Laboratory Saturn Quality Certifications Pvt. Ltd. (Research & Analytical

Division), V-17, Modern Industrial Estate (M.I.E.), Red Cross Road,

Bahadurgarh, Haryana

Accreditation Standard ISO/IEC 17025: 2005

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| Ī | SI. | Product / Material | Specific Test | Test Method Specification | Range of Testing /  |
|---|-----|--------------------|---------------|---------------------------|---------------------|
| l |     | of Test            | Performed     | against which tests are   | Limits of Detection |
| ١ |     |                    |               | performed                 |                     |

## **CHEMICAL TESTING**

| I. | WATER  |                         |  |                        |
|----|--|-------------------------|--|------------------------|
| 1. | Potable<br>Water/Drinking<br>water/Raw<br>Water/Ground | рН                      | IS:3025 (Part-11), 1983,<br>Reaffirmed 2002/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500-H+ B | 1 to 14                |
|    | Water/Borewell<br>water                                | Total Dissolved Solid   | IS:3025 (Part-16), 1984,<br>Reaffirmed 2006/ APHA<br>(22 <sup>nd</sup> edition-2012), 2540 C       | 1.0 mg/l to 10000 mg/l |
|    |  | Conductivity            | IS:3025 (Part-14), 1984,<br>Reaffirmed 2003/ APHA<br>(22 <sup>nd</sup> edition-2012),2510 B        | 1 μS/cm to 5 mS/cm     |
|    |  | Turbidity               | IS:3025 (Part-10), 1984,<br>Reaffirmed 2006/ APHA<br>(22 <sup>nd</sup> edition-2012), 2130 B       | 1NTU to 1000 NTU       |
|    |  | Acidity as CaCO₃        | IS:3025 (Part-22), 1986,<br>Reaffirmed 2003/ APHA<br>(22 <sup>nd</sup> edition-2012), 2310 B       | 1 mg/l to 500 mg/l     |
|    |  | Alkalinity as CaCO₃     | IS :3025 (Part-23), 1986,<br>Reffirmed 2009/<br>APHA (22 <sup>nd</sup> edition-2012),<br>2320 B    | 1 mg/l to 1000 mg/l    |
|    |  | Total Hardness as CaCO₃ | IS: 3025 (Part 21), 2009/<br>APHA (22 <sup>nd</sup> edition-2012),<br>2340 C                       | 0.5 mg/l to 1000 mg/l  |
|    |  | Calcium as Ca           | IS:3025 (Part-40),1991,<br>Reaffirmed-2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 Ca B  | 1.0 mg/l to 1000 mg/l  |

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| SI. | Product / Material of Test | Specific Test<br>Performed   | Test Method Specification against which tests are performed   | Range of Testing /<br>Limits of Detection |
|-----|----------------------------|------------------------------|---|---|
|     |                            | Magnesium as Mg              | IS:3025 (Part-46),1994 ,<br>Reaffirmed 2009/APHA<br>(22 <sup>nd</sup> edition-2012), 2340B                      | 1 mg/l to 500 mg/l                        |
|     |                            | Chloride as Cl               | IS: 3025 (Part-32),1988,<br>Reaffirmed 2007/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500-CI- B             | 1.0 mg/l to 1000 mg/l                     |
|     |                            | Temperature                  | IS: 3025 (Part-9),1984,<br>Reaffirmed 2002/APHA<br>(22 <sup>nd</sup> edition-2012), 2550 B                      | Ambient to 60° C                          |
|     |                            | Sulphate as SO <sub>4</sub>  | IS: 3025 (Part-24),1986,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 4500E                      | 1 mg/l to 400 mg/l                        |
|     |                            | Residual Chlorine            | IS:3025 (Part-26), 1986,<br>Reaffirmed 2003<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 CI- B              | 0.1 mg/l to 1.0 mg/l                      |
|     |                            | Phosphate as PO <sub>4</sub> | IS:3025 (Part-31),1988,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500P,D                 | 0.02 mg/l to 25 mg/l                      |
|     |                            | Sulphite as SO₃              | IS:3025 (Part 28) 1986,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500 SO <sub>3</sub> -B | 2 mg/l to 200mg/l                         |
|     |                            | Silica as SiO <sub>2</sub>   | IS: 3025 (Part-35),1988,<br>Reaffirmed 2003/<br>APHA (22nd edition-2012),<br>4500 SiO <sub>2</sub> C            | 0.2 mg/l to 25 mg/l                       |
|     |                            | Iron as Fe                   | IS:3025 (Part-53) 2003,<br>Reaffirmed 2009/ APHA<br>(22 <sup>nd</sup> edition-2012), 3111 B/C                   | 0.02 mg/l to 100 mg/l                     |

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| SI. | Product / Material of Test | Specific Test<br>Performed            | Test Method Specification against which tests are performed                                       | Range of Testing /<br>Limits of Detection |
|-----|----------------------------|---------------------------------------|---|---|
|     |                            | Hexa Chromium as Cr <sup>6+</sup>     | IS:3025 (Part-52),2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 Cr B                     | 0.05 mg/l to 1 mg/l                       |
|     |                            | Color                                 | IS:3025 (Part 4),1983,<br>Reaffirmed 2006/<br>APHA (22 <sup>nd</sup> edition-2012),<br>2120 B     | 1.0 to 500 Hazen Unit                     |
|     |                            | Phenolic compounds                    | IS:3025 (Part 43),1992,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>5530 C/D  | 0.01 mg/l to 0.10 mg/l                    |
|     |                            | Ammonical Nitrogen as NH <sub>3</sub> | IS -3025 (Part-34),1988,<br>Reaffirmed-2003,  | 1 mg/l to 100 mg/l                        |
|     |                            | Total Nitrogen as N                   | IS - 3025 (Part-34), 1988,<br>Reaffirmed-2003   | 1 mg/l to 100 mg/l                        |
|     |                            | Nitrogen Nitrate as NO <sub>3</sub>   | IS 3025, (P-34), 1988,<br>Reaffirmed-2003   | 0.1 mg/l to 50.0 mg/l                     |
|     |                            | Nitrogen Nitrite as NO <sub>2</sub>   | IS -3025 (Part-34), 1988,<br>Reaffirmed-2003  | 0.01 mg/l to 20 mg/l                      |
|     |                            | Boron as B,                           | IS :3025 (Part 57),2005,<br>Reaffirmed 2009/APHA<br>(22 <sup>nd</sup> edition-2012), 4500 B       | 0.02 mg/l to 2 mg/l                       |
|     |                            | Anionic Surfactant                    | APHA (22 <sup>nd</sup> edition-2012),<br>5540 C   | 0.02 mg/l to 10.0 mg/l                    |
|     |                            | Fluoride as F                         | IS:3025 (Part 60),2008 /<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500-F- D                    | 0.1 mg/l to 5.0 mg/l                      |
|     |                            | Sodium as Na                          | IS:3025 (Part 45),1993,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 Na B | 0.5 mg/l to 100 mg/l                      |

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| SI.      | Product / Material of Test | Specific Test<br>Performed     | Test Method Specification against which tests are performed                                       | Range of Testing /<br>Limits of Detection |
|----------|----------------------------|--------------------------------|---|---|
|          |                            | Potassium as K                 | IS:3025 (Part 45),1993,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 K B  | 0.1 mg/l to 50 mg/l                       |
|          |                            | Aluminium                      | IS :3025 (Part 55),2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 Al-B,                   | 0.03 mg/l to 0.1 mg/l                     |
|          |                            | Sulphide                       | IS :3025 (Part 29),1986,<br>Reaffirmed 2003   | 0.5 mg/l to 2 mg/l                        |
|          |                            | Total Solids                   | IS:3025 (Part 15) 1984<br>Reaffirmed 2005   | 1 mg/l to 2000 mg/l                       |
|          |                            | Odour                          | IS:3025 (Part 5) 1983<br>Reaffirmed 2006  | Qualitative                               |
|          |                            | Fixed solids(Inorganic Solids) | IS:3025 (Part 18) 1984<br>Reaffirmed 2005   | 5 mg/l to 4000 mg/l                       |
| <u> </u> |                            | Manganese as Mn                | IS 3025 (P-59) 2006   | 0.1 mg/l to 0.5 mg/l                      |
|          |                            | Mercury                        | IS 3025 (P-48) 1994<br>Reaffirmed 2003  | 0.02 mg/l to 1.0 mg/l                     |
|          |                            | Volatile solids(Organic Solid) | IS:3025 (Part 18) 1984<br>Reaffirmed 2005   | 1 mg/l to 1000 mg/l                       |
| 2.       | Swimming Pool<br>Water     | рН                             | IS:3025 (Part-11),1983,<br>Reaffirmed 2002/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500-H+ B | 1 to 14                                   |
|          |                            | Total Dissolved Solid          | IS:3025 (Part-16),1984,<br>Reaffirmed 2006/<br>APHA (22 <sup>nd</sup> edition-2012),<br>2540 C    | 1.0 mg/l to 10000 mg/l                    |
|          |                            | Conductivity                   | IS:3025 (Part-14), 1984,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>2510 B   | 1 μS/cm to 2 mS/cm                        |

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| SI. | Product / Material of Test | Specific Test<br>Performed  | Test Method Specification against which tests are performed                                     | Range of Testing /<br>Limits of Detection |
|-----|----------------------------|-----------------------------|---|---|
|     |                            | Turbidity                   | IS:3025 (Part-10), 1984,<br>Reaffirmed 2006/<br>APHA (22 <sup>nd</sup> edition-2012),<br>2130 B | 1 NTU to 1000 NTU                         |
|     |                            | Acidity as CaCO₃            | IS:3025 (Part-22), 1986,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 2310 B     | 1 mg/l to 500 mg/l                        |
|     |                            | Alkalinity as CaCO₃         | IS :3025 (Part-23), 1986,<br>Reffirmed 2009/APHA<br>(22 <sup>nd</sup> edition-2012), 2320 B     | 1 mg/l to 500 mg/l                        |
|     |                            | Total Hardness as<br>CaCO₃  | IS: 3025(Part 21), 2009/<br>APHA (22nd edition-2012),<br>2340 C                                 | 0.5 mg/l to 1000 mg/l                     |
|     |                            | Calcium as Ca               | IS:3025 (Part-40),1991,<br>Reaffirmed-2003/<br>APHA (22nd edition-2012),<br>3500 CaB            | 1.0 mg/l to 500 mg/l                      |
|     |                            | Magnesium as Mg             | IS:3025 (Part-46), 1994,<br>Reaffirmed 2009/APHA<br>(22 <sup>nd</sup> edition-2012), 2340B      | 1 mg/l to 300 mg/l                        |
|     |                            | Chloride as Cl              | IS: 3025 (Part-32),1988,<br>Reaffirmed 2007/<br>APHA (22nd edition-2012),<br>4500-CI- B         | 1.0 mg/l to 1000 mg/l                     |
|     |                            | Temperature                 | IS: 3025 (Part-9), 1984,<br>Reaffirmed 2002/APHA<br>(22 <sup>nd</sup> edition-2012), 2550 B     | Ambient to 60° C                          |
|     |                            | Sulphate as SO <sub>4</sub> | IS: 3025 (Part-24),1986,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 4500E      | 1 mg/l to 400 mg/l                        |
|     |                            | Residual Chlorine           | IS:3025 (Part-26), 1986,<br>Reaffirmed 2003 APHA (22 <sup>nd</sup><br>edition-2012), 3500 CI- B | 0.1 mg/l to 1.0 mg/l                      |

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| SI. | Product / Material of Test | Specific Test<br>Performed        | Test Method Specification against which tests are performed   | Range of Testing /<br>Limits of Detection |
|-----|----------------------------|-----------------------------------|---|---|
|     |                            | Silica as SiO <sub>2</sub>        | IS: 3025 (Part-35), 1988,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500 SiO2 C | 0.2 mg/l to 25 mg/l                       |
|     |                            | Iron as Fe                        | IS:3025 (Part-53) 2003,<br>Reaffirmed 2009/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3111 B/C      | 0.02 mg/l to 100 mg/l                     |
|     |                            | Hexa Chromium as Cr <sup>6+</sup> | IS:3025 (Part-52), 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 Cr B                        | 0.05 mg/l to 1 mg/l                       |
|     |                            | Color                             | IS:3025 (Part 4),1983,<br>Reaffirmed 2006/APHA<br>(22 <sup>nd</sup> edition-2012), 2120 B             | 1.0 Hazen Unit to 500<br>Hazen Unit       |
|     |                            | Nitrogen Nitrate as NO₃           | IS 3025, (P-34), 1988,<br>Reaffirmed-2003   | 0.1 mg/l to 50.0 mg/l                     |
|     |                            | Boron as B,                       | IS :3025 (Part 57),2005,<br>Reaffirmed 2009/APHA<br>(22 <sup>nd</sup> edition-2012), 4500 B           | 0.02 mg/l to 2 mg/l                       |
|     |                            | Fluoride as F                     | IS:3025 (Part 60), 2008/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500-F- D                        | 0.1 mg/l to 5.0 mg/l                      |
|     |                            | Sodium as Na                      | IS:3025 (Part 45), 1993,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 Na B    | 0.5 mg/l to 100 mg/l                      |
|     |                            | Potassium as K                    | IS:3025 (Part 45), 1993,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 K B     | 0.1 mg/l to 50 mg/l                       |
|     |                            | Total Solids                      | IS:3025(Part 15) 1984<br>Reaffirmed 2005  | 1 mg/l to 2000 mg/l                       |

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| SI. | Product / Material of Test         | Specific Test<br>Performed          | Test Method Specification<br>against which tests are<br>performed                                   | Range of Testing /<br>Limits of Detection |
|-----|------------------------------------|-------------------------------------|---|---|
| 3.  | Water for food processing industry | рН                                  | IS:3025 (Part-11), 1983,<br>Reaffirmed 2002/ APHA<br>(22 <sup>nd</sup> edition-2012), 4500-<br>H+ B | 1 to 14                                   |
|     |                                    | Total Dissolved Solid               | IS:3025 (Part-16), 1984,<br>Reaffirmed 2006/APHA<br>(22 <sup>nd</sup> edition-2012), 2540 C         | 1.0 mg/l to 10000 mg/l                    |
|     |                                    | Conductivity                        | IS:3025 (Part-14), 1984,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012),2510 B          | 1 μS/cm to 2 mS/cm                        |
|     |                                    | Turbidity                           | IS:3025 (Part-10), 1984,<br>Reaffirmed 2006/APHA<br>(22 <sup>nd</sup> edition-2012), 2130 B         | 1 NTU to 1000 NTU                         |
|     |                                    | Acidity as CaCO₃                    | IS:3025 (Part-22), 1986,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 2310 B         | 1 mg/l to 500 mg/l                        |
|     |                                    | Alkalinity as CaCO₃                 | IS :3025 (Part-23), 1986,<br>Reffirmed 2009/APHA<br>(22 <sup>nd</sup> edition-2012), 2320 B         | 1 mg/l to 500 mg/l                        |
|     |                                    | Total Hardness as CaCO <sub>3</sub> | IS: 3025(Part 21), 2009/<br>APHA (22nd edition-2012),<br>2340 C                                     | 0.5 mg/l to 1000 mg/l                     |
|     |                                    | Calcium as Ca                       | IS:3025 (Part-40), 1991,<br>Reaffirmed-2003/APHA<br>(22 <sup>nd</sup> edition-2012), 3500<br>CaB    | 1.0 mg/l to 500 mg/l                      |
|     |                                    | Magnesium as Mg                     | IS:3025 (Part-46), 1994,<br>Reaffirmed 2009/APHA<br>(22 <sup>nd</sup> edition-2012), 2340B          | 1 mg/l to 300 mg/l                        |
|     |                                    | Chloride Cl                         | IS: 3025 (Part-32),1988,<br>Reaffirmed 2007/APHA<br>(22 <sup>nd</sup> edition-2012), 4500-<br>CI- B | 1.0 mg/l to 1000 mg/l                     |

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| SI. | Product / Material of Test | Specific Test<br>Performed        | Test Method Specification against which tests are performed   | Range of Testing /<br>Limits of Detection |
|-----|----------------------------|-----------------------------------|---|---|
|     |                            | Temperature                       | IS: 3025 (Part-9), 1984,<br>Reaffirmed 2002/APHA<br>(22 <sup>nd</sup> edition-2012), 2550 B                       | Ambient to 60° C                          |
|     |                            | Sulphate as SO <sub>4</sub>       | IS: 3025 (Part-24),1986,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 4500E                        | 1 mg/l to 400 mg/l                        |
|     |                            | Residual Chlorine                 | IS:3025 (Part-26), 1986,<br>Reaffirmed 2003 APHA<br>(22 <sup>nd</sup> edition-2012), 3500<br>CI- B                | 0.1 mg/l to 1.0 mg/l                      |
|     |                            | Phosphate as PO <sub>4</sub>      | IS:3025 (Part-31), 1988,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500PD                   | 0.02 mg/l to 25 mg/l                      |
|     |                            | Sulphite as SO₃                   | IS:3025 (Part 28) 1986,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500 SO <sub>3</sub> -B   | 2 mg/l to 200 mg/l                        |
|     |                            | Silica as SiO <sub>2</sub>        | IS: 3025 (Part-35), 1988,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500 SiO <sub>2</sub> C | 0.2 mg/l to 25 mg/l                       |
|     |                            | Iron as Fe                        | IS:3025 (Part-53) 2003,<br>Reaffirmed 2009/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3111 B/C                  | 0.02 mg/l to 100 mg/l                     |
|     |                            | Hexa Chromium as Cr <sup>6+</sup> | IS:3025 (Part-52), 2003/<br>APHA (22nd edition-2012),<br>3500 Cr B  | 0.05 mg/l to 1 mg/l                       |
|     |                            | Color                             | IS:3025 (Part 4),1983,<br>Reaffirmed 2006/ APHA<br>(22 <sup>nd</sup> edition-2012), 2120 B                        | 1.0 to 500 Hazen Unit                     |

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|-----|----------------------------|---------------------------------------|--|---|
|     |                            | Phenolic compounds                    | IS:3025 (Part 43), 1992,<br>Reaffirmed 2003/ APHA<br>(22 <sup>nd</sup> edition-2012), 5530<br>C/D  | 0.01 mg/l to 0.10 mg/l                    |
|     |                            | Ammonical Nitrogen as NH <sub>3</sub> | IS -3025 (Part-34),1988,<br>Reaffirmed-2003,   | 1 mg/l to 100 mg/l                        |
|     |                            | Total Nitrogen as N                   | IS - 3025 (Part-34), 1988,<br>Reaffirmed-2003  | 1 mg/l to 100 mg/l                        |
|     |                            | Nitrogen Nitrate as NO <sub>3</sub>   | IS 3025, (P-34), 1988,<br>Reaffirmed-2003  | 0.1 mg/l to 50.0 mg/l                     |
|     |                            | Nitrogen Nitrite as NO <sub>2</sub>   | IS -3025 (Part-34), 1988,<br>Reaffirmed-2003   | 0.01 mg/l to 20 mg/l                      |
|     |                            | Boron as B,                           | IS :3025 (Part 57),2005,<br>Reaffirmed 2009/APHA<br>(22 <sup>nd</sup> edition-2012), 4500 B        | 0.02 mg/l to 2 mg/l                       |
|     |                            | Anionic Surfactant                    | APHA (22 <sup>nd</sup> edition-2012),<br>5540 C  | 0.02 mg/l to 10.0 mg/l                    |
|     |                            | Fluoride as F                         | IS:3025 (Part 60), 2008/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500-F- D                     | 0.1 mg/l to 5.0 mg/l                      |
|     |                            | Sodium as Na                          | IS:3025 (Part 45), 1993,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 Na B | 0.5 mg/l to 100 mg/l                      |
|     |                            | Potassium as K                        | IS:3025 (Part 45), 1993,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 K B  | 0.1 mg/l to 50 mg/l                       |
|     |                            | Aluminium                             | IS :3025 (Part 55), 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 Al-B,                   | 0.03 mg/l to 0.1 mg/l                     |
|     |                            | Sulphide                              | IS :3025 (Part 29), 1986,<br>Reaffirmed 2003   | 0.5 mg/l to 2 mg/l                        |

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| SI. | Product / Material of Test                             | Specific Test<br>Performed     | Test Method Specification against which tests are performed   | Range of Testing /<br>Limits of Detection |
|-----|--|--------------------------------|---|---|
|     |  | Total Solids                   | IS:3025(Part 15) 1984<br>Reaffirmed 2005  | 1 mg/l to 2000 mg/l                       |
|     |  | Odour                          | IS:3025(Part 5) 1983<br>Reaffirmed 2006   | Qualitative                               |
| 4.  | Packaged<br>drinking<br>water/Natural<br>mineral water | рН                             | IS:3025 (Part-11), 1983,<br>Reaffirmed 2002/ APHA<br>(22 <sup>nd</sup> edition-2012), 4500-<br>H+ B | 1 to 14                                   |
|     |  | Total Dissolved Solid          | IS:3025 (Part-16), 1984,<br>Reaffirmed 2006/APHA<br>(22 <sup>nd</sup> edition-2012), 2540 C         | 1.0 mg/l to 10000 mg/l                    |
|     |  | Conductivity                   | IS:3025 (Part-14), 1984,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012),2510 B          | 1 μS/cm to 2 mS/cm                        |
|     |  | Turbidity                      | IS:3025 (Part-10), 1984,<br>Reaffirmed 2006/APHA<br>(22 <sup>nd</sup> edition-2012), 2130 B         | 1 NTU to 1000 NTU                         |
|     |  | Acidity as CaCO <sub>3</sub>   | IS:3025 (Part-22), 1986,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 2310 B         | 1 mg/l to 500 mg/l                        |
|     |  | Alkalinity as HCO <sub>3</sub> | IS :3025 (Part-23), 1986,<br>Reaffirmed 2009/APHA<br>(22 <sup>nd</sup> edition-2012), 2320 B        | 1 mg/l to 500 mg/l                        |
|     |  | Total Hardness as<br>CaCO₃     | IS: 3025(Part 21), 2009/<br>APHA (22nd edition-2012),<br>2340 C                                     | 0.5 mg/l to 1000 mg/l                     |
|     |  | Calcium as Ca                  | IS:3025 (Part-40), 1991,<br>Reaffirmed-2003/APHA<br>(22 <sup>nd</sup> edition-2012), 3500<br>Ca B   | 1.0 mg/l to 500 mg/l                      |
|     |  | Magnesium as Mg                | IS:3025 (Part-46), 1994,<br>Reaffirmed 2009/APHA<br>(22 <sup>nd</sup> edition-2012), 2340B          | 1 mg/l to 300 mg/l                        |

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| SI. | Product / Material of Test | Specific Test<br>Performed        | Test Method Specification against which tests are performed  | Range of Testing /<br>Limits of Detection |
|-----|----------------------------|-----------------------------------|--|---|
|     |                            | Chloride as Cl                    | IS: 3025 (Part-32),1988,<br>Reaffirmed 2007/APHA<br>(22 <sup>nd</sup> edition-2012), 4500-<br>CI- B              | 1.0 mg/l to 1000 mg/l                     |
|     |                            | Temperature                       | IS: 3025 (Part-9), 1984,<br>Reaffirmed 2002/APHA<br>(22nd edition-2012), 2550 B                                  | Ambient to 60° C                          |
|     |                            | Sulphate as SO <sub>4</sub>       | IS: 3025 (Part-24),1986,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 4500E                       | 1 mg/l to 400 mg/l                        |
|     |                            | Residual Chlorine                 | IS:3025 (Part-26), 1986,<br>Reaffirmed 2003APHA<br>(22 <sup>nd</sup> edition-2012), 3500<br>CI- B                | 0.1 mg/l to 1.0 mg/l                      |
|     |                            | Phosphate as PO <sub>4</sub>      | IS:3025 (Part-31), 1988,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 4500PD                      | 0.02 mg/l to 25 mg/l                      |
|     |                            | Sulphite as SO₃                   | IS:3025 (Part 28) 1986,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 4500<br>SO <sub>3</sub> -B   | 2 mg/l to 200mg/l                         |
|     |                            | Silica as SiO <sub>2</sub>        | IS: 3025 (Part-35), 1988,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 4500<br>SiO <sub>2</sub> C | 0.2 mg/l to 25 mg/l                       |
|     |                            | Iron as Fe                        | IS:3025 (Part-53) 2003,<br>Reaffirmed 2009/APHA<br>(22 <sup>nd</sup> edition-2012), 3111<br>B/C                  | 0.02 mg/l to 100 mg/l                     |
|     |                            | Hexa Chromium as Cr <sup>6+</sup> | IS:3025 (Part-52) ,2003<br>/APHA (22 <sup>nd</sup> edition-2012),<br>3500 Cr B                                   | 0.05 mg/l to 1 mg/l                       |

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| SI. | Product / Material of Test | Specific Test<br>Performed          | Test Method Specification against which tests are performed  | Range of Testing /<br>Limits of Detection     |
|-----|----------------------------|-------------------------------------|--|---|
|     |                            | Color                               | IS:3025 (Part 4),1983,<br>Reaffirmed 2006/<br>APHA (22 <sup>nd</sup> edition-2012),<br>2120 B      | 1.0 to 500 Hazen Unit                         |
|     |                            | Phenolic compounds                  | IS:3025 (Part 43),1992,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>5530 C/D   | 0.01 mg/l to 0.10 mg/l                        |
|     |                            | Ammonical Nitrogen as NH₃           | IS -3025 (Part-34),1988,<br>Reaffirmed-2003,   | 1 mg/l to 100 mg/l                            |
|     |                            | Total Nitrogen as N                 | IS - 3025 (Part-34), 1988,<br>Reaffirmed-2003  | 1 mg/l to 100 mg/l                            |
|     |                            | Nitrogen Nitrate as NO <sub>3</sub> | IS 3025, (P-34), 1988,<br>Reaffirmed-2003  | 0.1 mg/l to 50.0 mg/l                         |
|     |                            | Nitrogen Nitrite as NO <sub>2</sub> | IS -3025 (Part-34), 1988,<br>Reaffirmed-2003   | 0.01 mg/l to 20 mg/l                          |
|     |                            | Borate Anionic Surfactant           | Annex H IS 13428-2005<br>APHA (22 <sup>nd</sup> edition-2012),<br>5540 C                           | 1.0 mg/l to 10 mg/l<br>0.02 mg/l to 10.0 mg/l |
|     |                            | Fluoride as F                       | IS:3025 (Part 60),2008/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500-F- D                      | 0.1 mg/l to 5.0 mg/l                          |
|     |                            | Sodium as Na                        | IS:3025 (Part 45),1993,<br>Reaffirmed 2003 /<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 Na B | 0.5 mg/l to 100 mg/l                          |
|     |                            | Potassium as K                      | IS:3025 (Part 45),1993,<br>Reaffirmed 2003/ APHA<br>(22 <sup>nd</sup> edition-2012), 3500 K B      | 0.1 mg/l to 50 mg/l                           |
|     |                            | Aluminium                           | IS :3025 (Part 55),2003 /<br>APHA (22 <sup>nd</sup> edition-2012),<br>3500 Al-B,                   | 0.03 mg/l to 0.1 mg/l                         |

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| SI.     | Product / Material of Test | Specific Test<br>Performed | Test Method Specification against which tests are performed  | Range of Testing /<br>Limits of Detection |
|---------|----------------------------|----------------------------|--|---|
|         |                            | Sulphide                   | IS :3025 (Part 29),1986,<br>Reaffirmed 2003  | 0.5 mg/l to 2 mg/l                        |
|         |                            | Total Solids               | IS:3025(Part 15) 1984<br>Reaffirmed 2005   | 1 mg/l to 2000 mg/l                       |
|         |                            | Odour                      | IS:3025(Part 5) 1983<br>Reaffirmed 2006  | Qualitative                               |
|         |                            | Manganese as Mn            | IS 3025 (P-59) 2006  | 0.1 mg/l to 0.5 mg/l                      |
|         |                            | Mercury                    | IS 3025 (P-48) 1994<br>Reaffirmed 2003   | 0.02 mg/l to 1.0 mg/l                     |
| 5.      | Water for<br>Construction  | рН                         | IS:3025 (Part-11),1983,<br>Reaffirmed 2002/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500-H+ B  | 1 to 14                                   |
|         |                            | Total Suspended Solid      | IS:3025 (Part-17),1984,<br>Reaffirmed 2002/APHA<br>(22 <sup>nd</sup> edition-2012), 2540 D         | 1 mg/l to 1000 mg/l                       |
|         |                            | Acidity                    | IS:3025 (Part-22),1986,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 2310 B         | 0.1 ml to 50 ml                           |
|         |                            | Alkalinity                 | IS :3025 (Part-23),1986,<br>Reaffirmed 2009/APHA<br>(22 <sup>nd</sup> edition-2012), 2320 B        | 0.1 ml to 100 ml                          |
|         |                            | Total Hardness as<br>CaCO₃ | IS: 3025(Part 21),2009/<br>APHA (22 <sup>nd</sup> edition-2012),<br>2340 C                         | 0.5 mg/l to 1000 mg/l                     |
|         |                            | Chloride as Cl             | IS: 3025 (Part-32),1988,<br>Reaffirmed 2007/APHA<br>(22 <sup>nd</sup> edition-2012),<br>4500-CI- B | 1.0 mg/l to 1000 mg/l                     |
| <b></b> |                            | Temperature                | IS: 3025 (Part-9),1984,<br>Reaffirmed 2002/APHA<br>(22 <sup>nd</sup> edition-2012), 2550 B         | Ambient to 60° C                          |

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| SI. | Product / Material of Test | Specific Test<br>Performed         | Test Method Specification against which tests are performed                                      | Range of Testing /<br>Limits of Detection |
|-----|----------------------------|------------------------------------|--|---|
|     |                            | Sulphate as SO <sub>4</sub>        | IS: 3025 (Part-24),1986,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 4500E       | 1 mg/l to 400 mg/l                        |
|     |                            | Residual Chlorine                  | IS:3025 (Part-26),1986,<br>Reaffirmed 2003APHA<br>(22 <sup>nd</sup> edition-2012), 3500<br>CI- B | 0.1 mg/l to 1.0 mg/l                      |
|     |                            | Total Solids                       | IS:3025 (Part 15) 1984<br>Reaffirmed 2005  | 1 mg/l to 2000 mg/l                       |
|     |                            | Fixed solids(Inorganic Solid)      | IS:3025 (Part 18) 1984<br>Reaffirmed 2005  | 5 mg/l to 4000 mg/l                       |
|     |                            | Volatile solids<br>(Organic Solid) | IS:3025 (Part 18) 1984<br>Reaffirmed 2005  | 1 mg/l to 1000 mg/l                       |
| II. | POLLUTION & ENV            | IRONMENT                           |  |   |
| 1.  | Waste Water                | рН                                 | IS:3025 (Part-2),1983,<br>Reaffirmed 2002/APHA<br>(22 <sup>nd</sup> edition-2012),<br>4500-H+ B  | 0.1 to 14                                 |
|     |                            | Total Suspended Solid              | IS:3025 (Part-17),1984,<br>Reaffirmed 2002/APHA<br>(22 <sup>nd</sup> edition-2012), 2540 D       | 1 mg/l to 1000 mg/l                       |
|     |                            | Temperature                        | IS: 3025 (Part-9),1984,<br>Reaffirmed 2002/APHA<br>(22 <sup>nd</sup> edition-2012), 2550 B       | Ambient to 60° C                          |
|     |                            | Residual free Chlorine             | IS:3025 (Part-26),1986,<br>Reaffirmed 2003APHA<br>(22 <sup>nd</sup> edition-2012), 3500<br>CI- B | 0.2 mg/l to 5.0 mg/l                      |
|     |                            | Color                              | IS:3025 (Part 4),1983,<br>Reaffirmed 2006/APHA<br>(22 <sup>nd</sup> edition-2012), 2120 B        | 5.0 to 100 Hazen Unit                     |

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| SI. | Product / Material of Test | Specific Test<br>Performed            | Test Method Specification against which tests are performed                                      | Range of Testing /<br>Limits of Detection |
|-----|----------------------------|---------------------------------------|--|---|
|     |                            | Ammonical Nitrogen as NH <sub>3</sub> | IS -3025 (Part-34),1988,<br>Reaffirmed-2003,   | 1 mg/l to 100 mg/l                        |
|     |                            | Total Nitrogen as N                   | IS - 3025 (Part-34), 1988,<br>Reaffirmed-2003  | 1 mg/l to 100 mg/l                        |
|     |                            | Dissolved Oxygen                      | IS:3025 (Part 38),1989,<br>Reaffirmed 2003/<br>APHA (22 <sup>nd</sup> edition-2012),<br>4500 O B | 1.0 mg/l to 12.0 mg/l                     |
|     |                            | BOD (3 days, 27°C)                    | IS 3025, (P-44) 1993,<br>Reaffirmed-2003, 3 Day  | 1 mg/l to 50000 mg/l                      |
|     |                            | COD                                   | IS:3025 (Part 58),2006<br>/APHA (22 <sup>nd</sup> edition-2012),<br>5220 B                       | 1 mg/l to 100000 mg/l                     |
|     |                            | Oil & grease                          | IS:3025 (Part 39),1991,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 5520B        | 4 mg/l to 500 mg/l                        |
|     |                            | Sulphide                              | IS :3025 (Part 29),1986,<br>Reaffirmed 2003  | Qualitative                               |
|     |                            | Total Solids                          | IS:3025 (Part 15) 1984<br>Reaffirmed 2005  | 5 mg/l to 2000 mg/l                       |
|     |                            | Sodium as Na                          | IS:3025 (Part 45),1993,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012),<br>3500 Na B | 0.5 mg/l to 100 mg/l                      |
|     |                            | Potassium as K                        | IS:3025 (Part 45),1993,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012),<br>3500 K B  | 0.1 mg/l to 50 mg/l                       |
|     |                            | Bromide                               | APHA (22nd edition-2012),<br>IS 3025 (Part-30) 1988,<br>Reff 2003                                | 0.1 mg/l to 2.0 mg/l                      |
|     |                            | Fixed solids(Inorganic Solid)         | IS:3025 (Part 18) 1984<br>Reaffirmed 2005  | 5 mg/l to 4000 mg/l                       |

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| SI. | Product / Material of Test | Specific Test<br>Performed     | Test Method Specification against which tests are performed   | Range of Testing /<br>Limits of Detection |
|-----|----------------------------|--------------------------------|---|---|
|     |                            | Volatile solids(Organic Solid) | IS:3025(Part 18) 1984<br>Reaffirmed 2005  | 1 mg/l to 1000mg/l                        |
|     |                            | Phosphate as PO <sub>4</sub>   | IS:3025 (Part-31),1988,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012), 4500PD                      | 0.02 mg/l to 25 mg/l                      |
|     |                            | Sulphite as SO₃                | IS:3025 (Part 28) 1986,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012),<br>4500 SO <sub>3</sub> -B  | 2 mg/l to 200mg/l                         |
|     |                            | Silica as SiO <sub>2</sub>     | IS: 3025 (Part-35),1988,<br>Reaffirmed 2003/APHA<br>(22 <sup>nd</sup> edition-2012),<br>4500 SiO <sub>2</sub> C | 0.2 mg/l to 25 mg/l                       |

NOTE: The Laboratory has demonstrated competence for the stated scope for WATER. This however <u>does</u> <u>not fully cover</u> the specification requirements of BIS for the Packaged Drinking Water as per IS:14543 and the Packaged Natural Mineral Water IS:13428.

Ashok Kumar Convenor N. Venkateswaran Program Director Laboratory Saturn Quality Certifications Pvt. Ltd. (Research & Analytical

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

## **RADIOLOGICAL TESTING**

| I. | WATER  |                                   |                      |                         |
|----|--|-----------------------------------|----------------------|-------------------------|
| 1. | Packaged<br>Drinking Water,  | Alpha Radionuclide measurements   | IS: 14194 (P-2)/AERB | 0.0042Bq/L to 1000Bq/L  |
|    | Drinking water, Packaged Natural Mineral Water, Waste Water (CPCB), Water for Processed Food Industries & General Waters | Beta Radionuclide<br>measurements | IS:14194 (P-1)/AERB  | 0.0665Bq/L to 3000 Bq/L |