

MINING ENVIRONMENT MANAGEMENT MANUAL

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PREFACE

This Mining Environment Management Manual is developed by the authors for the benefit of the entire mining industry in the Country. The Manual has been designed in such a manner that it can be easily used by the engineers and environmentalists in the mining complexes in their efforts for the management of mining environment. It has been attempted to present the existing status and comprehensive overview of all the aspects of mining environment. Since environment is a developing subject the user of the manual is suggested to, wherever necessary, consult the relevant web-sites for the latest status. The list of the useful web-sites is given in the bibliography.

The manual initially outlines broad details of the mineral mining industry in the country; the national policies, legislation, standards and procedures for establishing and operating the mines along with the various formats required to be filled/complied with under different legislation; a methodology for the preparation of the environmental management plans of the mining projects; and broad guidelines for monitoring of the environmental parameters alongwith the following aspects of mining environment.

- Brief outlines of the mining methods commonly used in the country.
- Environmental impacts of mining.
- Subsidence management.
- Design of pillars and barriers.
- Environmental impact assessment.
- Mine closure planning.
- Environmental auditing.
- Land acquisition for mining & rehabilitation of PAPs.
- Strategies for prevention of mining disasters.

- Environmental management in the mining areas covering management of all the components of environments, i.e., social, ecological, land, water and air environment.
- Community development planning including rehabilitation and resettlement of the PAPs.
- Do and don'ts in the environmental management planning for mining projects.
- Application of Geographical Information System (GIS) in environmental management in mining complexes.
- Roles of the executives in environmental management, etc.

The manual in simple english aims at to attract attention of one and all concerned with the management of mining environment. The authors believe that this manual will be useful to the following categories of the people in the mining complexes in the country and abroad.

- Mine planners in planning and designing of the mining activities and integration of environmental management measures in the mining methods.
- Mine operators in implementing the environmental management measures, monitoring and compliance of legislation.
- Regulatory agencies and their executives in developing a better understanding of the mining environment related aspects and implementing the legislation.
- Research workers in planning, designing, and undertaking research and development activities.
- Educationists in imparting the knowledge and know-how to the participants in various academic and human resource development programs.
- The Non-Governmental Organizations (NGOs) in developing a better understanding of the mining environment and assisting the mineral industry in effective implementation of the environmental management efforts.
- The people in the mining complexes in developing the understanding of various aspects of the management of mining environment.

The user of the manual is advised to read the manual carefully and understand the various topics discussed and then use their own wisdom and the suggestions made in the manual in design, planning, implementation and monitoring of the mining activities. The legislative aspect of mining environmental management is dynamic and time to time changes are made in the Acts. Rules and Regulations by the Central

and State Governments. The user is therefore advised to get abreast with the latest developments through the web-sites of the MOEF and the Central and State Pollution Control Boards and other regulatory agencies.

The authors express their deep sense of gratitude towards all those colleagues and friends who have helped them to develop this manual. Special mention is for Shri K.K. Jain of MOEF for helping in fine-tuning the Chapter related to legislation and procedure. The Chapter on Land Use Planning is contributed by Dr. D. Sarkar of the National Bureau of Soil Survey and Land Use Planning.

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CONTENTS

	Page No.
1. PREAMBLE	1-13
1.1 Mineral Industry	1
1.2 Environment	5
1.3 Mining	7
1.4 The Manual	10
2. POLICIES, LEGISLATION, STANDARDS AND PROCEDURES	14-162
2.1 Preamble	14
2.2 Constitutional Provisions	14
2.3 National Policies	15
2.3.1 National Mineral Policy	15
2.3.2 National Forest Policy	17
2.3.3 National Environmental Policy	19
2.3.4 National Industrial Policy	22
2.3.5 Draft National Rehabilitation & Resettlement Policy	22
2.4 Other Policies	27
2.4.1 Coal India's Environmental Policy	27
2.4.2 Coal India's Rehabilitation & Resettlement Policy	28
2.4.3 Tata Steel	31
2.4.4 Tata Chemicals	33
2.4.5 Hindustan Zinc Limited	34
2.4.6 Indian Rare Earths Limited	34
2.5 Mining Legislation	35
2.5.1 The Mines Act, 1952	36
2.5.2 The Mines Rules, 1955	37
2.5.3 The Mines and Minerals (Development & Regulation) Act, 1957	41

2.5.4 The Mineral Conservation and Development Rules, 1988	42
2.5.5 The Mineral Concession Rules, 1960	44
2.5.6 The Coal Mines Regulations, 1957	46
2.5.7 The Metalliferous Mines Regulations, 1961	52
2.5.8 DGMS Circulars	56
2.5.9 Coal Mines Pit-Head Bath Rules, 1959	57
2.5.10 Mines Crèche Rules, 1966	58
2.5.11 The Mines Rescue Rules, 1985	58
2.6 Environmental Legislation	58
2.6.1 The Water (Prevention & Control of Pollution) Act, 1974	59
2.6.2 The Water (Prevention & Control of Pollution) Cess Act, 1977	61
2.6.3 The Air (Prevention & Control of Pollution) Act, 1981	63
2.6.4 The Environmental (Protection) Act, 1986	65
2.6.5 The Hazardous Wastes (Management & Handling) Rules, 1989	67
2.6.6 The Public Liability Insurance Act, 1991	69
2.6.7 The National Environment Tribunal Act, 1995	70
2.6.8 The Forest (Conservation) Act, 1980	70
2.6.9 The National Environment Appellate Authority Act, 1997	72
2.6.10 Bio-Medical Waste (Management and Handling) Rules, 1998	73
2.6.11 Coastal Regulation Zone (CRZ) Rules, 1991	75
2.6.12 Restriction on The Ash Content of Coal to be Used in Thermal Power Plants	77
2.6.12 Draft Notification on Fly- Ash Utilization 1998	77
2.7 Environmental Standards	78
2.8 Environmental Appraisal Procedures for Establishing and Operating a Mine	85
2.8.1 Selection of Right Location for a Mine and Associated Facility	85
2.8.2 Areas to be Avoided	86
2.8.3 Procedures for Establishing a Mine	86
2.8.4 How to Obtain Environmental Clearance?	88
2.8.5 Procedures for Operating a Mine	90
2.8.6 Procedure for Forestry Clearance	91
2.9. Appendices	94
Appendix 2.1 Form 1 – Notice of Opening, Closing or Change of Name	95
Appendix 2.2 Form IVB – Particulars of Deceased/Injured Person(s)	96
Appendix 2.3 Form V – Notice of Diseases Notified Under Section 25	98
Appendix 2.4 Form 1 – Notice of Opening, Closing or Change, etc.	100
Appendix 2.5 Form IVB – Particulars of Deceased/Injured Person	101
Appendix 2.6 Form IVC – Particulars of Injured Person Returned to Duty	103
Appendix 2.7 Form V – Notice of Diseases Notified Under Section 25	104

Appendix 2.8	Form XIII – Consent to Establish/Operate for Discharge of Effluents.	105
Appendix 2.9	Schedule for Consent Application Fee.	108
Appendix 2.10	Specified Procedure for Effluent/Emission/Waste Sampling	108
Appendix 2.11	Form XIV – Notice of Inspection	109
Appendix 2.12	Schedule of Specified Industries for Water Cess	110
Appendix 2.13	Prescribed Rates of Water Cess	111
Appendix 2.14	Form I - Water Cess Return	112
Appendix 2.15	Prescribed Schedule of Maximum Water Consumption for Specified Industries	114
Appendix 2.16	Form II – Form of Memorandum of Appeal	115
Appendix 2.17	Consent to Establish/Operate for Emission	117
Appendix 2.18	Form II – Notice of Inspection	120
Appendix 2.19	Form VII – Form of Appeal	121
Appendix 2.20	Form V – Environmental Statement	123
Appendix 2.21	Specified Categories of Hazardous Wastes	126
Appendix 2.22	Form I – Application for Authorization/Renewal of Authorization for collection/ Reception/Treatment/ Transport/Storage /Disposal of Hazardous Wastes	127
Appendix 2.23	Form 2 – Authorization for Operating a Facility for Collection /Reception/ Treatment/ Storage/ Transport/ Disposal of Hazardous Wastes	130
Appendix 2.24	Form 3 – Format for Maintaining Records of Hazardous Wastes at the Facility	131
Appendix 2.25	Form 4– Format for the Submission of Returns regarding Disposal of Hazardous Waste	133
Appendix 2.26	Form 5– Format for Accident Reporting	134
Appendix 2.27	Categories of Bio-Medical Waste	134
Appendix 2.28	Standards for Treatment and Disposal of Bio-Medical Waste	135
Appendix 2.29	Schedule for Installing Waste Treatment Facilities like Incineratory Autoclave/Microwave System	138
Appendix 2.30	Colour Coding and type of Container for Disposal of Bio-Medical Waste	139
Appendix 2.31	Label for Bio-Medical Waste Containers/Bags	139
Appendix 2.32	Label for Transport of Bio-Medical Waste Containers/Bags	140
Appendix 2.33	Application for Authorization	141
Appendix 2.34	Annual Report	142
Appendix 2.35	Accident Reporting	143
Appendix 2.36	Prohibited Activities in CRZ	143
Appendix 2.37	Permissible Activities in CRZ	145

Appendix 2.39	Norms for Regulation of Activities	146
Appendix 2.40	Guidelines for Development of Beach Resorts/Hotels	148
Appendix 2.41	List of Ecologically Sensitive/Protected Areas	149
Appendix 2.42	Information to be Furnished for Assessment of Site for Mining Projects	149
Appendix 2.43	Information to be Submitted in Feasibility Report	151
Appendix 2.44	Application Form for Environmental Clearance	152
Appendix 2.45	Application Form for Clearance from Forest Angle	154
Appendix 2.46	Details to be Furnished in the Scheme for Compensatory Afforestation	162
3	PREPARATION OF ENVIRONMENTAL MANAGEMENT PLANS	163-169
3.1	Preamble	163
3.2	Preparation of an EMP	163
Appendix 3.1	Definitions of Hot Spots	169
4	ENVIRONMENTAL MONITORING	170-194
4.1	Objectives of Monitoring	170
4.2	Types of Monitoring	171
4.3	Identification of Sources of Pollution	172
4.4	Source Monitoring	173
4.5	Air Pollution Monitoring	174
4.6	Noise Monitoring	178
4.7	Water Pollution Monitoring	180
4.8	Soil, Solid Waste and Sediment Monitoring	183
4.9	Duration and Extent of Survey	186
4.10	Pre-requisites for Monitoring	188
4.11	Compilation of Monitored Data	189
Appendix 4.1	Formats for Compilation of Data	190
5	MINING	195-244
5.1	Preamble	195
5.2	Lignite Mining	195
5.3	Coal Mining	196
5.3.1	Opencast Coal Mining	196
5.3.2	Underground Coal Mining	200
5.4	Non-coal Mining	214
5.4.1	Non-coal Opencast Mining	215
5.4.2	Underground Mining of Ore/Mineral Deposits/Bodies	216
Appendix 5.1	Methodology for the Design of Pillars and Barriers	222
Appendix 5.2	Methodology for Prediction, Control and Management of Subsidence Movements	224

6 ENVIRONMENTAL IMPACTS OF MINING	245-259
6.1 Preamble	245
6.2 Environment Impacts of Mining	245
6.2.1 Impacts on Society	245
6.2.2 Impacts on Ecology	247
6.2.3 Impacts on Land	249
6.2.4 Impacts on Water Regime	251
6.2.5 Impacts on Atmosphere Including Noise Pollution	252
Appendix 6.1 Societal Cost of Environmental Pollution	255
7 ENVIRONMENTAL IMPACT ASSESSMENT	260-276
7.1 Preamble	260
7.2 Brief Outlines of the EIA Manual	260
7.2.1 The Need for EIA	260
7.2.2 Indian Policies Requiring EIA	261
7.2.3 The EIA Cycle and Procedures	261
7.2.4 Screening	262
7.2.5 Scoping	262
7.2.6 Baseline Data	262
7.2.7 Impact Prediction	263
7.2.8 Assessment of Alternatives, Delineation of Mitigation Measures and Environmental Impact Assessment Report	263
7.2.9 Public Hearing	264
7.2.10 Decision Making	264
7.2.11 Monitoring the Clearance Conditions	264
7.2.12 Components of EIA	264
7.2.13 Roles in the EIA Process	267
7.3 Environmental Impact Assessment	268
7.4 Case Study of a Mine	268
7.4.1 The Mining Complex	269
7.4.2 Prevailing Environmental Scenario	269
7.4.3 Desired Environmental Parameters	271
7.4.4 Environmental Indexing	272
7.4.5 Concluding Remarks	276
8 ENVIRONMENTAL MANAGEMENT	277-445
8.1 Preamble	277
8.2 Assessment of Present Social and Environmental Status	277
8.2.1 Site Details	277
8.2.2 Inventory of Activities	278
8.2.3 Geology and Hydrology of the Area	278

8.2.4 Socio Economic Parameters	278
8.2.5 Ecological Status	280
8.2.6 Land Environment	280
8.2.7 Solid Waste Management	280
8.2.8 Water Regime	280
8.2.9 Liquid Waste Management	281
8.2.10 Weather and Climatic Data	281
8.2.11 Air Quality Status	281
8.2.12 Noise Status	281
8.2.13 Hot Spots	281
8.3 Social and Environmental Management in Mine Planning	282
8.3.1 Social Impact Optimization	282
8.3.2 Environmental Impact Optimization	286
8.4 Public Participation	290
8.4.1 Why Public Participation	290
8.4.2 Community Expectation	291
8.4.3 International Context	291
8.4.4 Legislative Contest	291
8.4.5 Best Practice Environmental Management and Public Participation	292
8.4.6 Benefits to Business	292
8.4.7 Risk/Hazard Communication and Public Participation	293
8.5 Social Impact Assessment	293
8.5.1 Development of Socio-Economic Database	295
8.5.2 Displacement of People	296
8.5.3 Loss of Livelihood	297
8.5.4 Changes in Population Dynamics	298
8.5.5 Increase in the Cost of Living	298
8.5.6 Water Scarcity	298
8.5.7 Health Impacts	299
8.5.8 Development of Infrastructure Facilities	299
8.5.9 Generation of Employment Opportunities	300
8.5.10 Increase in the Aspiration of the Society	300
8.5.11 Increase in Addictions	300
8.5.12 Economic Disparity and Frustration	300
8.6 Social Impact Mitigation and Societal Development	301
8.6.1 Resettlement & Rehabilitation (R&R) Action Plan (RAP)	301
8.6.2 Indigenous People Development (IDP)	303
8.6.3 Need Based Development Planning (NBDP)	306
8.6.4 Concluding Remarks	307
8.7 Ecological Impact Assessment and Mitigation	308

8.7.1 Assessment of Ecological Impacts of Opencast Mining	308
8.7.2 Mitigation of Ecological Impacts of Opencast Mining	309
8.7.3 Assessment and Mitigation of Ecological Impacts of Underground Mining	311
8.7.4 Assessment and Mitigation of Ecological Impacts of Other Activities	312
8.8 Assessment and Mitigation of Impacts on Land	312
8.8.1 Assessment and Mitigation of Impacts of Opencast Mining on Land	312
8.8.2 Assessment and Mitigation of Impacts of Underground Mining on Land	315
8.8.3 Assessment of the Impacts on Land and their Mitigation due to Other Activities	316
8.9 Assessment and Mitigation of Impacts on Water Regime	316
8.9.1 Assessment and Mitigation of Impacts due to Opencast Mining	317
8.9.2 Assessment and Mitigation of Impacts due to Underground Mining	318
8.9.3 Assessment and Mitigation of Impacts of the Other Activities	318
8.10 Assessment and Mitigation of Impacts on Atmosphere	318
8.10.1 Assessment and Mitigation of Impacts of Opencast Mining	319
8.10.2 Assessment and Mitigation of Impacts of Underground Mining	320
8.10.3 Assessment and Mitigation of Impacts of Coal/Mineral Preparation	320
8.10.4 Assessment and Mitigation of Impacts due to Other Activities	320
8.11 Assessment and Mitigation of Impacts of Noise Pollution	321
8.11.1 Assessment of Noise Levels	321
8.11.2 Mitigation of Noise Pollution	321
8.12 Concluding Remarks	322
Appendix 8.1 Methodology for Assessing the Quality of Life	323
Appendix 8.2 Development of R&R Package and Rehabilitation Action Plan	330
Appendix 8.3 Development of Surface and Underground Water Bodies in Mining areas	353
Appendix 8.4 Re-plantation of Trees	359
Appendix 8.5 Formation and Management of Soils and Overburden Dumps in Opencast Mining Areas	361
Appendix 8.6 Questionnaire Format for Socio-Economic Survey	372
Appendix 8.7 Developmental Schemes and Income Generation Programme of Government	381
Appendix 8.8 Environmental Aspects of Blasting in Opencast Mines	388
Appendix 8.9 Land Reclamation and Rehabilitation Planning	393
Appendix 8.10 Mine Fires	401

Appendix 8.11 Acid Mine Drainage	423
Appendix 8.12 Inundation	426
Appendix 8.13 Noise Modelling	435
Appendix 8.14 Do's and Don'ts in Optimizing Social and Environmental Impacts	444
9 MINE CLOSURE	446-471
9.1 Preamble	446
9.2 Legislative and Social Necessity of Mine Closure, The Indian Context	451
9.2.1 Legal Necessity	452
9.2.2 Social Necessity	453
9.2.3 Desirable Features	454
9.3 Mine Closure Planning for Underground Mines	455
9.3.1 Issues with Respect to Societal Impacts	455
9.3.2 Issues with Respect to Land Use	455
9.3.3 Issues with Respect to Changes in Surface Topography	456
9.3.4 Issues with Respect to Water Regime	457
9.3.5 Subsidence Management	458
9.3.6 The Main Actions Addressing Mine Closure of Underground Mines	460
9.4 Mine Closure Planning for Opencast Mines.	461
9.4.1 Societal Impact Mitigation	461
9.4.2 Ecological Impact Mitigation	462
9.4.3 Land Management	462
9.4.4 Management of Water Regime	463
9.4.5 Main Actions Addressing Opencast Mine Closure	464
9.5 Format for Mine Closure Planning in Project Report	465
9.5.1 Objectives of Mine Closure	465
9.5.2 Brief Project Description	465
9.5.3 Post Mining Land Use Plan	466
9.5.4 Reclamation and Rehabilitation Strategies of Mine Closure and Development of Post Mining Land Use	466
9.5.5 Closure, Reclamation and Rehabilitation Action Plan	467
9.5.6 Stake-Holder's Involvement	469
9.5.7 Closure Costs	470
10 PROCEDURE FOR ENVIRONMENTAL PERFORMANCE AUDITING AND EVALUATION	472-482
10.1 Preamble	472
10.2 Formation of Team	473
10.3 Interaction with the Mine Management	474
10.4 Review of the Activities	474

10.5 Review of Documents and House-Keeping	475
10.6 Auditing of Compliance	475
10.7 Preparation of the Statement	476
10.8 Concluding Remarks	482
11 LAND ACQUISITION AND OPTIMIZATION OF LAND REQUIREMENT	483-492
11.1 Preamble	483
11.2 Acquisition of Land Under Land Acquisition Act, 1894	484
11.3 Acquisition of Land Under Coal Bearing Area (Acquisition and Development) Act, 1957	485
11.4 Optimization of Land Requirement	486
11.5 Assessment of Land Requirement for Mining and Associated Activities	486
11.6 Assessment of Land Requirement for Rehabilitation and Resettlement	487
11.7 Selection of Site for Rehabilitation	489
Appendix 11.1 Forms	490
12 LAND USE PLANNING	493-512
12.1 Planning: Concept and Objectives	493
12.2 Land Use Planning	493
12.3 Information Requirement for Comprehensive Land Use Planning	494
12.4 Mining Environment: Indian Scenario	494
12.5 Types of Disturbances due to Mining	495
12.6 Damaging Effects of Minespoils on Soil Systems	497
12.7 Stabilization of Minespoils	497
12.8 Alternative Land Use and Management	500
12.9 Effects of Mining on Land Use : Some Steps to be Taken	500
12.10 Rehabilitation of Mined Lands	501
12.11 Alternative Land Use during Post Mining Activities	503
12.12 Reclamation Technologies of Mined Lands	508
12.13 Topsoil and Subsoil Management	510
12.14 Management of Mining Environment	511
12.15 Best Practices for Environmental Management in Mining: Some General Recommendations	511
13 RISK ASSESSMENT AND DISASTER MANAGEMENT	513-518
13.1 Preamble	513
13.2 Risks/Hazards/Disasters Related to Strata	514
13.3 Risks/Hazards/Disasters Related to Coal/Mineral Characteristics	515
13.4 Risks/Hazards/Disasters Related to Ventilation	516
13.5 Risks/Hazards/Disasters Related to Water	516
13.6 Risks/Hazards/Disasters Related to Blasting	517
13.7 Risks/Hazards/Disasters Related to Equipment and Machines	517

13.8 Environmental Hazards/Disasters	518
13.9 Concluding Remarks	518
14 ENVIRONMENTAL ASPECTS OF TAILINGS STORAGE	519-526
14.1 Preamble	519
14.2 Environmental Impacts and Safety Considerations	519
14.3 Tailings Characterization	520
14.4 Tailings Dam Design Considerations	521
14.5 Site Selection	521
14.5.1 Regulatory requirements	521
14.5.2 Meteorology	522
14.5.3 Topography and Drainage Pattern	522
14.5.4 Water Regime	522
14.5.5 Foundation Parameters	523
14.6 Design of Tailings Storage Facilities	523
14.6.1 Tailings Storage Dumps	523
14.6.2 Tailings Storage Dams	523
14.7 Closure, Reclamation and Rehabilitation of Tailings Storage	526
15 GEOGRAPHIC INFORMATION SYSTEM : THEORY AND CONCEPTS	527-624
15.1 Background	527
15.2 What is GIS?	529
15.3 Philosophy of GIS	534
15.4 Components of GIS	535
15.5 Modern Geological Mapping	537
15.6 Coordinate System	540
15.7 How are Data Stored in GIS?	541
15.8 Formats of Feature Data	546
15.9 Data Quality and Errors in GIS	548
15.10 What One can do Using GIS?	551
15.11 How does GIS Work?	559
15.12 Multi-Criteria Evaluation in GIS	562
15.13 Spatial Interpolation Methods	562
15.14 The Steps in a GIS Project	563
15.15 Adding the Element of Time	564
15.16 The Benefits of Using GIS	565
15.17 The Future of GIS	565
15.18 Policy-Making Through GIS Technology	566
15.19 Conducting a Geographical Information System Project	566
15.20 Salient Points Highlighting the Scope of a GIS Project for Preparation of EMP of an Opencast Coal Mine Exploration	570
15.21 GIS in Environmental Management Plans	573

15.22 Environment Quality Management for Mining Areas	575
15.23 Impact Assessment of Coal Mining on Land Use/Land Cover using IRS-IA Satellite Data	576
15.24 Monitoring and Assessing the Environmental Impacts of Mining	577
15.25 Simulating Environmental Effects	578
15.26 Urban Sprawl	578
15.27 Developing Community GIS on Water	581
15.28 Towards a Socio-Economic GIS	583
15.29 Site Selection	584
15.30 Emergency Response Planning	585
15.31 Graphic Display Techniques	585
15.32 GIS in Geological Sciences	586
15.33 Dos and Don'ts in the Application of Geographical Information System in Environmental Management in Mining Areas	623
16 UTILIZATION OF FLY-ASH IN MINES	625-636
16.1 Preamble	625
16.2 Avenues of Fly-ash Utilization	626
16.2.1 Low Value Added Possible Utilization	626
16.2.2 Medium Value Added Possible Utilization	626
16.2.3 High Value Added Possible Utilization	627
16.3 Some Recent Efforts	627
16.3.1 Brick Making	627
16.3.2 Roads and Embankments	627
16.3.3 Concrete and Mortar	628
16.3.4 Hydraulic Structure	628
16.3.5 Agriculture	628
16.3.6 Extraction of Metals and Valuable Products	628
16.3.7 Backfilling and Reclamation	629
16.3.8 Overview of the Present Uses	629
16.4 Utilization of Fly-ash in Mining Areas	629
16.4.1 Arresting Advances of Mine Fires and Combating the Fires	630
16.4.2 Backfilling of Disused, Abandoned and Old Workings	630
16.4.3 Stabilization of Caved Out Areas	631
16.4.4 Stowing in Underground Workings	631
16.4.5 Reclamation of Subsided Areas and their Re-shaping	631
16.4.6 Reclamation of Mined out Areas in Opencast Mines	631
16.5 The Example	632
16.5.1 Objectives	632
16.5.2 Parameters Considered	632
16.5.3 Discussions	632

16.5.4 Consideration in Planning	633
16.5.5 Advantages	634
16.5.6 Problem Areas	635
16.5.7 Overviews of the Possible Uses of Fly ash in Mining Areas	635
16.6 Concluding Remarks	636
17 ENVIRONMENTAL ECONOMICS	637-652
17.1 Preamble	637
17.2 Role of Economics in Environmental Management	638
17.2.1 For the Societal Impacts	638
17.2.2 For the Ecological Impacts	639
17.2.3 For the Impacts on Land	639
17.2.4 For the Impacts on Water Regime	639
17.2.5 For the Impacts on Atmosphere	639
17.3 Environment as a Capital	641
17.4 Environmental Economics	643
17.4.1 Sustainability	643
17.4.2 Supportive Capacity	643
17.4.3 Assimilative Capacity	643
17.4.4 Carrying Capacity	643
17.4.5 Sustainable Development	643
17.4.6 Population based Economic Order	644
17.4.7 Need based Education	644
17.4.8 Societal Costs of Environmental Pollution	644
17.4.9 Economic Values of Environmental Attributes	645
17.4.10 Human Population and Environment	646
17.4.11 Energy and Environment	647
17.4.12 Economic Policies and Environment	648
17.4.13 Valuation Techniques	650
17.4.14 Appraisal Methods	651
17.4.15 Cost Benefit Analysis (CBA)	651
17.5. Concluding Remarks	652
18 ROLES OF EXECUTIVES IN ENVIRONMENTAL MANAGEMENT	653-658
18.1 Preamble	653
18.2 Roles of Executives	653
18.3 Environmental Training	657
Appendix 18.1 Institutional Structure of Environmental Management	658

19 DO'S AND DON'TS IN ENVIRONMENTAL MANAGEMENT PLANNING AND IMPLEMENTATION	659-674
19.1 Preamble	659
19.2 Opencast Mining	660
19.3 Underground Mining	668
19.4 Mine Fires	670
19.5 Inundation	672
19.6 Management of Dust : Particulate Matter	672
19.7 Water Pollution Management	673
19.8 Effluent Management	673
19.9 Noise Management	673
19.10 Land Management	674
BIBLIOGRAPHY	675-711

