

## List of Tables

Table No.	Title	Page No.
1.1	Some important primordial radionuclides, their half-lives and natural abundances	7
1.2	Summary of various dose quantities and their units	19
1.3	Average radiation dose from naturally occurring sources	21
1.4	Guideline values and suggested references for some important heavy metals in drinking-water	27
1.5	Mortality from lung cancer among miners exposed to radon	33
1.6	Summary of some recent environmental studies in Northern India	36
2.1	Technical specifications of Laser Fluorimeter	58
2.2	Instrumental and data acquisition parameters of ICP Mass Spectrometer	64
2.3	Technical specifications of Microcontroller solution analyzer kit	67
3.1	Uranium concentrations in 90 water samples from Faridkot (30 samples, Fkt codes), Ferozepur (45 samples, Fzr codes) and Muktsar (15 samples, Mkt codes) districts using Laser fluorimetry	82
3.2	Summary of uranium concentrations of subsurface water in Faridkot, Muktsar and Ferozepur districts of Punjab state in India (all data in $\mu\text{g l}^{-1}$ )	84
3.3	Over all summary for the study region summarizing uranium concentration, corresponding radiological (excess cancer risk) and chemical risk (HQ) for 90 drinking water samples	84
3.4	Ranges of uranium in water samples from various parts of world	88
3.5	Comparison of Uranium concentration in a few drinking water samples using two techniques viz. Laser Induced Fluorimetry and Fission track technique	91
3.6	Uranium concentrations in 36 soil samples from different locations in Faridkot, Muktsar and Ferozepur districts of Punjab, India using fission track registration technique	92
4.1	Concentration (average) of heavy metals ( $\mu\text{g l}^{-1}$ ) in drinking water samples collected from Faridkot, Ferozepur and Muktsar districts of Punjab using ICP-MS	104

<b>Table No.</b>	<b>Title</b>	<b>Page No.</b>
4.2	Results in brief corresponding to the data in Table 4.2	108
4.3	Table for chemical doses (LADD) and Hazard Quotients calculated for some important heavy metals (As, Cd, Cr, Pb, Se and Zn) in water samples	108
4.4	Table briefing health effects associated with some important heavy elements and their sources of contamination in water	110
4.5	Table for water quality parameters of drinking water samples from Faridkot, Ferozpur and Muktsar districts	115
5.1	Ranges and averages of the concentrations of $^{40}\text{K}$ , $^{232}\text{Th}$ , and $^{238}\text{U}$ in typical rocks and soils	118
5.2	Characteristics of the gamma-ray spectrometer system	123
5.3	$^{226}\text{Ra}$ , $^{232}\text{Th}$ , $^{40}\text{K}$ activity in the soil samples from different locations in Faridkot, Muktsar and Ferozpur districts, Punjab, India	126
5.4	Radium equivalent, Air absorbed dose rates, annual effective dose and external hazard index ( $H_{\text{ex}}$ ) corresponding to $^{226}\text{Ra}$ , $^{232}\text{Th}$ , $^{40}\text{K}$ activity in the soil samples from different locations in Faridkot, Muktsar and Ferozpur districts, Punjab, India	127
5.5	Comparison of natural radionuclide content in soil calculated in the present study for different locations in Punjab, Northern India with global data from UNSCEAR (2000)	128
6.1	Table for indoor radon, thoron concentration and annual doses in dwellings from Faridkot, Ferozpur and Muktsar districts of Punjab	144
6.2	Summary of indoor radon/thoron concentrations in different regions of India	145
6.3	$^{222}\text{Rn}$ PAEC values reported for different countries in the world	146
6.4	Radon concentration in radon in water with corresponding doses, soil-gas and exhalation rates	151