LIST OF TABLES

Table No.	Table Caption	Page No.
2.1	Characteristic of different types of flyash	13
2.2	Summary of flyash generation and utilization for year 2017-18	14
	(CEA, 2018)	
2.3	Details of flyash generation and utilization during the year	14
	2014-15 to 2017-2018 (CEA, 2018)	
2.4	Major oxides in flyash	14
2.5	Details of coal & overburden production during the year 2015-	15
	16 (CEA, 2018)	
3.1	Details of overburden samples with their sample code	30
3.2	Detailed sources of water sampling points	33
3.3	Indian standards for drinking water (IS-10500, 2012)	35
3.4	Analytical methods and instruments used for characterization of	37
	flyash and overburden associated rocks	
3.5	Acid neutralizing oxides in sandstone (Overburden)	43
3.6	Chemical composition of overburden	44
3.7	Grain size analysis of overburden sample	44
4.1	Geochemical composition (%) of overburden of various mines	55
	of NCL	
4.2	Geochemical composition (%) of overburden + 30% flyash of	56
	various mine of NCL	
4.3	XRF results of flyash	57
4.4	Heavy metals and trace elements concentration analysis results	59
	in overburden mine sample	
4.5	Heavy metals and trace elements concentration analysis results	60
1.6	in overburden + 30% flyash sample	60
4.6	Indian safety limit for soil	60
4.7	Regulatory limits on heavy metals as per as US EPA (1993)	60
4.8	Characterization of XRF analysis of overburden, flyash, and	65
4.0	overburden + 30% flyash	70
4.9	Water characteristics in Amlohri opencast project	78 78
4.10	Water Characteristics in Amlohri opencast project (As per IS-	78
4 1 1	10500/2012 for drinking water standard)	79
4.11 4.12	Water characteristics in Dudhichua opencast project Water Characteristics in Dudhichua opencast project (As per IS-	79 79
4.12		19
4.13	10500/2012 for drinking water standard) Water Characteristics in Jayant opencast project	80
4.13 4.14	Water Characteristics in Jayant opencast project (As per IS-	80
4.14	10500/2012 for drinking water standard)	80
4.15	Water Characteristics in Kakri opencast project	81
4.15	Water Characteristics in Kakri opencast project (As per IS-	81
7.10	10500/2012 for drinking water standard)	01
4.17	Water characteristics in Khadia opencast project	82
4.17	Water Characteristics in Khadia opencast project (As per IS-	82
т. 1 О	10500/2012 for drinking water standard)	02
4.19	Water characteristics in Krishnashila opencast project	83

4.20	Water characteristics in Krishnashila opencast project (As per IS-10500/2012 for drinking water standard)	83
4.21	Water characteristics in Jhingurdah opencast project	84
4.22	Water Characteristics in Jhingurdha opencast project (As per IS-10500/2012 for drinking water standard)	84
4.23	Detailed sources of water sampling points	86
4.24	Leaching sample type	87
4.25	Variation in pH in leachate collected from FA, OB and FA-OB mix for 45 days feed with rain water	90
4.26	Detail of Pit No with area and volume of water	92
4.27	Mine pit water characteristics of Gorbi mine	95
4.28	Variation in pH value of leachate of FA, OB and FA-OB mix for 95 days with Gorbi mine water (pH 2.54)	96
4.29	Monitoring of reduction in TDS in Gorbi mine water treated with OB, FA and OB-FA mix with time	98
4.30	Water Characteristics in Amlohri opencast project	101
4.31	Water characteristics in Jhingurdah opencast project	102
4.32	Water Characteristics in Dudhichua opencast project	103
4.33	Leaching for 70 % overburden+30 % flyash with active mine water	104
4.34	Physiochemical characteristics of mine water of pre-monsoon season	107
4.35	Correlation Matrix of physiochemical characterization of mine water for pre-monsoon season	108
4.36	Physico-chemical parameters of mine water sample in Post – Monsoon	109
4.37	Correlation matrix of physiochemical characterization of mine water for post-monsoon season	110