

Chapter – 6

INFRASTRUCTURE

Besides excellent information and communication facilities and sensitive support base, the Institute has well-equipped laboratories with the state-of-art monitoring and analytical instruments powered by a top-of-the-line team of scientists and supporting scientific and technical staff. Sophisticated and well equipped laboratories are one of the major necessity for research and development. Water Quality, Remote Sensing and GIS, Nuclear Techniques, Hydrological Investigations and Instrumentation, Soil Characterization etc. are some of the investigations which are used in various research studies. They provide a superbly-equipped, dynamic and broad based research environment. Keeping this in view, the following six laboratories have been established at the Institute:

- Hydrological Instrumentation Laboratory
- Nuclear Hydrology Laboratory
- Remote Sensing Applications & GIS Laboratory
- Snow & Glacier Laboratory and Hydrometeorological Observatory
- Soil and Ground Water Laboratory
- Water Quality Laboratory

New developments in Nuclear Hydrology Laboratory facilities

Water Samples Analyzed at the Nuclear Hydrology Laboratory : The Nuclear Hydrology Laboratory is equipped with facility to analyze water samples for Stable Isotope ratio ($\delta^{18}\text{O}$, δD and $\delta^{13}\text{C}$) and Environmental Radio Isotopes for dating waters (^3H and ^{14}C).

For the stable isotope analysis the laboratory is equipped with Continuous Flow (CF) and Dual inlet (DI) type Isotope Ratio Mass Spectrometers (IRMS). The instruments are calibrated with international standards (IAEA). For ^3H and ^{14}C analysis the laboratory has indigenously developed Tritium Enrichment Unit (TEU) and CO_2 synthesis-absorption line and Quantulus ultra low level β -counter.

In the year 2006-2007 a total 6319 (^{18}O & D) samples were analyzed for stable isotopes. Out of these, 250 were analyzed for the samples received from other organizations viz., PRL, Ahmedabad, Wadia Institute of Himalayan Geology, Dehradun, IARI, New Delhi, BARC, Mumbai, IIT, Mumbai, and IIT Roorkee. The table below summarizes analyses carried out

Analyzed isotopes	$\delta^{18}\text{O}$	δD	$\delta^{13}\text{C}$	Total
No of Samples	2958	3319	42	6319

In the year 2006-2007, 230 water samples were analyzed for tritium dating for the on-going Institutes projects.

Library

Realizing the crucial role of up-to-date information services for conducting high level R & D activities, the Institute since its inception has been in the continuous process of building and updating a good technical library with latest publications in the area of hydrology and water resources.

It has been its endeavour to add modern hydrologic literature to its library. In the year 2006-07, 230 new books, 500 bound periodicals, and 142 technical reports have been added to the collection of the library. The total collection of the library has reached up to 19448 publications comprising 10650 books, 2425 bound periodicals, 4990 technical reports, 306 Indian and foreign standards, 1036 technical papers/reprints and 41 microfiches. 442 obsolete computer manuals have also been removed from the library. The library is currently subscribing to 25 Indian and 30 foreign periodicals. Out of them, online versions of 6 international periodicals are also available in addition to their print versions. Eight periodicals are in Hindi. In addition to the Institute employees, library's resources are being utilised widely by users from other organisations.

Hydro-meteorological Observatory

Hydro-meteorological Observatory is established in the campus of the Institute. Daily precipitation, temperature, wind velocity and direction, relative humidity, and evaporation are measured in the observatory. The data are also supplied to the scientific and technical users on request. A number of students and faculty of Indian Institute of Technology, Roorkee; Indian Institute of Remote Sensing, Dehradun and Forest Research Institute, Dehradun have used this data for their project studies.

Construction Activities

The construction of Director's residence in N.I.H residential colony was started last year by M/s N.P.C.C. Ltd., Faridabad and the construction of the same has been completed and occupied in 2006.

Construction of Staff Colony of Regional Centre, Kakinada completed and inaugurated by Director, NIH on 12 March, 2007.

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