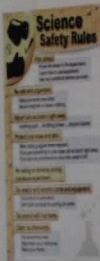


केन्द्रीय प्रयोगशाला



जनसंचित प्रवेश निषेध

प्रयोगशाला



State-of -the-Art Laboratory

Central Laboratory

MP Pollution Control Board

Bhopal



MP Pollution Control Board

The Madhya Pradesh Pollution Control Board has been vested with considerable authority and responsibility under various environment legislation to prevent the pollution. M.P. Pollution Control Board presently authorized for implementation of following Acts:

- ❖ Water (Prevention & Control of Pollution) Act,1974
- ❖ Water (Prevention & Control of Pollution) Cess Act, 1977
- ❖ Air (Prevention & Control of Pollution) Act, 1981
- ❖ Environment Protection Act ,1986
- ❖ Public Liability Insurance Act, 1991

The main objective of M.P. Pollution Control Board is to maintain water, air and soil in healthy and usable condition for various and constantly keeping watch on environmental activities in the state to attain the objectives.

Central laboratory, M.P. Pollution Control Board, Bhopal

Central Laboratory was established in the year 1990 as first and only Research Centre of M. P. Pollution Control Board. Since then this laboratory has conducted number of projects sponsored by State and Central Government in the field of air, surface water and ground water in different locations of Madhya Pradesh. In the year 2008, after the merger of Regional Lab, Bhopal, its name was changed to Central Laboratory. Central Laboratory was established with following objectives:

- ❖ To monitor the status of pollution in the state with reference to specific project activities.
- ❖ To monitor effluents and emissions at micro level.
- ❖ To provide support to Regional offices during episodal pollution and other specific activities
- ❖ To organize lectures, symposium, seminar and training so as to update the knowledge of the personnel of the Board and other interested institutions in matters relating to water, air & vehicular pollution abatement technology.
- ❖ To publish research paper in journals and present them in seminars and symposiums.
- ❖ To Organize Analytical Quality Control programmes to assure high quality performance of the laboratories of M.P. Pollution Control Board.
- ❖ To provide Central analytical facilities to the Board's regional laboratories with respect to specific parameters, to take up research projects in a phased manner & thereby keep continuous watch on the environment of Madhya Pradesh.
- ❖ To fulfil these objectives, the Central Laboratory boasts of facilities of the sophisticated instruments and other supporting instruments necessary to monitor the pollution status of environment.

Accreditation

Central Lab is enlisted vide Gazette Notification dated 8/2/2008 under Water [Pollution Control & Prevention] Act, 1974 under section 16[3]. Since its inception, the lab has obtained following accreditation:-

- ❖ Recognition under Environmental Protection Act [1986] as Environmental Laboratory since 2007.
- ❖ ISO/IEC 17025:2005 [International Quality System]through National Board for Accreditation for Testing and Calibration Laboratories(NABL)(DST, GOI) since 2011 for water and waste water
- ❖ OHSAS 18001:2007 - [Occupational Health and Safety Assessment Series] Certification since 2013 for occupation health & Safety of the laboratory personnel.

Central lab is among very few laboratory within all State Pollution Control Board's Laboratory having the NABL - ISO / IEC 17025:2005 quality management certification including OHSAS 18001:2007 Certification and recognition under EP Act 1986.

Facilities

Central laboratory state-of-the art equipment with highly skilled manpower monitoring of various environmental components:

- Water/Waste Water
- Ambient air
- Source Emission
- Soil/Solid Waste
- Noise Level
- Bacteriological
- Bio-monitoring
- Toxicity(Bio-assay)
- Vehicular exhaust Monitoring



Sampling & Testing Expertise

Water/Waste Water	Soil/Solid Waste	Ambient Air	Source Emission
<ul style="list-style-type: none"> ◆ Colour, ◆ Odour ◆ pH value ◆ Taste ◆ Turbidity ◆ Total Dissolved solids, ◆ Ammonia ◆ Boron ◆ Calcium ◆ Chloride ◆ Fluoride ◆ Phosphorus ◆ Biological Oxygen Demand (BOD) ◆ Chemical Oxygen Demand (COD) ◆ Potassium , ◆ Sodium ◆ Calcium ◆ Solids(Total, Dissolve, Suspended, Volatile, Non Volatile) ◆ Free residual chlorine, ◆ Magnesium ◆ Nitrate ◆ Phenolic compounds ◆ Sulphate ◆ Sulphide ◆ Hardness (Total, Calcium, Magnesium) ◆ Total kjeldahl Nitrogen ◆ Oil and grease, ◆ Hexavalent chromium ◆ Metals ◆ Pesticides, ◆ Polynuclear aromatic hydrocarbon (PAH) ◆ Trihalomethanes ◆ E. Coli ◆ Total coliform bacteria, ◆ Bio-assay test 	<ul style="list-style-type: none"> ◆ Ammonia ◆ Bicarbonate ◆ Boron ◆ Calcium ◆ Calcium carbonate ◆ Cation Exchange Capacity (CEC) ◆ Chloride ◆ Colour ◆ Electrical Conductivity (EC) ◆ Exchangeable Sodium Percentage (ESP) ◆ Heavy Metal ◆ Magnesium ◆ Nitrate ◆ Nitrite ◆ Nitrogen available ◆ Organic Carbon/Matter ◆ PAH ◆ Pesticides ◆ pH ◆ Phosphorous ◆ Phosphate ◆ Potassium ◆ SAR in Soil extract ◆ Sodium ◆ Soil Moisture ◆ Sulphate ◆ Sulphur ◆ Flash point/Ignitibility ◆ Measurement of Toxicity ◆ Calorific value 	<ul style="list-style-type: none"> ◆ Sulphur Dioxide ◆ Nitrogen Dioxide ◆ Particulate PM10 ◆ Particulate PM2.5, ◆ Ozone (O3) ◆ Carbon Monoxide(CO), ◆ Ammonia (NH3), ◆ Benzene (C6H6), ◆ Metals ◆ Pesticides, ◆ Polynuclear aromatic hydrocarbon (PAH) 	<ul style="list-style-type: none"> ◆ Sulphur Dioxide ◆ Nitrogen Dioxide ◆ Particulate Matter ◆ Hydrogen Chloride ◆ Carbon Monoxide ◆ Metals ◆ Pesticides ◆ Polynuclear aromatic hydrocarbon (PAH)

Analysis charges are available on website www.mppcb.nic.in

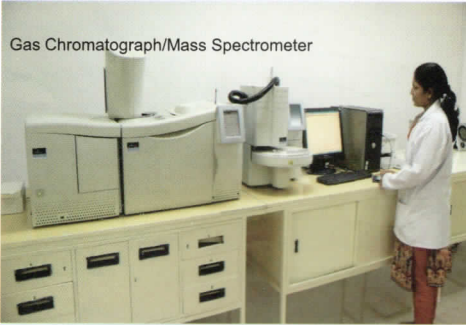
Instrumental Facilities Available

Name of Instrument	Utilization
Atomic Absorption Spectrophotometer	Air/Water/Soil/Solid Waste analysis instruments
BOD Incubator	
Bomb Calorimeter	
BTX analyser	
CHNS Analyser	
COD Digester	
Conductivity Meter	
D.O. meter	
Deep Freezer	
Electronic Balance	
Flame photometer	
Gas Chromatograph/Mass Spectrometer	
Heavy metal Digester	
Hot air Ovens	
Ion Chromatograph	
Mercury Analyser	
Microprocessor based UV-Vis Spectrophotometer	
Microwave Digester	
Millipore water purification system	
Muffle furnace	
pH meter	
PM2.5 Sampler	
Respirable Dust Sampler (RDS)	
Soxhlet Apparatus	
Stack Monitoring Kit	
Total Kjeldhal Nitrogen Assembly	
Toxicity Characteristic Leaching Procedure (TCLP) Equipment	
Triple distillation Unit	
Turbidity Meter	
Ultra Sonicator	
UV -Visible Spectrophotometer	
Visible Spectrophotometer	
Auto Clave	Bacteriological testing Instruments
Bacteriological Incubator	
Laminar Flow Chamber	
Inverted Microscope	
Stereo Microscope	Meteorological data Monitoring
Micro Meteorological Data Logger	
Sound Level Meter	Noise monitoring instruments

Analytical Techniques



Gas Chromatograph/Mass Spectrometer



The Clarus™ 500 Gas Chromatograph / Mass Spectrometer brings together a wealth of innovative features and technology to provide the most complete characterization of samples – with greater ease and in less time

CHNS Analyzer:

Determine of Carbon, Hydrogen Nitrogen, Sulphur, Oxygen & C/N Ratio

BTX Analyser:

Determine Benzene, Toluene and Xylene



Atomic Absorption Spectrophotometer

Determine the concentration of metals



Mercury Analyzer:

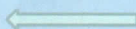
Determine Mercury in samples

Ion Chromatograph:

Determine anions and cations

Bomb Calorimeter
Determine the calorific value of the waste





pH Meter

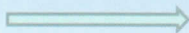
Determine pH of samples

Conductivity meter:

Determine Electric conductance in $\mu\text{mhos/cm}$

Turbidity meter

Determine turbidity in NTU



UV- VIS Spectrophotometer

colorimetric determination
of anions and cations



Micro Balances

ZHE apparatus for TCLP





Central Laboratory

Biological Analytical Instrumentation



Meteorological Station



Sound Level Meter



Ambient Air Monitoring Equipments



Emission Monitoring Equipment



Water Purification Units



Sample Pretreatment Instrumentations



Emission/Ambient Air Monitoring Equipments

Specific project work formulated on the basis of pollution status of the state.

Many study projects related to environmental pollution and related problem have been completed and several are being carried out by the Central Laboratory:

- ❖ Ground water quality assessment of different industrial areas of Madhya Pradesh.
- ❖ Heavy metal pollution in different pockets of environment i.e. Water, soil air etc.
- ❖ Environmental study of cement plants.
- ❖ Toxicity study of different types of effluent.
- ❖ Studies on presence of Poly Aromatic Hydrocarbons (PAHs) in the major cities of Madhya Pradesh.
- ❖ Pesticide pollution in natural streams and ambient air of industrial areas.
- ❖ Biomonitoring of major rivers of Madhya Pradesh.
- ❖ Studies on formation of AOX (especially Trihalomethans (THMs)) in chlorinated drinking water of the water supply treatment plants. of the State
- ❖ Studies on presence of halogenated hydrocarbons in industrial nallah and natural streams.
- ❖ Studies on impact of fly ash on surrounding environment.
- ❖ Studies of micro flora in industrial nallah and natural streams.
- ❖ Leachability study of solid wastes.
- ❖ Study of Environmental status of aerosol pollution in Sensitive zones of Bhopal city
- ❖ Status of MSW dumpsites In MP
- ❖ Environmental Monitoring of major cities of M.P.

Publication of research papers, reports, manuals, analytical methods etc.

Project reports and many research papers based on the various studies have been published in national, international journals & seminars.

Contact Address:

Central Laboratory
Madhya Pradesh Pollution Control Board
E-5, Arera Colony, Paryawaran Parisar,
Bhopal-16 (M.P.) India
Phone: (091)0755-2421425
FAX : (091)0755-2463742
Email : cl_mppcb@rediffmail.com