L to 5 mg/L
		Nickel as Ni	AAS Method IS 3025 (Part-54) : 2003 (RA 2014)	0.05 mg/L to 10 mg/L
		Total Chromium as Cr	AAS Method IS 3025 (Part-52) : 2003 (RA 2014)	0.05 mg/L to 10 mg/L
		Zinc as Zn	AAS Method IS 3025 (Part-49) : 1994 (RA 2014)	0.05 mg/L to 10 mg/L

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Page 8 of 25

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		Iron as Fe	Phenanthroline Method IS 3025 (Part-53) : 2003 (RA 2014)	0.05 mg/L to 100 mg/L
		Hexavalent Chromium as Cr VI	Diphenyl Carbazide Method IS 3025 (Part 52): 2003 (RA 2014)	0.01 mg/L to 25 mg/L
		Mercury as Hg	By Mercury Analyzer IS 3025 (Part 48): 1994 (RA 2014)	0.001 mg/L to 1 mg/L
3.	Water for Swimming pool	Colour	IS 3025 (Part 4): 1983 (RA 2012)	5 Hazen to 50 Hazen
		pH	Electrometric Method IS 3025 (Part-11) : 1983 (RA 2012)	2 to 12
		Turbidity	Nephelometric Method IS 3025 (Part-10) : 1984 (RA 2012)	1 NTU to 100 NTU
		Total Alkalinity as CaCO <sub>3</sub>	Titrimetric Method IS 3025 (Part-23) : 1986 (RA 2014)	1 mg/L to 2000 mg/L
		Total Residual Chlorine as Cl	Idometric Method IS 3025 (Part-26) : 1986 (RA 2014)	0.1 mg/L to 5 mg/L
		Oxygen Absorbed in 4 Hours at 27°C	IS 3025 (Part 63): 2007 (RA 2013)	1.0 mg/L to 500 mg/L
		Total Dissolved Solids	Gravimetric Method IS 3025 (Part-16) : 1984 (RA 2012)	5 mg/L to 10000 mg/L
		Chloride as Cl	Argentometric Method IS 3025 (Part-32) : 1988 (RA 2014)	0.5 mg/L to 2000 mg/L

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Page 9 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

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		Iron as Fe	Phenanthroline Method IS 3025 (Part-53) : 2003 (RA 2014)	0.05 mg/L to 100 mg/L
		Lead as Pb	AAS Method IS 3025 (Part-47) : 1994 (RA 2014)	0.05 mg/L to 10 mg/L
		Aluminum	IS 3025 (Part 55): 2003 (RA 2014)	0.01 mg/L to 10 mg/L
4.	Water for processed food Industry	Colour	IS 3025 (Part 4): 1983 (RA 2012)	5 Hazen to 50 Hazen
		pH	Electrometric Method IS 3025 (Part-11) : 1983 (RA 2012)	2 to 14
		Turbidity	Nephelometric Method IS 3025 (Part-10) : 1984 (RA 2012)	1 NTU to 100 NTU
		Total Solids	IS 3025 (Part 15): 1984 (RA 2014)	1.0 mg/L to 2000 mg/L
		Total Hardness as CaCO <sub>3</sub>	Titrimetric Method IS 3025 (Part-21) : 2014	1 mg/L to 2500 mg/L
		Magnesium as Mg	IS 3025 (Part 46): 1994 (RA 2014)	0.5 mg/L to 600 mg/L
		Sulphate as SO <sub>4</sub>	Turbidity Method IS 3025 (Part-24) : 1986 (RA 2014)	0.3 mg/L to 1250 mg/L
		Fluoride as F	SPADNS Method APHA Method 22 <sup>nd</sup> Edition. 4500 – F	0.1 mg/L to 6 mg/L
		Total Alkalinity as CaCO <sub>3</sub>	Titrimetric Method IS 3025 (Part-23) : 1986 (RA 2014)	1 mg/L to 2000 mg/L

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Page 10 of 25

**Validity** 26.06.2017 to 25.06.2019

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		Nitrate Nitrogen as NO <sub>3</sub>	Chromotropic Method IS 3025 (Part-34) : 1988 (RA 2014)	0.3 mg/L to 100 mg/L
		Chloride as Cl	Argentometric Method IS 3025 (Part-32) : 1988 (RA 2014)	0.5 mg/L to 2000 mg/L
		Sulphate as SO <sub>4</sub>	Turbidity Method IS 3025 (Part-24) : 1986 (RA 2014)	1 mg/L to 1250 mg/L
		Carbonate Hardness	IS 3025 (Part 51): 2001 (RA 2012)	1.0 mg/L to 2000 mg/L
		Hexavalent Chromium as Cr VI	Diphenyl Carbazide Method IS 3025 (Part 52): 2003 (RA 2014) /	0.01 mg/L to 25 mg/L
		Manganese as Mn	Persulphate Method APHA Method 22 <sup>nd</sup> Edition: 3500: 3-85	0.1 mg/L to 50 mg/L
		Nitrate Nitrogen as NO <sub>3</sub>	Chromotropic Method IS 3025 (Part-34) : 1988 (RA 2014)	0.3 mg/L to 100 mg/L
		Phenol	Amino Antipyrine Method IS 3025 (Part-43) : 1992 (RA 2014)	0.2 mg/L to 50 mg/L
		Cyanide as CN	IS 3025 (Part 27): 1986 (RA 2014)/ APHA (22nd Edition) 4500: 4 – 43	0.1 mg/L to 10 mg/L
		Iron as Fe	IS 3025 (Part 53): 2003 (RA 2014)/ APHA (22nd Edition) 3500 Fe B	0.1 mg/L to 50 mg/L

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Page 11 of 25

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		Copper as Cu	AAS Method IS 3025 (Part-42) : 1992 (RA 2014)	0.08 mg/L to 10 mg/L
5.	Construction water	pH	Electrometric Method IS 3025 (Part-11) : 1983 (RA 2012)	2 to 12
		Chloride as Cl	Argentometric Method IS 3025 (Part-32) : 1988 (RA 2014)	0.5 mg/L to 2000 mg/L
		Total Suspended Solids	Gravimetric Method IS 3025 (Part-17) : 1984 (RA 2012)	2 mg/L to 100 mg/L
		Sulphate as SO <sub>4</sub>	Turbidity Method IS 3025 (Part-24) : 1986 (RA 2014)	0.3 mg/L to 1250 mg/L
		0.02N NaOH Required for Neutralized 100 mL Sample	IS 3025 (Part 22): 1986 (RA 2014)/ APHA (22 <sup>nd</sup> Edition) 2310 B	0.1 mL to 200 mL
		0.02N H <sub>2</sub> SO <sub>4</sub> Required for Neutralized 100 mL Sample	Titrimetric Method IS 3025 (Part-23) : 1986 (RA 2014)	0.1 mL to 250 mL
		Organic Residue	Gravimetric Method IS 3025 (Part-18) : 1984 (RA 2012)	5 mg/L to 2000 mg/L
		Inorganic Residue	Gravimetric Method IS 3025 (Part-18) : 1984 (RA 2012)	5 mg/L to 5000 mg/L
II.	<b>POLLUTION &amp; ENVIRONMENT</b>			
1.	Effluent water / Sewage Water / Domestic waste	Colour	Platinum Cobalt Method IS 3025 (Part 4): 1983 (RA 2012)	5 Hazen to 500 Hazen

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**Certificate Number** TC-6015 (in lieu of T-3477)

Page 12 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

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		Specific Conductivity	Electrometric Method IS 3025 (Part-14) : 1984 (RA 2006)	2 µmhos/cm to 5000 µmhos/cm
		Temperature	IS 3025 (Part 9): 1984 (RA 2012)	5 °C to 50 °C
		pH	Electrometric Method IS 3025 (Part-11) : 1983 (RA 2006)	2 to 12
		Turbidity	IS 3025 (Part 10): 1984 (RA 2006)	1 NTU to 1000 NTU
		Total Dissolved Solids	Gravimetric Method IS 3025 (Part-16) : 1984 (RA 2006)	5 mg/L to 10000 mg/L
		Total Suspended Solids	Gravimetric Method IS 3025 (Part-17) : 1984 (RA 2006)	2 mg/L to 1000 mg/L
		Settleable Solids	IS 3025 (Part 19): 1984 (RA 2012)	50 mg/L to 500 mg/L
		Volatile Solids	IS 3025 (Part 18): 1984 (RA 2012)	10 mg/L to 1000 mg/L
		MLSS	ETL/SOP/W11	2 mg/L to 5000 mg/L
		MLVSS	ETL/SOP/W52	2 mg/L to 500 mg/L
		Chemical Oxygen Demand (COD)	Reflux Method IS 3025 (Part-58) : 2006 (RA 2012)	5 mg/L to 30000 mg/L
		Bio-Chemical Oxygen Demand (BOD)	Bio assay based on IS 3025 (Part-44) : 1993 (RA 2014)	2 mg/L to 25000 mg/L
		Oil & Grease	Partition Gravimetric Method IS 3025 (Part-39) : 1991 (RA 2014)	3 mg/L to 500 mg/L

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Page 13 of 25

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Last Amended on 14.07.2017

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		Total Residual Chlorine as Cl	Idometric Method IS 3025 (Part-26) : 1986 (RA 2014)	0.1 mg/L to 5 mg/L
		Total Kjeldhal Nitrogen (TKN)	Kjeldhal Method IS 3025 (Part-34) : 1988 (RA 2014)	0.1 mg/L to 500 mg/L
		Dissolved Phosphate (as P)	Stannous Chloride Method IS 3025 (Part-31) : 1988 (RA 2014)	0.1 mg/L to 25 mg/L
		Ammonia as NH <sub>3</sub>	Nesslerization Method IS 3025 (Part-34) : 1988 (RA 2014)	0.1 mg/L to 100 mg/L
		Sulphide as H <sub>2</sub> S	Methylene Blue Method IS 3025 (Part 29): 1986 (RA 2014)	0.05 mg/L to 100 mg/L
		Fluoride (as F)	APHA (22nd Edition) 4500 F- D	0.02 mg/L to 50 mg/L
		Cyanide as CN	IS 3025 (Part 27): 1986 (RA 2014)/ APHA (22nd Edition) 4500: 4 - 43	0.1 mg/L to 25 mg/L
		Silica as SiO <sub>2</sub>	Molybdate Method IS 3025 (Part-35) : 1988 (Reaffirmed 2014)	0.1 mg/L to 100 mg/L
		Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	IS 3025 (Part 43): 1992 (RA 2014)/ APHA (22nd Edition) 5530 C	0.01 mg/L to 50 mg/L
		Manganese as Mn	Persulphate Method APHA Method 22 <sup>nd</sup> Edition: 3500-B	0.1 mg/L to 50 mg/L

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Page 14 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

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		Nitrate Nitrogen as NO <sub>3</sub>	Chromotropic Method IS 3025 (Part-34) : 1988 (Reaffirmed 2014)	0.3 mg/L to 100 mg/L
		Oxygen Absorbed in 4 Hours at 27°C	IS 3025 (Part 63): 2007 (RA 2013)	1.0 mg/L to 10000 mg/L
		Dissolved oxygen	IS 3025 (Part 38): 1989 (RA 2013)	0.5 mg/L to 12 mg/L
		Sulphite (as SO <sub>3</sub> )	IS 3025 (Part 28): 1989 (RA 2013)	0.1 mg/L to 50 mg/L
		Total Hardness as CaCO <sub>3</sub>	Titrimetric Method IS 3025 (Part-21) : 2014	1 mg/L to 2500 mg/L
		Total Acidity	Titration Method IS 3025 (Part 22): 1986 (RA 2014)	1 mg/L to 100 mg/L
		Total Alkalinity as CaCO <sub>3</sub>	Titrimetric Method IS 3025 (Part-23) : 1986 (Reaffirmed 2014)	1 mg/L to 2000 mg/L
		Carbon Dioxide as CO <sub>2</sub>	Titrimetric Method APHA (22nd Edition) 3500 CO <sub>2</sub>	1 mg/L to 100 mg/L
		Chloride as Cl	Argentometric Method IS 3025 (Part-32) : 1988 (Reaffirmed 2014)	0.5 mg/L to 2000 mg/L
		Sodium as Na	Flame photometer Method IS 3025 (Part-45) : 1993 (RA 2014) /	1 mg/L to 2000 mg/L
		Potassium as K	Flame photometer Method IS 3025 (Part-45) : 1993(RA 2014) /	1 mg/L to 2000 mg/L
		Iron as Fe	IS 3025 (Part 53): 2003 (RA 2014)	0.1 mg/L to 100 mg/L

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**Laboratory** Envirochem Testing Lab & Research Centre, Plot No. 165, Sector-25,  
Part-II, HUDA, Panipat, Haryana

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

**Certificate Number** TC-6015 (in lieu of T-3477)

Page 15 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Hexavalent Chromium	IS 3025 (Part 52): 2003 (RA 2014)	0.01 mg/L to 50 mg/L
		Arsenic	Silver Diethyldithiocarbamate Method IS 3025 (Part 37): 1988 (RA 2014)	0.01 mg/L to 10 mg/L
		Cadmium as Cd	AAS Method IS 3025 (Part-41) : 1992 (Reaffirmed 2014)	0.1 mg/L to 50 mg/L
		Nickel as Ni	AAS Method IS 3025 (Part-54) : 2003(Reaffirmed 2014)	0.20 mg/L to 50 mg/L
		Copper as Cu	AAS Method IS 3025 (Part-42) : 1992(Reaffirmed 2014)	0.10 mg/L to 50 mg/L
		Lead as Pb	AAS Method IS 3025 (Part-47) : 1994 (Reaffirmed 2014)	0.5 mg/L to 50 mg/L
		Chromium as Cr (Total)	AAS Method IS 3025 (Part-52) : 2003(Reaffirmed 2014)	0.25 mg/L to 50 mg/L
		Zinc as Zn	AAS Method IS 3025 (Part-49) : 1994 (Reaffirmed 2014)	0.05 mg/L to 50 mg/L
		Mercury as Hg	By Mercury Analyzer IS 3025 (Part 48): 1994 (RA 2014)	0.001 mg/L to 5 mg/L
		Bio-Assay Test (Survival Of Fish After First 96 Hrs. In 100 Effluent Water)- Qualitative	IS 6582: 1971 (RA 2003)	0 to 100 %

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**Laboratory** Envirochem Testing Lab & Research Centre, Plot No. 165, Sector-25, Part-II, HUDA, Panipat, Haryana

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

**Certificate Number** TC-6015 (in lieu of T-3477)

Page 16 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	Soil	pH	IS 2720 (Part 26): 1987 (RA 2011)	2 to 12
		Electrical conductivity	IS 14767 : 2000	0.1 $\mu$ S/cm to 5000 $\mu$ S/cm
		Bulk Density	ETL / SOP / SL01 issue no. 01 Issue date 09.01.2017 based on Methods of Soil Analysis. Part 4. Physical Methods	0.5 mg/g/cc to 3.5 mg/g/cc
		Acidity	ETL / SOP / SL02 issue no. 01 Issue date 09.01.2017 based on Methods of Soil Analysis. Part 3. Chemical method	0.1 mg/Kg to 1000 mg/Kg
		Alkalinity	ETL / SOP / SL03 issue no. 01 Issue date 09.01.2017 based on Methods of Soil Analysis. Part 3. Chemical method	0.1 mg/Kg to 20 mg/Kg
		Organic Matter	IS 2720 (Part 22): 1972 (RA 2015)	0.1 % to 85 %
		Cation Exchange Capacity	IS 2720 (Part 24): 1976 (RA 2015) / EPA Method 9081	10 to 5000 meq/100 g
		Water Holding Capacity	ETL / SOP / SL03 issue no. 01 Issue date 09.01.2017 Soil Testing Procedure Manual 2008.	5 % to 50 %
		Moisture Content	IS 2720 (Part 2): 1973 (RA 2015)	1.0 % to 50 %
		Solid Content	IS 2720 (Part 21): 1977 (RA 2015)	1 % to 90 %



**Laboratory** Envirochem Testing Lab & Research Centre, Plot No. 165, Sector-25, Part-II, HUDA, Panipat, Haryana

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

**Certificate Number** TC-6015 (in lieu of T-3477)

Page 17 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Sodium as Na	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B	1 mg/Kg to 10000 mg/Kg
		Potassium as K	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B	1 mg/Kg to 10000 mg/Kg
		Total Phosphorous as P	USEPA 6010 B Dec. 1996 Rev. 2 / IS 10158: 1982	1 mg/Kg to 10000 mg/Kg
		Water Soluble Chloride	IS 6825: 1973 (RA 1998)	5 mg/Kg to 10000 mg/Kg
		Water Soluble Sulphate	IS 2720 (Part 27):1977 (RA 2015)	5 mg/Kg to 1000 mg/Kg
		Boron as B	EPA Method 200.8	10 mg/Kg to 1000 mg/Kg
		Silica	IS 2720 (Part 25): 1982	5 % to 90 %
		Exchangeable Calcium	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B	5 mg/Kg to 10000 mg/Kg
		Exchangeable Magnesium	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B	5 mg/Kg to 10000 mg/Kg
		Total Kjeldhal Nitrogen (TKN)	IS 14684: 1999 (RA 2005)	1 mg/Kg to 1500 mg/Kg
		Sodium Absorption Ratio (SAR)	ETL / SOP / SL20 By Calculation	By Calculation
		Iron as Fe	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 10000 mg/Kg
		Lead as pb	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg

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**Laboratory** Envirochem Testing Lab & Research Centre, Plot No. 165, Sector-25, Part-II, HUDA, Panipat, Haryana

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

**Certificate Number** TC-6015 (in lieu of T-3477)

Page 18 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Nickel as Ni	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg
		Cadmium as Cd	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg
		Zinc as Zn	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg
		Copper as Cu	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg
		Chromium as Cr	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg
		Arsenic	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg
		Acidity	ETL/ SOP/SW/28 Issue. 01 Issue Dated. 09.01.2017 based on Methods of Soil Analysis. Part 3. Chemical method	50 mg/Kg to 10000 mg/Kg

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**Laboratory** Envirochem Testing Lab & Research Centre, Plot No. 165, Sector-25, Part-II, HUDA, Panipat, Haryana

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

**Certificate Number** TC-6015 (in lieu of T-3477)

**Page 19 of 25**

**Validity** 26.06.2017 to 25.06.2019

**Last Amended on 14.07.2017**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Bulk Density	ETL/ SOP/SW/29 issue no. 01 Issue date 09.01.2017 based on Doc No.: FAD 7(2189)C	0.5 mg/g/cc to 3.5 mg/g/cc
		Alkalinity	ETL/ SOP/SW/27 Issue. 01 Issue Dated. 09.01.2017 based on Methods of Soil Analysis. Part 3. Chemical method	0.1 % to 20 %
		Boron as B	EPA Method 2008	10 mg/Kg to 1000 mg/Kg
		Silica	ETL/ SOP/SW/26 Issue. 01 Issue Dated. 09.01.2017 based on IS 2720 (Part 25): 1982	5 % to 90 %
		Total Kjeldhal Nitrogen (TKN)	ETL/ SOP/SW/25 Issue. 01 Issue Dated. 09.01.2017 based on IS 14684: 1999 (RA 2005)	1 mg/Kg to 1500 mg/Kg
3.	<b>Solid Waste</b>	pH	ETL/ SOP/No. SW01, Issue. 01 Issue Dated. 25.07.2017 based on EPA 9045D : 2004	2 to 12
		Electrical conductivity	ETL/ SOP/SW/02, Issue. 01 Issue Dated. 09.01.2017 based on CPCB Manual for Hazardous waste testing	0.1 µS/cm to 5000 µS/cm

**Laboratory** Envirochem Testing Lab & Research Centre, Plot No. 165, Sector-25,  
Part-II, HUDA, Panipat, Haryana

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

**Certificate Number** TC-6015 (in lieu of T-3477)

Page 20 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Organic Matter	ETL/ SOP/SW/04, Issue. 01 Issue Dated. 09.01.2017 based on CPCB Manual for Hazardous waste testing	0.1 % to 85 %
		Moisture Content	ETL/ SOP/No. SW09, Issue. 01 Issue Dated. 25.07.2017 based on EPA 9001:10 (2007)	1.0 % to 50 %
		Solid Content	ETL/ SOP/SW/06 Issue. 01 Issue Dated. 09.01.2017 based on CPCB Manual for Hazardous waste testing	1 % to 90 %
		Sodium as Na	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B	1 mg/Kg to 10000 mg/Kg
		Potassium as K	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B	1 mg/Kg to 10000 mg/Kg
		Total Phosphorous as P	USEPA 6010 B Dec. 1996 Rev. 2 / IS 10158: 1982	1 mg/Kg to 10000 mg/Kg
		Chloride	ETL/ SOP/SW/12 Issue. 01 Issue Dated. 09.01.2017 based EPA 670/2-74-007	5 mg/Kg to 10000 mg/Kg
		Sulphate	ETL/ SOP/SW/13 Issue. 01 Issue Dated. 09.01.2017 based on IS 2720 (P-27) 1977	5 mg/Kg to 1000 mg/Kg

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**Laboratory** Envirochem Testing Lab & Research Centre, Plot No. 165, Sector-25,  
Part-II, HUDA, Panipat, Haryana

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

**Certificate Number** TC-6015 (in lieu of T-3477)

Page 21 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Calcium	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B	5 mg/Kg to 10000 mg/Kg
		Magnesium	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B	5 mg/Kg to 10000 mg/Kg
		Iron as Fe	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	0.1 % to 5 %
		Lead as pb	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 to 5000 mg/Kg
		Nickel as Ni	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg
		Cadmium as Cd	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg
		Zinc as Zn	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg
		Copper as Cu	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg
		Chromium as Cr	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg

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**Laboratory** Envirochem Testing Lab & Research Centre, Plot No. 165, Sector-25, Part-II, HUDA, Panipat, Haryana

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

**Certificate Number** TC-6015 (in lieu of T-3477)

Page 22 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Arsenic	USEPA 6010 B Dec. 1996 Rev. 2 / EPA Method 3050 B / EPA Method 200.8	5 mg/Kg to 5000 mg/Kg
		TCLP: (metals in leachate)	USEPA 1311 – Jul 1992	
		Arsenic (TCLP)	APHA 22nd EDN. 2012-3120 B	0.05 mg/L to 10.0 mg/L
		Cadmium (TCLP)	APHA 22nd EDN. 2012-3120 B	0.05 mg/L to 10.0 mg/L
		Chromium(TCLP)	APHA 22nd EDN. 2012-3120 B	0.05 mg/L to 10.0 mg/L
		Copper(TCLP)	APHA 22nd EDN. 2012-3120 B	0.05 mg/L to 10.0 mg/L
		Iron(TCLP)	APHA 22nd EDN. 2012-3120 B	0.05 mg/L to 10.0 mg/L
		Lead (TCLP)	APHA 22nd EDN. 2012-3120 B	0.05 mg/L to 10.0 mg/L
		Zinc (TCLP)	APHA 22nd EDN. 2012-3120 B	0.05 mg/L to 10.0 mg/L
		Nickel (TCLP)	APHA 22nd EDN. 2012-3120 B	0.05 mg/L to 10.0 mg/L
4.	Lubricating oil, engine oil, fuel oils Used oil / Waste oil	Moisture	ASTM D 95 - 13 / IS:1448 part 40 RA 2006	0.05 % to 90.0 %
		copper	ASTM D 4377 - Oct 2000	1 mg/Kg to 100 mg/Kg
		Lead	USEPA 3031 Rev. 0 Dec. 1996	1 mg/Kg to 100 mg/Kg
		Cadmium	USEPA 3031 Rev. 0 Dec. 1996	1 mg/Kg to 100 mg/Kg
		Nickel	USEPA 3031 Rev. 0 Dec. 1996	1 mg/Kg to 100 mg/Kg
		Chromium	USEPA 3031 Rev. 0 Dec. 1996	1 mg/Kg to 100 mg/Kg

**Laboratory** Envirochem Testing Lab & Research Centre, Plot No. 165, Sector-25, Part-II, HUDA, Panipat, Haryana

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

**Certificate Number** TC-6015 (in lieu of T-3477)

**Page 23 of 25**

**Validity** 26.06.2017 to 25.06.2019

**Last Amended on** 14.07.2017

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Arsenic	USEPA 3031 Rev. 0 Dec. 1996	1 mg/Kg to 100 mg/Kg
<b>III.</b>	<b>ATMOSPHERIC POLLUTION</b>			
<b>1.</b>	<b>Ambient Air</b>	Particulate Matter (PM <sub>10</sub> ) (RSPM)	IS 5182 (Part-23) : 2006 (Reaffirmed 2012)	1.0 µg/m <sup>3</sup> to 500 µg/m <sup>3</sup>
		Particulate Matter (PM <sub>2.5</sub> )	In-house Method ETL/SOP No. A01 ( Issue No. 1 Date 01.09.2014) based on USEPA 40 CFR 50 Appendix L	5 µg/m <sup>3</sup> to 250 µg/m <sup>3</sup>
		Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part -6) : 2006 (Reaffirmed 2012)	2.0 µg/m <sup>3</sup> to 500 µg/m <sup>3</sup>
		Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part-2) : 2001 (Reaffirmed 2012)	5.0 µg/m <sup>3</sup> to 500 µg/m <sup>3</sup>
		Ammonia (NH <sub>3</sub> )	In-house Method ETL/SOP No. A02 ( Issue No. 1 Date 01.09.2014)	5.0 µg/m <sup>3</sup> to 500 µg/m <sup>3</sup>
		Ozone (O <sub>3</sub> )	IS 5182 (Part -IX) : 1974 (Reaffirmed 2014)	5.0µg/m <sup>3</sup> to 150 µg/m <sup>3</sup>
		Carbon Monoxide (CO)	IS 5182 (Part -10) : 1999 (Reaffirmed 2014) ( Iodine Pentaoxide Method)	1.0 mg/m <sup>3</sup> to 10 mg/m <sup>3</sup>
		Nickel (Ni)	In-house Method (By AAS) ETL/SOP No. A08 ( Issue No. 1 Date 01.09.2014)	1.0 ng/m <sup>3</sup> to 100 ng/m <sup>3</sup>
		Lead (Pb)	AAS Method IS 5182 (Part -22) : 2004 (Reaffirmed 2014)	0.01 µg/m <sup>3</sup> to 10 µg/m <sup>3</sup>
		Benzene (C <sub>6</sub> H <sub>6</sub> )	IS 5182 (Part 11) (RA 2012)	1.0 µg/m <sup>3</sup> to 10 µg/m <sup>3</sup>

**Laboratory** Envirochem Testing Lab & Research Centre, Plot No. 165, Sector-25, Part-II, HUDA, Panipat, Haryana

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

**Certificate Number** TC-6015 (in lieu of T-3477)

Page 24 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Benzo(a) Pyrene (BaP)	IS 5182 (Part 12): 2004 (RA 2014) By GC Method (FID)	0.2 ng/m <sup>3</sup> - 5.0 ng/m <sup>3</sup>
2.	Indoor Air Quality (work zone)	Total Dust particles	ETL/SOP/IAQ-01 ( Issue No. 1 Date 25.05.2017) Based on NIOSH-0500	5.0 µg/m <sup>3</sup> to 5000 µg/m <sup>3</sup>
3.	Stack Emission	Particulate Matter (PM)	Gravimetrically Method IS 11255 (Part-I) : 1985 (Reaffirmed 2014)	1 mg/Nm <sup>3</sup> to 2000 mg/Nm <sup>3</sup>
		Sulphur Dioxide (SO <sub>2</sub> )	IPA Thorin Method IS 11255 (Part-2) : 1985 (Reaffirmed 2014)	5 mg/Nm <sup>3</sup> to 900 mg/Nm <sup>3</sup>
		Nitrogen Dioxide (NO <sub>2</sub> )	Phenol Disulphonic Acid Method IS 11255 (Part-7) : 2005 (Reaffirmed 2012)	5 mg/Nm <sup>3</sup> to 500 mg/Nm <sup>3</sup>
		Carbon Monoxide (CO)	In-house Method (By Flue gas analyser) ETL/SOP No. SE06 ( Issue No. 1 Date 01.09.2014)	1 ppm to 1000 ppm
		Carbon Dioxide (CO <sub>2</sub> )	IS 13270: 1992 (RA 2014)	0.2 to 20 % v/v
		Oxygen (O <sub>2</sub> )	IS 13270: 1992 (RA 2014)	0.2 to 20.9 %v/v
		Flow rate	IS 11255 (Part-3) 2008, (RA 2013)	1 LPM to 30 LPM
4.	Noise	Ambient Noise (Leq dB(A), L-max, L-min, L-10, L-90)	IS 1989 :1981 ISO 1996-2: 2007	30 to 130 dB(A)
5.	Illumination (Lux Level)	Illumination Levels	IS 3646 (Part 1): 2013	0 to 2000 lx



**Laboratory** Envirochem Testing Lab & Research Centre, Plot No. 165, Sector-25, Part-II, HUDA, Panipat, Haryana

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

**Certificate Number** TC-6015 (in lieu of T-3477)

Page 25 of 25

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 14.07.2017

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
6.	<b>Meteorological Testing (Weather Monitoring)</b>	Ambient Air Temperature	ETL/ SOP/No. M 01, Issue. 01 Issue Dated. 09.01.2017 based on CPCB guidelines NAQSQS 2003	5 °C to 50 °C
		Wind Speed	ETL/ SOP/No. M 01, Issue. 01 Issue Dated. 09.01.2017 based on CPCB guidelines NAQSQS 2003	1.0 m/s to 80.0 m/s
		Wind Direction	ETL/ SOP/No. M 01, Issue. 01 Issue Dated. 09.01.2017 based on CPCB guidelines NAQSQS 2003	0 to 360 °
		Relative Humidity	ETL/ SOP/No. M 01, Issue. 01 Issue Dated. 09.01.2017 based on CPCB guidelines NAQSQS 2003	1 % to 100 %

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