

# APPROVAL OF LABORATORY (AS CONSULTANT/ SPECIFIC PURPOSE)

## APPENDIX – B

PARAMETERS which can be tested in Water/Waste Water/Ambient Air/Emission

### I. WATER AND WASTE WATER

#### 1. Physical and Aggregate Properties

1. Color
2. Turbidity
3. Odour
4. Acidity
5. Alkalinity
6. Hardness
7. Conductivity
8. Salinity
9. Solids
  - a. Total Dissolved Solids
  - b. Total Suspended Solids
  - c. Fixed Dissolved Solids
  - d. Settleable Solids
10. Temperature
11. Test on sludges
  - a. Settled Sludge Volume
  - b. Sludge Volume Index
12. Radioactivity
  - (i)
    1. Alpha Emitters
    2. Beta Emitters
13. Metals
  1. Aluminum
  2. Arsenic
  3. Barium
  4. Cadmium
  5. Calcium
  6. Chromium
  7. Copper
  8. Iron
  9. Lead
  10. Magnesium
  11. Manganese
  12. Mercury

13. Nickel
  14. Potassium
  15. Selenium
  16. Sodium
  17. Titanium
  18. Vanadium
  19. Zinc
14. Inorganic Non Metallic Constituents
1. Boron
  2. Cyanide
  3. Chlorine (Free available, total free, combined, total organic, total residual)
  4. Chloride
  5. Fluoride
  6. pH Value
  7. Iodide
  8. Nitrogen (Ammonia)
  9. Nitrogen (Nitrate)
  10. Nitrogen (Nitrite)
  11. Nitrogen (Organic) (T.K.N)
  12. Oxygen (Dissolved)
  13. Phosphorous
  14. Sulphide
  15. Sulphite
  16. Sulphate
15. Aggregate Organic Constituents
1. B.O.D
  2. C.O.D
  3. T.O.C
  4. Dissolved Organic Halogen (TOX)
  5. Oil and Grease
  6. Phenols
  7. Surfactants
16. Individual Organic Compounds
1. Poly Chlorinated Biphenyls
  2. Poly Nuclear Aromatic Hydrocarbons
  3. Carbamate Pesticides
  4. Organo Chlorine Pesticides
  5. Organo Phosphate Pesticides

17. Toxicity/Bio Assay
  1. Fish bioassay test (as specified in Board's standards)
  2. Estimation of LC 50 (Fish)
18. Microbiological Parameters
  1. Total Plate Count (any other-specify)
  2. Total Coliform (MPN/Membrane Filter)
  3. Fecal Coliform (MPN/Membrane Filter)
  4. Fecal Streptococci (MPN/Membrane Filter)
  5. E. Coli

## II. AIR (AMBIENT /EMISSION)

1. Acid Mist
2. Ammonia
3. Chlorine
4. Fluoride
5. Hydrocarbon
6. Oxides of Nitrogen
7. Sulphur Dioxide
8. Suspended Particulate Matter
9. Hydrogen Sulphide
10. Mercury
11. Lead
12. Mercaptans
13. Dioxins

## III. SOUND LEVEL

1. Impulse
2. Leq



## APPENDIX – C

### INSTRUMENTS/EQUIPMENTS REQUIREMENTS

#### Instruments/Equipments required for 'C' GRADE Water/Waste Water testing Laboratory

1. Conductivity Meter
2. pH Meter
3. Spectrophotometer
4. Turbidity Meter
5. Balance (0.1 mg resolution)
6. Hot Plate
7. Hot Air Oven
8. Refrigerator
9. Thermo Meter
10. Water Distillation Assembly
11. Distillation Assembly for Fluoride, Cyanide and Ammonia
12. B.O.D Incubator
13. Autoclave
14. Bacteriological Incubator : If Microbiological analysis is intended
15. Laminar Air Flow Cabinet

#### Instruments/Equipments required for 'C' GRADE Air/Emission testing laboratory

1. High Volume Sampler (for ambient air)
2. Particulate sampler (PM<sub>2.5</sub>)
3. Stack Monitoring Kit (for Emission)
4. pH Meter
5. Balance (weigh upto 0.01 mg) & Balance (weigh up to 6 digit for PM<sub>2.5</sub>)
6. Spectrophotometer
7. Hot Plate
8. Hot Air Oven
9. Refrigerator
10. Water Distillation Assembly
11. Impulse Sound Level Meter (for Noise monitoring)

**Additional Instruments/Equipments for 'B' GRADE Water/Waste Water Testing Laboratory:**

1. Flame Photometer
2. UV- VIS Spectrophotometer
3. Specific Ion Meter (for Fluoride/ cyanide)
4. Colour Comparator
5. Balance (0.01 mg Resolution)
6. Muffle Furnace
7. Membrane Filtration Assembly
8. Filter Pump
9. Microscope : If Microbiological analysis is intended

**Additional Instruments/Equipment for 'B' GRADE Air/Emission testing laboratory**

1. Smoke Density Meter
2. Exhaust CO/HC Analyser
3. Integrating Sound Level Meter

**Additional Instruments/Equipments for 'A' GRADE Water/Waste Water testing Laboratory:**

1. Atomic Absorption Spectrophotometer or ICP-OES
2. Gas Chromatograph with EID/FID
3. High Performance Liquid Chromatograph
4. Mercury Analyser (optional)
5. UV-Visible Spectrophotometer
6. Walk-in-Cooler for sample storage
7. Radiation Counter
8. Fumigator
9. Ion Chromatograph
10. Bio Safety Cabinet Class II

**Additional Instruments/Equipments for A GRADE Air/Emission testing laboratory**

1. Atomic Absorption Spectrophotometer or ICP-OES
2. Gas Chromatograph/GCMS/GCMS-MS
3. High Performance Liquid Chromatograph
4. Mercury Analyser
5. UV-Visible Spectrophotometer
6. Radiation Counter
7. VOC Analyser
8. Walk-in-cooler
9. Microbalance



### LABORATORY SPACE (Minimum)

	Air Alone	Together
For C GRADE Laboratory	20 Sq. M.	50 Sq. M. (Approximately)
For B GRADE Laboratory	40 Sq. M.	60 Sq. M. (Approximately)
For A GRADE Laboratory	75 Sq. M.	120 Sq. M. (Approximately)

### FEE STRUCTURE

CATEGORY	GRADE	REVISED FEE
Laboratories doing analysis of commercial samples	Grade A	Rs. 15,000/-
	Grade B	Rs. 10,000/-
	Grade C	Rs. 8000/-
Laboratories attached to industry /other establishments exclusively for own purpose	Grade A	Rs. 10,000/-
	Grade B	Rs. 7000/-
	Grade C	Rs. 5000/-
Laboratories attached to University and other academic institutions	Grade A	Rs. 7000/-
	Grade B	Rs. 5000/-
	Grade C	Rs. 3000/-