

## CONTENTS

	Page
Preface	iii
1. Introduction to pollution Evaluation	1
I Legal Aspects of Chemical Screening Processes	1
II Validity of Data	4
2. Significance of Sampling and Statistics	14
I Accuracy and Precision	14
II General considerations in Sampling	23
III Variables Associated with Nature of Phase	26
3. Evaluation of Atmospheric Pollution	37
I Particulate Suspensions	38
II Monitoring of Carbon Monoxide and Sulfur Dioxide	42
III Hydrocarbons, Oxides of Nitrogen, and Smog	47
IV Minor Components	51
4. Principles of Gravimetric, Titrimetric, and Absorption Methods	58
I Gravimetric methods	59
II Acid-base Titrations	66
III Oxidation-Reduction Titrations	73
IV Absorption of Radiation	82
V Electrogravimetry	95
VI Coulometry	99
5. Monitoring of Water Quality	103
I Criteria of Interest	103
II Organic Loadings	106
III Phosphates	111
IV Nitrogen Compounds	113
V Determination of Toxic Metal Ions	116
VI Determination of Ion Activities by Ion-selective Electrodes	130
6. Principles of Emission Spectroscopy, Gas Chromatography, Mass Spectrometry, and Neutron Activation Analysis	136
I Emission spectroscopy	136
II Gas Chromatography	143
III High-pressure Liquid Chromatography	151
IV Mass Spectrometry	153
V Neutron Activation Analysis	155
7. Soil, Plants, and Food	159
I Nature of Systems	159
II Sampling and Sample Preparation	160
III Separation Procedures	164
IV Illustrative Methods of Analysis	165
8. Principles of Preconcentration, Masking and Method Selection	172
I Preconcentration Procedures	173
II Masking	181
III Selection of Methods	183
Index	189