

PROJECT REPORT FOR PENGANGA OC MINE

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APPENDIX-A

PR FOR PENGANGA OC (August,2014)

Coal (Mty) :	4.00
Peak OB (Mm3/y) :	16.84
SR (m3/t) :	3.67
Revenue Life (Yrs) :	14

STATEMENT SHOWING ESTIMATED TOTAL CAPITAL INVESTMENT AND ITS PHASING

(Amount in Rs. '000s)

A/c Head	PARTICULARS	Total Capital reqd.	PHASING								LIFE	Depreciation
			I	II	III	IV	V	VI	VII	VIII		
A.1	LAND	2592818	1776102	389846	213435	213435					14	185201.3
A.2.1	SERVICE BUILDINGS	93772	0	18754	32820	32820	9378	0			14	5698.0
A.2.2	RESIDENTIAL BUILDINGS											
	COAL	650	0	130	130	130	130	130			14	46.4
	OB	1365	0	273	273	273	273	273			14	97.5
	COMMON	2815	0	563	563	563	563	563			14	201.1
	RECLAMATION	30	0	6	6	6	6	6			14	2.1
A.2	TOTAL BUILDINGS	98632	0	19726	33792	33792	10350	972	0	0		7045.1
A.3	PLANT & MACHINERY											
	COAL	227845	0	113922	113923	0	0	0	0	0	3 - 18	15767.1
	OB	383254	0	252486	97954	32814	0	0	0	0	3 - 18	52698.2
	COMMON	294019	0	79437	89217	81997	21830	21538	0	0	3 - 18	22774.0
	RECLAMATION	0	0	0	0	0	0	0	0	0	3 - 18	0.0
	TOTAL P&M	905118		445845	301094	114811	21830	21538	0	0		91239.3
			0						0	0		
A.4	FURNITURE & FITTINGS	3300	0	1500	1500	300	0	0	0	0	28	117.9
A.5	RAILWAY SIDING	0	0	0	0	0	0	0	0	0	17	0.0
A.6	VEHICLES	2920	0	2920		0	0	0	0	0	9 - 13	259.9
A.7	PROSPECTING & BORING(Coal)	3000	0	1750	1250		0	0	0	0	14	214.3
A.8.1	CAPITAL OUTLAY IN MINES	618249	1000	368049	212692	5500	21254	11754		0	14	44160.6
A.8.2	ROADS & CULVERTS	67739	0	2200	35802	29737	0	0		0	14	4838.5
A.8.3	WATER SUPPLY & SEWERAGE	23843	0	5299	9272	9272	0	0		0	14	1703.1
A.8.4	PR PREPARATION COST	41311	41311	0	0	0		0	0	0	14	2950.8
A.8.4 A	SCIENTIFIC RESEARCH	3500	0	0	300	1300	900	1000			14	250.0
App. G	ENV. POLLUTION CONTROL	5500	0	0	1000	1500	1500	1500		0	14	392.9
A.8	TOTAL DEVELOPMENT EXP.	760142	42311	373548	259066	47309	23654	14254	0	0		54295.9
	TOTAL UPTO A8	4365930	1818413	1235135	810137	409647	55834	36764	0	0		338373.63
A.9	REVENUE EXPENDITURE CAPITALISED	117496	117496									
	LESS DEPRECIATION	65217	65217									
	NET A9	52279	52279								14	3734.2
	TOTAL CAPITAL	4418209	1870692	1235135	810137	409647	55834	36764	0	0		342107.85

PENGANGA OCM (August,2014)					APPENDIX-A.1			
STATEMENT SHOWING ESTIMATED PHASED CAPITAL INVESTMENT ON LAND ACQUISITION AND REHABILITATION								
								Amt. in Rs. '000s
Sl. No	Particulars	Rate(Rs/ha)	Qty.(ha)	Total Amount	Yearwise phasing of Land (ha)			
					YR-1	YR-2	YR-3	YR-4
1.A	Private land to be acquired							
	A) Tenancy Land	2470.00	612.10	1511887	1511887			
	B) Village Rehabilitation	2470.00	15.00	37050	37050			
	C) Bridge	2470.00	4.23	10448	10448			
	COST OF TOTAL TENANCY LAND TO BE ACQUIRED		631.33	1559385				
1.B	Stamp duty, registration charges and Lawyer's fees @ 1.25% of total value of land	1.25%	1559385	19492	19492			
1.C	Compensation package for land holders as per new R&R package of CIL	1235.00	631.33	389846		389846	0	
1.D	Govt. land to be acquired	1482.00	131.73	195224	195224			
	TOTAL LAND & COST INCLUDING COMPENSATION		763.06	2163948	1774101	389846	0	
2	Shifting & Rehabilitation of Wirur village							
2A	Compensation @ 5lacs/house	446.00	500/house	223000			111500	111500
2B	Lumpsum development charges for making suitable infrastructure			40000			20000	20000
2C	For shifting of families	446.00	300.00	133800			66900	66900
2D	For payment to NGO's			2000			1000	1000
2E	Subsistence allowance Rs 150/day(150*25*12*446)		300 days	20070			10035	10035
	TOTAL PROVISION FOR VILLAGE REHABILITATION			418870	0	0	209435	209435
3	Socio-economic survey & miscellaneous			10000	2000		4000.00	4000.00
	TOTAL			2592818	1776102	389846	213435	213435

Note - As per latest CIL R & R Policy, 2012, Clause no 8.1 C(ii) If, an one-time lump sum payment of Rs. 3.00 lakh per homestead in lieu of alternate house provision has been kept. However as alternate arrangement for village shifting in lieu of lump sum payment may be provided with kind approval of competent authority by WCL for which land provision has already been considered in the above sheet.

APPENDIX - A.2PR OF PENGANGA OC

SUMMARY OF ESTIMATED PHASED CAPITAL INVESTMENT ON CIVIL WORKS
 [AT COST INDEX 505 IN 2014 (IInd HALF)]
 (Amt. in Rs.000s)

Sl.No.	Particulars	Total Cost at CI	Phased capital Investment					
		505.00	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	5th Yr.	6th & above
1	2	3	4	5	6	7		
1	Service Buildings	93772	-	18754	32820	32820	9378	
2	Residential Buildings	4860	-	972	972	972	972	972
	Sub-Total	98632	-	19726	33792	33792	10350	972

APPENDIX - A.2.1

PR OF PENGANGA OC

**Statement Showing the Estimated Capital Requirement
on Service Buildings with Permanent Specifications
[AT COST INDEX 505 IN 2014 (IInd HALF)]**

(Amount in Rs.'000s)

S.No	Particulars	Requirement		Unit Cost at	Total cost
		Nos.	Plinth Area in sq.m.	CI 100 at Nagpur as on 01.01.92	at CI 505
1	2	3	4	5	6
1	Project Office	1	481	2.68	6239
2	Manager's Office	1	139	2.68	1681
3	EXCAVATION WORKSHOP				
(i)	Daily maintenance, schedule maintenance, medium & minor repair shed for 60t dumpers, 13 m height, open on sides, 10 bays, suitable for 30 Te EOT crane	4	144	6.6	19196
(ii)	Main Workshop building consisting of engine shop/ hydraulic equipment repair shop/ radiator repair shop/ electrical repair shop/ machine shop/Tyre repair shop 6.0 m height suitable for 10 Te electric hoist.	1	600	3.3	9999
(iii)	Washing ramp for dumpers of 60T capacity	1	144	LS	1000
(iv)	Office & Stores, 3m height	1	36	2.68	487
(v)	Substation building, 4.5m height	1	100	3.3	1667
(vi)	Concrete pavement	1	2000	0.27	2727
(vii)	Groundwater reservoir for dumper washing and fire fighting (75 KL + 5 KL) with separate compartment	1	80	3.9	1576
(viii)	Pump House	1	16	3	242
(ix)	Dumper parking place, WBM	1	1000	0.19	960
(x)	Compound wall with gate (in RM)	1	920	0.67	3113
(xi)	Waste oil tank (in kl)	1	10	3.9	197
(xii)	Fuel Station	2	9	2.28	207
(xiii)	Washing Platform, open	1	64	0.27	87
(xiv)	Lavatories & Urinals (4 seater)	1	30	4.11	623
(xv)	Scooter/Cycle Shed	1	150	1.2	909
(xvi)	Security Post	1	10.5	2.28	121
(xix)	Dumper parking place, WBM (out side)	1	1000	0.19	960
4	Facilities outside Workshop				
(i)	Brake testing track		600	0.19	576
(ii)	Dozer repair shop at quarry (6 m height)	1	120	2.64	1600
(iii)	Dozer washing station	1	120	0.27	164
(iv)	Underground water tank (in kl)		20	3.9	394
(v)	Pump House	1	4	3	61

5	E & M Workshop				
	a) Main workshop building, clear height, 4.5m	1	288	2.48	3607
	b) LMV repair shed, height - 4.5m	1	54	2.48	876
	c) LMV washing ramp size 8m*5m	1		LS	500
	d) Underground water tank	1	20	3.9	394
	e) Pump house (2m x 2m size) in kl	1	4	3	61
	f) Structural yard (open) - Moorum surface	1	144	0.13	95
	g) Washing Platform	1	24	0.27	33
	h) Workshop Office (clear ht. 3m)	1	24	2.68	325
	i) Workshop Stores (clear ht. 3m)	1	24	2.68	325
	j) Switch room	1	16	3.3	267
	k) Bituminous pavement	1	875	0.2	582
	l) Boundary wall with gate, 260m	1	272	0.67	920
	m) Security Post	1	10.5	2.28	121
	n) Cycle / Scooter stand	1	100	1.2	606
	o) Lavatories & Urinals (4 seater)	1	30	4.11	623
6	UNIT STORES				
	(i) Store shed, 6 m height	1	216	3.3	3600
	(ii) Hard stand	1	1380	0.27	1882
	(iii) Boundary wall with gate (in RM)	1	160	0.67	541
7	Sub-Station				
	a) Building for Project	1	210	3.3	3500
	b) Barbed wire fencing with gate (length in metres)	1	220	0.11	122
8	Dispensary	0	200	2.8	0
9	Magazine	0	86	3.3	0
10	Senior/ Officers club	0	158	2.28	0
11	Workers institute	0	148	2.28	0
12	First Aid Centre	0	17	2.8	0
13	Primary School	0	277	2.28	0
14	Lavatories / Urinals (4 seaters)	0	30	4.11	0
15	Officers Rest House	0	276	2.28	0
16	Staff Rest House	0	284	2.28	0
17	Canteen(80 seater)	1	245	2.28	2821
18	Shopping Centre	0	193	2.28	0
19	Rest Shelter	1	39	2.28	449

20	Security Room	1	10.5	2.28	121
21	Community Hall	0	450	2.28	0
22	Laboratory Building	0	48	2.68	0
23	Garages	1	23	1.41	164
24	Civil Maintenance Office & Stores	0	75	2.68	0
25	Staff Club	0	181	2.28	0
26	Bus Stand	0	18	1.41	0
27	Scooter/Cycle Shed <i>coaching security etc. Panon</i>	1	150	1.2	909
28	Boundary wall with gate (in RM)	1	300	0.67	1015
29	Soil Investigation, land development & drainage etc.			L.S.	500
30	Extra provision for foundation in Poor/BC Soil		-	-	6909
30	TOTAL				86756
32	ADD: Miscellaneous 3%				2603
33	TOTAL				89359
34	Add Service tax@ 12.36% of 40% of value of work				4413
35	GRAND TOTAL				93772

APPENDIX - A.2.2

PR OF PENGANGA OC

Statement Showing the Estimated Capital Requirement for Residential Buildings with permanent specifications[AT COST INDEX 505 IN 2014 (IInd HALF)]

(Rate & Amount in Rs.' 000s)

Sl	Category/Scale	Type of Qrts	No. of Persons	% Satisfaction	Number of Qrts Reqd	Unit Cost at CI 100 at Nagpur as on 01.01.92 (Rs.'000)	Total cost at CI
1	2	3	4	5	6	7	8
1	Cat. I to VI & Grade B, C, D & E	MQ	195	34.00	0	98.2	0
2	3384 - 4464 to 3696 - 5878	A	1				0
3	3998 - 6528 to 6000 - 8400, Grade A & Spl	B	90	50	0	155.67	0
4	8500 - 14600 to 17500 - 22300	C*	20	100	0	243.89	0
5	18500 - 23900 & Above	D	1	100	0	499.78	0
6	Hostel Type Accommodation**		LS		0	0	4500
7	TOTAL		307		0		4500
8	Provision for ground levelling & horticulture	1.62	Hectare			129	0
9	Rainwater harvesting					LS	0
10	TOTAL :		307	32			4500
11	Contingencies (3%)						135
12	TOTAL		307				4635
13	Add Service tax@ 12.36% of 40% of value of work						225
14	GRAND TOTAL :		307		0		4860

NOTE: Quarters requirement shall be satisfied from nearby project.

Cost of hostel accommodation is inclusive of cost of water supply and sewer line connection.

APPENDIX - A.2.3

PR OF PENGANGA QC

STATEMENT SHOWING BUILDING COST INDEX IN Maharashtra REGION IN 2014 (Second half)

(WITH REFERENCE TO 100 BASE AT NAGPUR AS ON 1.1.92)

Sl No	Description	Units	Rates at Nagpur as on 01.01.92	Average Rates at Areas (Rs.)	Ratio between col 5 & 6	Weightage	Cost
1	2	3	4	5	6	7	8
1	Bricks	1000	610.00	3813.00	6.25	16	100.00
2	Sand (67% coarse 33% fine)	Cum	90.00	659.00	7.32	5	36.60
3	Cement	qtl	140.00	594.00	4.24	21	89.04
4	Stone aggregate	Cum	230.00	1026.00	4.46	6.5	28.99
5	Timber	Cum	12500.00	32068.00	2.57	18	46.26
6	Mild/Structural/Tor Steel	Qtl	1300.00	4717.00	3.63	10	36.30
7	Labour:						
	(a) Mason (50%First Class,50%Second Class)	Each	52.00	357.00	6.87	8.5	58.40
	(a) Carpenter (50%First Class,50%Second Class)	Each	52.00	357.00	6.87	4	27.48
	(c) Coolie/Beldar	Each	40.00	297.00	7.43	11	81.73
	Total					100	504.80
	Cost Index					Say	505.00
Cost Index w.r.t. 100 base in New Delhi as on 01.10.1976							3030

APPENDIX - A 2.4

PR OF PENGANGA OC
STATEMENT SHOWING UNIT-COST OF RESIDENTIAL BUILDINGS

(Amount in Rs.'000s)

1 MINERS' QUARTERS :	
Double Storeyed with Permanent Specifications In Poor/BC soil (Require under reamed piles 6 m long)	
Plinth area	40.43 Sq.m
Circulation Area	5.00 Sq.m
Sitting-Out-Balcony	2.80 Sq.m
Total Area	48.23 Sq.m
Unit cost for miners' quarter at Nagpur under new housing scheme at cost index 100	81
Extra for Anti-Termite Treatment	1.3
Extra for foundations in Poor/BC soil	12.6
Provision for additional facilities	3.3
Total	98.2
2 TYPE 'B' QUARTERS :	
Double Storeyed with Permanent Specifications in Poor/BC soil (Require under reamed piles 5 m long)	
Plinth area	55.00 Sq.m
Circulation Area	5.00 Sq.m
Sitting-Out-Balcony	2.80 Sq.m
Total Area	63.80 Sq.m
Basic building rate / Sq.m at Nagpur at C.I 100	1.56
Internal water supply and sanitary installation @12.5% of the building rate	0.2
Internal electrification @ 10% of building rate	0.16
External service connection 5% of building rate	0.06
Extra for foundations in Poor/BC soil	0.41
Extra for Anti-Termite Treatment	0.03
Total Rate / Sq.m	2.44
Unit Rate at CI 100	155.67
3(A) TYPE 'C' QUARTERS :	
Double Storeyed with Permanent Specifications in Poor/BC soil (Require under reamed piles 5 m long)	
Plinth area	84.00 Sq.m
Circulation Area	5.00 Sq.m
Sitting-Out-Balcony	3.90 Sq.m
Total Area	92.90 Sq.m
Basic building rate / Sq.m at Nagpur at C.I. 100	1.56
Internal water supply and sanitary installation @12.5% of the building rate	0.2
Internal electrification @ 12.5% of building rate	0.2
External service connection 5% of building rate	0.06
Extra for foundations in Poor/BC soil	0.41
Extra for Anti-Termite Treatment	0.03
Total Rate / Sq.m	2.48
Unit Rate at CI 100	230.39

APPENDIX - A.2.4(contd.)

3(B) GARAGE (HALF)	(Single Storeyed)	
Plinth area	9.00 Sq.m	
Basic building rate / Sq.m at Nagpur		1.41
Extra for foundations in Poor/BC soil		0.09
Total Rate / Sq.m		1.5
Unit Rate at CI 100		13.5
Total of 4(A) and 4(B)		243.89
4(A) TYPE 'D' QUARTERS		
Single Storeyed with Permanent Specifications in Poor/BC soil (Require under reamed piles 6 m long)		
Plinth area	139.00 Sq.m	
Basic building rate / Sq.m at Nagpur at C.I. 100		1.95
Internal water supply and sanitary installation @12.5% of the building rate		0.24
Internal electrification @ 12.5% of building rate		0.24
External service connection 5% of building rate		0.1
Extra for foundations in Poor/BC soil		0.41
Extra for Anti-Termite Treatment		0.05
Total Rate / Sq.m		2.99
Unit cost at Nagpur at CI 100		415.61
4(B) SERVANT'S QUARTER	(Single Storeyed)	
Plinth area	19.00 Sq.m	
Basic building rate / Sq.m at Nagpur at C.I. 100		1.65
Internal water supply and sanitary installation @ 15% of the building rate		0.25
Internal electrification @ 10% of building rate		0.17
External service connection 5% of building rate		0.08
Extra for foundations in Poor/BC soil		0.41
Extra for Anti-Termite Treatment		0.05
Total Rate / Sq.m		2.61
Unit cost at Nagpur at CI 100		49.59
4(C) GARAGE		
Plinth area	19.00 Sq.m	
Basic building rate / Sq.m at Nagpur at C.I. 100		1.41
Extra for foundations in Poor/BC soil		0.41
Total Rate / Sq.m		1.82
Unit cost at Nagpur at CI 100		34.58
TOTAL [4(A) , 4(B) AND 4(C)]		499.76
5 HOSTEL TYPE ACCOMMODATION :		
Single Storeyed with Permanent Specifications in Poor/BC soil (Require under reamed piles 6 m long)		
Plinth area	20.00 Sq.m	
Basic building rate / Sq.m at Nagpur		1.65
Internal water supply and sanitary installation @15% of the building rate		0.25
Internal electrification @ 10% of building rate		0.17
External service connection 5% of building rate		0.08
Extra for foundations in Poor/BC soil		0.41
Extra for Anti-Termite Treatment		0.05
Total Rate / Sq.m		2.61
Unit Rate at CI 100		41.76

PENGANGA OCM (SURFACE MINER ON HIRNGI)

APPENDIX A.3.2

STATEMENT SHOWING ESTIMATED CAPITAL REQUIREMENT FOR ELECTRICAL PLANT & MACHINERY

(Base Price : AUGUST, 2014)

(Amount in Rs. '000)

S.NO.	PARTICULARS	ADDITIONAL CAPITAL REQUIREMENT		PHASING OF ADDITIONAL CAPITAL				
		QTY.	UNIT RATE	AMT.	I YEAR	II YEAR	III YEAR	IV YEAR
1.0	MAIN SUBSTATION							
1.1	Air break recloser, gang operated, off load, outdoor type, pole mounted, 33 kV, 1200A, earthing switch, with D.O. Fuses	1 No.	87	87	87			
1.2	- do - without D.O. fuse	3 Nos.	65	195	195			
1.3	Lighting arrester, station class, 33 kV, 10 kA for 33 kV system	5 sets	124	620	372			248
1.4	Outdoor type V.C.B. 33 kV, 650 Amp, 750 MVA having provisions and metering with CTR 1005 & 1005 along with C.T. P.T. and control panel	3 Nos.	722	2166	1444			722
1.5	Current transformer, outdoor type for 33 kV system	3 sets	127	381	254			127
1.6	Potential transformer, 33 kV, 100 VA, each 33 kV/110 V with 3 core for metering and protection	3 sets	86	258	176			86
1.7	Transformer, outdoor type, DY-11, 33/3.4 KV, 2500 kVA as per IS 2020 with off load tap changer and complete with all accessories as per IS 2020	2 Nos.	1565	3130	1968			1160
1.8	- do - but 3.3 KV/440 V, 500 kVA for workshop, office, stores etc.	1 No.	404	404	404			
1.9	Outdoor type V.C.B. 3.3 kV, 400 Amp, 75 MVA having protection and metering facilities with CTR 1005 for primary control of the Transformer for working	1 Nos.	471	471	471			
1.10	Lighting transformer, pole mounted, outdoor type rated 100 kVA, 33 KV/230 V (1-1)	1 No.	155	155	155			
1.11	Switch board, 3.3 kV, 13 panel indoor type, 600 Amp, 75 MVA symmetrical breaking capacity with 13 Vacuum circuit breaker panel as follows :- 2 Nos. incoming feeder control C.B. with C.T. ratio 450/5 2 Nos. quarry feeder control C.B. for pumping with C.T. ratio 300/5 1 No. CHP feeder control C.B. with C.T. ratio 150/5 1 No. Workshop feeder control C.B. with C.T. ratio 100/5 2 Nos. Capacitor bank control C.B. with C.T. ratio 200/5 4 Nos. spare feeder control C.B. for each CHP, Pumping, workshop and one for Zoned 1 No. section/cut-off C.B. with C.T. Ratio 450/5	13 Nos. of VCB in a set	149	1937	155	404		595
1.12	LT distribution board for lighting 10 panel suitable for 230 V (1-1) comprising 1 No. incoming control 3 Ph MCCB 200 A and 9 No. outgoing control (10 amp, 2 pole MCB having backup HRC fuses rated 32 amp, 6, 4 nos 4 pole 60 A MCCB with BS 4 part fuse - 3 nos)	1 No.	83	83	83			
1.13	Switch fuse unit, 230 V, 100 A with HRC fuse 100 A	1 No.	15	15	15			
1.14	Air break isolator, gang operated, off load, outdoor type pole	6 Nos.	23	138	46			46

Partial Hiring Option

PENGANGA OCM (SURFACE MINER ON HIRING)

APPENDIX A-3.2

STATEMENT SHOWING ESTIMATED CAPITAL REQUIREMENT FOR ELECTRICAL PLANT & MACHINERY

(Base Price : AUGUST, 2014)

(Amount in Rs. '000)

S.NO.	PARTICULARS	ADDITIONAL CAPITAL REQUIREMENT		PHASING OF ADDITIONAL CAPITAL			
		QTY.	UNIT RATE	AMT.	I YEAR	II YEAR	III YEAR
	mounted, 3.3 kV, 400A, with D.O. fuse, 100 A						
1.15	Lightning arrester, station class, for 3.3 kV system	8 Nos.	9	54	18	18	18
1.16	Capacitor bank, 3.3 kV grade, 75 KVAR	11 Nos.	34	374	170	204	204
1.17	3.3KV/300 KVAR auto mounted automatic power factor correction panel	1 L.S.	628	628		625	625
1.18	Miscellaneous including Handicrafts including New dual System, earth pits, earthing sheet and structural including foundation	1 L.S.	2421	2421	605	605	605
	SUB-TOTAL :			14636	0	7583	1116
2.0	QUARRY POWER DISTRIBUTION						
2.1	Lightning arrester station class for 3.3 kV system, set of 3	4 Nos.	9	36	18	9	9
2.2	3.3 kV oil immersed load break switch, 75 MVA, 400 Amp, 3 phase, 50 Hz, in outdoor mode with HRC fuse	2 Nos.	93	186	93		93
2.3	Air break switch, 3.3 kV oil immersed, off load, outdoor type pole mounted, 400 A with D.O. fuse	4 Nos.	23	92	46		46
2.4	3.3 kV, 800A, 75 MVA, 3 phase oil immersed type station class switch, 18 mm ² with 16 MCB - see below	1 set	138	2338	238	238	238
	2 Nos. incoming feeder cable 400 A, C.B. with CTR 3000						
	8 Nos. main pump feeder cable 400 A, C.B. with CTR 1500						
	1 Nos. feeder control 400 A, C.B. with CTR 750 see below						
	2 Nos. capacitor bank control 400 A, C.B. with CTR 1500						
	1 Nos. feeder control 400 A, C.B. for 3000VA, 3 phase 440 V transformer, CTR 1000						
	1 No. secondary with 400 A, C.B. with CTR 3000						
2.5	Transformer 200 KVA, 3.3 kV/440 V for power supply to LT pump	1 No.	404	404			
2.6	440 V switchboard, 12 panel, 600 Amp suitable for outdoor use with 6 circuit breakers and 16 Nos SFU with HRC fuse as follows: 7.1 No. incoming feeder control ACB 800A with CTR 4000 7.4 No. pump feeder control ACB 400A with CTR 1500 1.1 No. pump feeder control ACB 400A, in spare 5 Nos. outgoing feeder control 32 A SFU with 16 A HRC fuse 1.1 No. spare 32 A SFU with 16 A HRC fuse in spare	1 set	1680	1680	1680		
2.7	Capacitor bank, 3.3 kV, 75 KVAR	11 sets	34	374	187	187	
3.0	SUB-TOTAL :			5016	2998	854	550
	CABLE AND OVERHEAD LINES						
3.1	PVC/DWV mixing type cable with copper conductor, 3.3 kV grade of following sizes:						
	(a) 3 x 35 mm ²	1.5 km	762	1173	411	411	351
	(b) 2 x 50 mm ²	1.0 km	1072	1072	372	372	303
	(c) 3 x 70 mm ²	1.5 km	1516	2274	757	757	683
	(d) 3 x 95 mm ²	0.0 km	2505	0	0	0	0

Partial Hiring Option

PERGANGA OCM (SURFACE MINER ON HIRING)

APPENDIX A.3.2

STATEMENT SHOWING ESTIMATED CAPITAL REQUIREMENT FOR ELECTRICAL PLANT & MACHINERY

(Base Price : AUGUST, 2014)

(Amount in Rs. '000)

S.NO.	PARTICULARS	ADDITIONAL CAPITAL REQUIREMENT			PHASING OF ADDITIONAL CAPITAL				
		QTY.	UNIT RATE	AMT.	I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR
	61.3 X 120 mm ³	0.5 km	2545	1263		403	403	307	
	7.3 X 105 mm ³	0.5 km	4089	2045		716	716	613	
3.2	Lighting cable of various sizes of 550 V/110 grade								
	81.2 X 4 mm ²	5 km	58	290		102	102	86	
	71.2 X 6 mm ²	5 km	59	295		121	121	100	
3.3	3.3 KV overhead line for quarry feeder with ACSR (4x100 above) conductor on poles and other accessories.	8 km	9000	80000		3000	2500	2000	1000
	SUB-TOTAL :			16530	8	5987	4987	4656	1000
4.0	ILLUMINATION OF QUARRY								
4.1	Lighting transformer, outdoor, pole mounted AN cooled, rated 25 KVA, 3.3 KV/230 V (1-1) along with its primary control, 3.3 KV isolator, O.C. fuse & D.P. structure	12 sets	232	2784		656	656	656	
4.2	Lighting distribution board suitable for 230 V supply system, comprising 1 No. 80 A, 2 pole MCCB as incoming control & 2 Nos. 30A, 2 pole MCCB as outgoing control	12 sets	5	60		15	15	15	15
4.3	Service road illumination including O.H.L., steel poles (10.5m high) HP-SV Lamps and fittings suitable for 150 W lamps with control gears and other accessories.	1 km	800	800		400	400		
4.4	Approach road and diverted PWOD road illumination including O.H.L., steel poles (10.5m), HP-SV lamps and fittings suitable for 150 W lamps with control gears and other accessories	6.5 km	500	3250		1500	1500	2000	
4.5	Illumination of quarry area, general dump area etc. with outdoor of 6 Nos. 400 W HP-SV Lamps mounted on steel towers approximately 15m high, fixed type	10 Nos.	200	2000		500	500	500	500
4.6	Illumination of production faces with 400 W, HP-SV Lamps, in symmetrical luminaire suspended on telescopic tower (self supporting 5.5m high).	6 Nos.	150	912		228	228	228	228
4.7	Illumination of haul road with 250 W HP-SV lamps, fitted in above light fittings mounted on 12m high poles.	1 km	1017	1017		500	305	407	
	SUB-TOTAL :			12803		3712	3712	3534	1405
5.0	TESTING & MAINTENANCE EQUIPMENT								
5.1	i) Megger, 500 V - 1 No. ii) Megger, 500 V - 2 Nos. iii) Multimeter - 2 Nos. iv) Tong tester - 2 nos.	1 L.S.	516	516		258	129	129	

Partial Hiring Option

PENGANGA OCM (SURFACE MINER ON HIRING)
APPENDIX A.3.2
STATEMENT SHOWING ESTIMATED CAPITAL REQUIREMENT FOR ELECTRICAL PLANT & MACHINERY
 (Base Price : AUGUST, 2014)
 (Amount in Rs. '000)

S.NO.	PARTICULARS	ADDITIONAL CAPITAL REQUIREMENT		PHASING OF ADDITIONAL CAPITAL				
		QTY.	UNIT RATE	AMT.	I YEAR	II YEAR	III YEAR	IV YEAR
	v) Transformer oil testing machine - 1 No. etc.			616		358	129	129
	vi) Cable Fault Locator - 1No. etc.							0
	SUB-TOTAL :							
6	ELECTRONICS AND TELECOMMUNICATION							
6.1	Surface Mine Communication a. IP Enabled Exchanges 150 Lines along with all accessories. Battery backup, Four change, Rectifier, etc.	1 set	638	638		638		
	b. GSM communication for telephone lines	10 Nos.	5	50		25	25	
	c. GSM, Cellphone Machine connected with above	20 Nos.	10	200		100	90	90
6.2	RGHM - 24gms tapered line	1 L.S.	308	308		308		
6.3	Router	1 L.S.	308	308		308		
6.4	Internet & LAN, along with PC, Hardware & Software	1 L.S.	308	308		173	173	62
6.5	Ethernet Managed Switch	1 L.S.	51	51				51
6.6	Cables and Overhead Lines	1 L.S.	150	150		75		75
6.7	Testing & Measuring Instrument	1 L.S.	103	103				103
	SUB-TOTAL			3114		323	1465	341
7	Energy Conservation measures	1 L.S.	1000	1000		250	250	250
8	Miscellaneous Electrical P&M (5%)	1 L.S.	2625	2625		656	656	656
9	Erection and Commissioning (10%)	1 L.S.	5251	5251		1313	1313	1313
10	Service tax 12.36% on 80% part of Erection & Commissioning	1 L.S.	328	328		81	81	81
	GRAND TOTAL			66706	0	22888	14282	17656
								5910

Partial Hiring option

Appendix A.3.3

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT WORKSHOP

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					II Year	III Year
1.	Excavation workshop equipment (Appendix A.3.3.1)	LS	-	36373	8046	28327
2.	E&M workshop equipment (Appendix A.3.3.2)	LS	-	3585	1621	1964
	TOTAL			39958	9667	30291

Appendix A.3.3.1

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT EXCAVATION WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					II Year	III Year
A.	MACHINE SHOP:					
1	Medium duty centre lathe, 260 mm CH, 2000mm DBC, with drive units and accessories	1	1745	1745		1745
2	Light duty centre lathe, 200 mm CH, 1600mm DBC, with drive units and accessories	1	446	446	446	
3	Radial drilling machine, 50mm in steel,drilling radius 325mm	1	1157	1157		1157
4	Pedestal grinder, double ended, 300mm wheel diameter	1	46	46	46	
5	Power hacksaw to cut rounds upto 300mm, 1.5kW motor power	1	167	167	167	
6	Portable hand drill, 25mm diameter capacity	1	45	45	45	
7	Tools, accessories, surface plates, measuring instruments, work tables, dies, gauges etc.	LS	-	150	75	75
	Sub-total:			3756	779	2977

Appendix A.3.3.1

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT EXCAVATION WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					II Year	III Year
B.	ELECTRICAL REPAIR SHOP:					
1	Coil drying chamber alongwith temperature control	1	37	37	37	
2	Coil winding machine, wire size 0.5 - 2.5 mm diameter with accessories	1	48	48		48
3	Battery charging set, capacity 12-72V	1	75	75	75	
4	Distilled water plant, 15lph capacity	1	69	69	69	
5	Portable hand drill, drilling capacity 25 mm in steel	1	45	45	45	
6	Testing instruments, meters, long testers, tools, hydrometer, measuring instruments, tackles, megger, tools, implements, soldering iron etc.	LS	-	100	50	50
	Sub total :			374	276	98
C.	Engine/Hydraulic equipment repairshop:					
1	Hydraulic press, 100t capacity	1	397	397		397
2	Hydraulic jack with pullar attachment, 50 t. cap. remote controlled	1	1358	1358		1358

Appendix A.3.3.1

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT EXCAVATION WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					II Year	III Year
3	Mechanical torque multiplier suitable for output rating upto 5000 NM	1	321	321		321
4	Master tool kits	1	171	171	171	0
5	Tools, testing equipment, implements, tackles etc.	LS	-	100	50	50
	Sub-total :			2347	221	2126
D.	Radiator repair shop :					
1.	Oxy-acetylene gas cutting and brazing sets	1	14	14	14	
2.	Hand pump for radiator cleaning, work benches, partition racks, water tank, tools and tackles, soldering iron, hoist 3/5t capacity etc.	LS	-	100	50	50
	Sub-total :			114	64	50
E.	Structural shop :					
1	Transformer welding set, 400A	1	78	78	78	
2	Mobile diesel generator set	1	706	706	706	
3	Oxy acetylene gas cutting and brazing set	1	14	14	14	

Appendix A.3.3.1

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT EXCAVATION WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					II Year	III Year
4	Portable hand grinder, 300 mm wheel dia.	1	49	49		49
5	Portable hand drill, drilling cap, 25 mm	1	45	45		45
6	Vices, torque wrenches, screw drivers, wrenches, vices, handsaw, tools and tackles etc.	LS	-	100	50	50
	Sub-total:			992	848	144
F.	Dumper Daily Maintenance :					
1.	Air compressor, 14.72 m3/min capacity @ 7.0kg/cm2 pressure with tyre inflator and accessories	2	1090	2180	1090	1090
2.	Pressurised lubricating equipment with air compressor for greasing/oildespensing	1	363	363		363
3.	Articulated mobile tank with telescopic funnel for waste oil	1	69	69		69
4	OH tank 2000 lit. capacity with stand for filling	LS	-	110	110	
5	Diagnostic/testing instruments, wrenches, screw-drivers, other tools and implements	LS	-	100	50	50
	Sub-total:			2822	1250	1572

Appendix A.3.3.1

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT EXCAVATION WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					II Year	III Year
G.	Dumper schedule repair shops :					
1	Transformer welding set,400A	1	78	78	78	
2	Inverter type welding set,400A	1	663	663	663	
3	Oxy acetylene gas cutting and brazing set	1	14	14	14	
4	Nitrogen charging kit	2	102	204	102	102
5	Master tool kits	3	171	513	171	342
6	Tyre mounting and dismounting system	1	641	641		641
7	Torque wrenches, screw drivers, wrenches, saw, gauges, tools, implements, feeler gauges, Pneumatic impact wrench etc.	LS	-	100	50	50
8	Bearing heater for fitting of bearings	1	331	331		331
	Sub-total:			2544	1078	1466

Appendix A.3.3.1

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT EXCAVATION WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					II Year	III Year
H.	Dozer repair shop :					
1	Pressurised lubricating equipment	1	374	374		374
2	Portable hand drill, 25mm drilling capacity	1	45	45		45
3	Pedestal grinder double ended, wheel dia, 300mm	1	49	49		49
4	Transformer welding set, 400A	1	86	86		86
5	Oxy acetylene gas cutting and brazing set	1	14	14		14
6	Master tool kits	1	171	171		171
7	Tools, implements, mech, jacks, tackles, torque wrenches, gauges etc.	LS	-	100	50	50
	Sub-total :			839	50	789

Appendix A.3.3.1

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT EXCAVATION WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					II Year	III Year
K	Material Handling Equipment:					
1	EOT crane, 15t capacity, floor operated suitable for span 112m	1	7494	7494		7494
2	Electric hoist 10t capacity	1	664	664		664
3	Hydraulic floor crane, 2t capacity	1	69	69		69
4	Tools and tackles etc.	LS	-	100	50	50
	Sub-total:			8327	50	8277
L	Field Service Equipment:					
1	Mobile service unit	Refer Appendix No. A.3				
2	Diesel operated pump for washing shovels/drills	1	89	89		89
	Sub total:			89	0	89

Appendix A.3.3.1

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT EXCAVATION WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					II Year	III Year
I.	Washing System :					
1	High pressure multi-jet, washing machine capacity 1760lph alongwith supply pump and its accessories	1	300	300	300	0
	Sub-total:			300	300	0
J	Heavy repair shop:					
1	Hydraulic jack with puller attachments and safety devices, 100t capacity	1	2673	2673		2673
2	Flexible shaft grinder, 100mm wheel diameter	1	37	37	37	
3	Portable hand drill with drill bits, collets 25mm drilling capacity , 0.55kW motor power	1	48	48	48	
4	Oxy-acetelene gas cutting & brazing set	1	14	14	14	
5	Master tool kit	1	171	171	171	
6	Shockets, torque wrenches, stands, work bench	LS	-	100	50	50
	Sub-total:			3043	320	2723

Appendix A.3.3.1

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT EXCAVATION WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					II Year	III Year
M	Stores and Common Equipments:					
1	Diesel operated mobile welding set, 400A	1	663	663		663
2	Slurry Pump	LS	-	100	50	50
3	Provision for ventilation	LS	-	300	200	100
4	Material handling equipments for stores	LS	-	300	200	100
5	Racks, bins, hand trolleys, skid pallets etc.	LS	-	300	200	100
6	Fire extinguishers	LS	-	300	200	100
	Sub total:			1963	850	1113
	Total (A to M)			27510	6086	21424
N	Workshop power supply, Illumination 15% (A to M)	LS	-	4127	913	3214
O	Contingency expenditure 5% (A to M)	LS	-	1376	304	1072
P	Installation, commissioning etc. 10% (A to M) & N	LS	-	3164	700	2464
Q	Service tax @12.36% on 50% of installation and commissioning	LS	-	196	43	153
	Total For Excavation Workshop			36373	8046	28327

Appendix A.3.3.2

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT E & M WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					2Yr.	3 Yr.
A.	MACHINE SHOP:					
1	Light duty centre lathe, 200 mm CH and 1600 mm DBC.	1	446	446	446	
2	Tools and tackles etc.	LS	-	60	30	30
3	Power hacksaw to cut rounds upto 100 mm dia.	1	123	123	123	
4	Pillar drilling m/c, 25 mm dia. in steel	1	96	96	96	
	Sub-total			725	695	30
B.	Electrical equipment repair shop :					
1	Transformer oil filtration machine	1	342	342		342

Appendix A.3.3.2

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT E & M WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					2Yr.	3 Yr.
2	Transformer oil testing kit	1	37	37	37	
3	H.V. testing Kit	1	224	224		224
4	Hydraulically operated cable crimping m/c	1	53	53	53	
5	Motor drying unit	1	134	134		134
6	Cable vulcaniser for 3x150 sq.m cables	1	48	48	48	
7	Relay testing equipment	1	80	80	80	
8	Cable fault detector	1	96	96		96
9	Measuring instruments, tong tester, meters, soldering rod, wrenches, screw drivers, hygrometer, tools, tackles etc.	LS		60	30	30
	Sub total			1074	248	826

Appendix A.3.3.2

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT E & M WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					2Yr.	3 Yr.
C.	Mechanical repair shop :					
1.	Hydraulic hand press, 20 t. cap.	1	88	88		88
2	Portable hand drill, drilling cap. 13 mm	1	16	16	16	
3	Pedestal grinder, double ended, wheel dia. 300mm	1	48	48	48	
4	Tools and tackles etc.	LS	-	60	30	30
5	Portable hand grinder, wheel dia. 100mm	1	31	31		31
	Sub-total			243	94	149
D.	Structural shop :					
1.	Transformer welding set, 400 A capacity	1	79	79	79	
2	Tools and tackles etc.	LS	-	60	30	30
3	Oxy acetylene gas cutting and brazing set	1	14	14		14
	Sub-total			153	109	44

Appendix A.3.3.2

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT E & M WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity	Unit Cost	Amount	Phasing of Total Quantity	
					2Yr.	3 Yr.
E.	LMV Repair shop:					
1	Air compressor, 0.5 cu.M/min at 7kg/sq.cm alongwith tyre inflator, pressure gauge, receiver and electricals etc	1	91	91		91
2	High pressure water jet washing machine for light vehicle, jet capacity 760lph, 2.3kW power	1	265	265		265
3	Grease guns, tools jacks etc,	LS	-	60	30	30
	Sub-total			416	30	386
F	Material Handling Equipment/Common Eqpt.					
1	Cutting tools, Chucks, Attachements, Face plates, Rests, Collets, Fixtures, Drill bits, Vices, Keys, Micrometer, Calliper, Spanners, Allen key sets, Hacksaws, Hammers, Swage blocks, Files, Screw driver, Pliers, Other tools and implements, Racks, Hand Trol	LS	-	100	50	50
	Sub-total			100	50	50
	TOTAL A to F			2711	1226	1485

Appendix A.3.3.2

PR - PENGANGA OC MINE
ESTIMATED ADDITIONAL CAPITAL INVESTMENT ON P&M - UNIT E & M WORKSHOP

(Amount in Rs.'000)

Sl.No	Particulars	Total Quantity LS	Unit Cost	Amount	Phasing of Total Quantity	
					2Yr.	3 Yr.
G	Workshop power supply, illumination @15% (A to F)	LS	-	407	184	223
H	Contengencies @ 5% (A to F)	LS	-	136	61	75
I	Installation and commissioning @ 10% (A to F) & G	LS	-	312	141	171
J	Service tax @12.36% on 50% of installation and commissioning			19	9	10
	Grand total :			3585	1621	1964

Appendix - A.3.4

PR - PENJANGKA OCM PROJECT
STATEMENT SHOWING THE ESTIMATED CAPITAL EXPENDITURE ON PUMP, PIPES AND PIPE FITTINGS

S. No.		Particulars	Total Requirement				Phasing of Additional Capital								Amount in Rs. 000 Depreciation or Balance Capital	
			Total Quantity	Unit Cost	2nd Year		3rd Year		4th Year		5th Year					
					Qty	Am't	Qty	Am't	Qty	Am't	Qty	Am't				
1.	(i)	Pump motor set consisting of: Pump, centrifugal, multistage, radial split casing 18 impeller, steep characteristic 180 lps 150m. Head 10% increased in rated head should decrease the rated discharge by 25%, 10% decrease in rated head should increase the rated discharge by 15%.	8	26275	21400	-	-	-	-	2	5350	2	5350	4	10700	1188.88
(ii)	(ii)	Motor TEFC, NPLP, 400kW, 3.3kV, 3 ph, 50 Hz, supply														
(iii)	(iii)	Star starter Delta NPLP with remote control														
(iv)	(iv)	Base plate, sluice valve, foot valve, non return valve, flanges pressure gauges, flowmeter etc.														
2.	(i)	Pump motor set consisting of: Pump, centrifugal, multistage, radial split casing 18 impeller, steep characteristic 90 lps 60m. Head, 10% increased in rated head should decrease the rated discharge by 25%, 10% decrease in rated head should increase the rated discharge by 15%.	4	810	3640	-	-	1	910	1	910	1	910	1	910	202.22
(ii)	(ii)	Motor TEFC, NPLP, 110kW, 550V, 3 ph, 50 Hz, supply														
(iii)	(iii)	Star starter Delta NPLP with remote control														
(iv)	(iv)	Base plate, sluice valve, foot valve, non return valve, flanges pressure gauges, flowmeter etc.														
3.	(i)	Diesel engine operated pump set consisting of: Pump, centrifugal, multistage, horizontal split casing, steep characteristic, C.I. impeller 80 lps, 60 m head, 10% increase in rated head should give 25% decrease in rated discharge, 10% decrease in rated head should give 15% increase in rated discharge.	1	463	463	1	463	-	-	-	-	-	-	-	-	26.79
(ii)	(ii)	Direct engine, 50 kW, battery start, fuel tank and other														
(iii)	(iii)	Start accessories complete														
(iv)	(iv)	Base plate, sluice valve, foot valve, non return valve, flanges, pressure gauge, flow meter etc.														
4.	(i)	Portable face pump motor set consisting of: Pump, centrifugal, multistage, horizontal split casing, steep characteristic, C.I. impeller, 11 lps, 30 m head, 10% increase in rated head should give 25% decrease in rated discharge, 10% decrease in rated head should give 15% increase in rated discharge.	8	87	435	1	87	1	87	1	87	1	87	1	87	24.17
(ii)	(ii)	Motor TEFC, NPLP, 9.3 kW, 550V, 3 Phase, 50 Hz														
(iii)	(iii)	Star starter Delta, NPLP with remote control														
(iv)	(iv)	Base plate, sluice valve, foot valve, non return valve, flanges, inlet with 100m long trailing cable etc.														
5.	(i)	Pipes:	2000	5.221	10432	-	-	-	-	-	-	-	-	1000	5221	580.11
(ii)	(ii)	ERW pipe 405.4 mm (m)	2000	2.608	5216	-	-	-	-	1200	2608	500	1304	500	1304	286.78
(iii)	(iii)	ERW pipe 312 mm (m)	2000	1.929	3858	400	772	400	772	400	772	400	772	400	770	214.33
(iv)	(iv)	ERW pipe 219 mm (m)	1000	0.474	474	200	96	200	96	200	96	200	96	200	94	26.33
(v)	(v)	C.I. Pipe 60 mm (m)														
6.	(i)	Pipe fittings & misc.	1.8	1.8	1000	1.8	43	1.8	43	1.8	43	1.8	43	1.8	370	55.56
7.	(i)	Insulation and foundation:	1.8	1.8	2346	1.8	73	1.8	96	1.8	500	1.8	708	1.8	973	130.33
8.	(i)	Service tax @ 12.36% on 60% of item no. 6 & 7			207				0		42		66		83	11.5
TOTAL					49481		1540		2011		16838		14580		20512	2748.94

APPENDIX - A.3.5.0

PR FOR PENGANGA OC
STATEMENT SHOWING THE PHASED CAPITAL EXPENDITURE ON P&M :CHP

(Amount in Rs.'000)

Sl.No.	Particulars	Total Capital	Phasin of capital		
			Year I	Year II	Year III
1	2	3	4	5	6
1	Equipment (Mechanical)	27038		13519	13519
2	Erection and Commissioning @ 10.5% of 1	2838		1419	1419
3	P & M (Electrical)	1000		500	500
4	Miscellaneous 3% of 1 to 3	926		463	463
5	Civil and structurals	195867		97933	97934
6	Service tax @ 12.36% on 50% of erection	176		88	88
	TOTAL	227845		113922	113923

Appendix : A.3.5.3

PR FOR PENGANGA OC
STATEMENT SHOWING THE PHASED CAPITAL EXPENDITURE ON P&M:CHP EQUIPMENT

SL. No.	PARTICULARS	TOTAL QTY.	UNIT COST	TOTAL COST	Phasing of capital		
					Yr I	Yr II	Yr III
1	2	3	4	5	6	7	8
1	Reciprocating feeder, 300tph capacity	6	2383	14298		7149	7149
2	Rail Weigh Bridge 100t Digital Display & Recorder	2	1410	2820		1410	1410
3	Wear Resistent liner, Chute etc.	LS	—	9000		4500	4500
	TOTAL			27038		13519	13519

PR FOR PENGANGA OC
STATEMENT SHOWING THE PHASED CAPITAL EXPENDITURE ON P&M:CHP
CIVIL AND STRUCTURALS (at a cost index of 505 in 2nd half of 2014 w.r.t. 100 base in Jan'92 at nagpur)

SL NO.	PARTICULARS	UNIT	QTY	UNIT COST	AMOUNT	Phasing of Capital		
						Yr I	Yr II	Yr III
1	Retaining wall for dumper loading and allied earth work and bitumen topping behind embankment	No	1		70495			
2	Truck Loading house with 6 Nos. hoppers each of 150 te capacity.	Nos	1		78962			
			Sub Total		149457			
			(A)					
3	Ground Sump	cum	20		394			
4	Pump house	sqm	16		267			
5	Hard stand below hopper	sqm	1320		3560			
6	Electronic weighbridge foundation				1225			
7	Earthwork in excavation for laying 50mm dia pipe at 1m depth below GL. For dust suppression	m	200		34			
			Sub Total		5480			
			(B)					
			Total		154937			
			(A+B)					
	Add 10% for foundations in poor soil				15494			
	Add 3% for contingency	-	-	-	5113			
	Add for soil investigation	-	-	LS	700			
	Add for General land development	-	-	sqm	600			
	Add for design Engineering @ 3.75%				6391			
	Add for ST @2%				3099			
	Add Service tax				9533			
	GRAND TOTAL				195867		97933	97934

APPENDIX - A.4

STATEMENT SHOWING ESTIMATED PHASED

CAPITAL INVESTMENT ON FURNITURE & FITTINGS

Sl. No	Particulars	Quantity	Total Cost	Phasing of capital provision				
				I	II	III	IV	V
1.	General Furniture & Fittings	LS	3300		1500	1500	300	
	Total		3300	0	1500	1500	300	

STATEMENT SHOWING ESTIMATED PHASED CAPITAL INVESTMENT ON VEHICLES

APPENDIX-A.6
(Amount in Rs. '000s)

SL.NO.	Particulars	Nos.	Unit Rate	Total Cost	Phasing of capital provision (Years)									
					YR-I		YR-II		YR-III		YR-IV		YR-V	
					Qty	Amt.	Qty.	Amt.	Qty.	Amt.	Qty	Amt.	Qty	Amt.
1	Diesel Truck	1**							1					
2	Diesel Jeep	3***					2		1					
3	School Bus	1**					1							
4	Explosive Van 3/5 t	1*	1886	1886			1*	1886						
5	Job Pick Up bus	2**					1		1					
6	Ambulance	1*	517	517			1*	517						
7	Cash Van	1*	517	517			1*	517						
	TOTAL			2920				2920						

*departmental equipment **Rs 70,000/month

***Rs 30,000/month

APPENDIX-A.7

**STATEMENT SHOWING ESTIMATED PHASED
CAPITAL INVESTMENT ON PROSPECTING & BORING**

(Amount in Rs '000s)

Sl. No	Particulars	Quantity	Total cost	Phasing of capital provision			
				I	II	III	IV
1.	Proving of Incrop side seam thickness & FAULTS		3000		1750	1250	
	TOTAL		3000	0	1750	1250	

August,2014

APPENDIX-A.8.1

STATEMENT SHOWING ESTIMATED PHASED CAPITAL INVESTMENT ON MINE DEVELOPMENT

(Rupees in ' 000s)

SL.NO.	PARTICULARS	TOTAL AMOUNT	PHASING					
			I	II	III	IV	V	VI
1	INCOMING POWER SUPPLY	41000		20000	21000			
2	DISMANTALING OF ELECTRIC LINE	1500			1500			
3	RIVER BRIDGE WITH ROADS ON BOTH SIDE	363384	1000	181192	181192			
4	NALA DIVERSION (4.8 KM)	164857		164857				
5	PITCHING/COMPACTION OF EMBANKMENT	10000			5000	2500	2500	
6	HARD STAND FOR COAL STOCK	4000			2000	2000		
7	HAUL ROAD	23508					11754	11754
8	MISCELLANEOUS	10000			2000	1000	7000	
	TOTAL	618249	1000	366049	212692	5500	21254	11754

APPENDIX - A.8.2PR OF PENGANGA OC

SUMMARY OF ESTIMATED CAPITAL INVESTMENT ON ROADS & CULVERTS
[AT COST INDEX 505 IN 2014 (IInd HALF)]

		(Amount in Rs.'000)	
Sl. No.	Particulars	Total Cost at CI 505	Remarks
A	Approach Road		
A.1	Approach Road To Mine	61977	App.A.8.2.1
A.2	High Level Bridge over Penganga River (considered in App.A.8.1)	363384	
B	Colony Roads	0	
C	Haul Roads (considered in App.A.8.1)	23508	App.A.8.2.3
D	Service Roads	5762	App.A.8.2.4
	GRAND TOTAL (Excluding Haul Road & High Level Bridge)	67739	

APPENDIX - A.6.2.1

PR OF PENGANGA OC
STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT ON APPROACH ROAD
[AT COST INDEX 505 IN 2014 (IInd HALF)]
Approach Road to Mine Site

(Rate and total cost in Rs.'000)

SL. NO.	PARTICULARS	Total quantity required	Unit Rate at CI 100 at Nagpur as on 1.1.92	Total Cost at CI 505
1	Approach Road to Mine Site			
	SECTOR ROAD (STRATUM 'D') :			
	7.5 M wide with 2 m wide cycle track on both side (DOUBLE LANE)			
i)	Specifications :			
	22.5 cm thick cobble soling over 27.5 cm moorum filling.			
	15 cm thick WBM in 2 layers 4 cm thick premix surfacing			
	Cycle track: 2.5 cm thick premix surfacing over 15cm WBM (2 layers)			
	blinded with moorum, Brick edging on both sides.			
	Approach road to mine site (in mtrs)	5295	1.896	50699
2	CULVERTS (13 M Wide)			
i)	4.57 M span R.C.C. slab culvert	1	297	1500
ii)	3.05 M span R.C.C. slab culvert	2	198	2000
iii)	1.83 M span R.C.C. slab culvert	2	118.8	1200
iv)	1.22 M span R.C.C. slab culvert	1	79.2	400
v)	0.61 m dia. hume pipe culvert	6	24.6	745
3	Tree guards	211.6	0.19	203
4	Extra for poor/B.C. soil for items 2 @ 10%			585
5	TOTAL			57332
6	Contingencies 3%			1720
7	TOTAL			59052
8	Add Service tax @ 12.36% of 40% of value of work			2925
9	GRAND TOTAL			61977

61977-000

APPENDIX - A.8.2.3

PR OF PENGANGA OC
STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT ON HAUL ROADS
[AT COST INDEX 505 IN 2014 (IInd HALF)]

(Rate and total cost in Rs.'000)

SL. NO.	PARTICULARS	Total quantity required	Unit Rate at CI100 at Nagpur as on 1.1.92	Total Cost at CI 505
1				
a)	Haul Road and Culverts for 36 Te Rear Dumpers			
	WIDTH			
	Carriage way of double lane = 13 m			
	Dozer track = 5 m			
	Shoulder on both sides = 2 m			
	Total road width = 22 m			
	Specifications suitable for CBR value 3 (Consolidated thickness)			
	Total thickness of Pavement = 90 cm			
	Thickness of gravel layer 63mm-40mm well graded=18cm			
	Thickness of gravel layer 90mm-40mm well graded=20cm			
	Thickness of moorum sand layer =52cm			
	Shoulder			
	moorum sand filling			
a)	Length (in m)			
	on surface	500	4.79	12095
	inside mine	500	1.58	3990
b)	Culverts (13.00m Wide):			
i)	4.57m span RCC slab culvert		403.8	0
ii)	3.05m span RCC slab culvert	1	269.4	1360
iii)	1.83 m span RCC slab culvert		181.4	0
iii)	0.61m diameter hume pipe culvert	1	33.6	170
3	Road side drain (size 60cmx90cm)	1200	0.62	3757
4	Extra for poor /BC soil @ 10% for item 2&3			378
5	TOTAL			21748
6	Contingencies 3%			652
8	TOTAL			22400
9	Add Service tax@ 12.36% of 40% of value of work			1108
10	GRAND TOTAL.			23508

PR OF PENGANGA OC

APPENDIX - A 8.2.4

STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT ON SERVICE ROADS
[AT COST INDEX 505 IN 2014 (IInd HALF)]
All Options

SL NO.	PARTICULARS	(Rate and total cost in Rs '000)		
		Total quantity required	Unit Rate at C1100 at Nagpur as on 1.1.92	Total Cost at C1505
1	SECTOR ROAD (STRATUM 'C')			
	3.75 M wide with 2 m Pucca shoulder on both sides.			
i)	Specifications :			
	15 cm thick cobble soling over 22.5 cm moorum filling.			
	15 cm thick WBM in 2 layers			
	2.5 cm thick premix bituminous carpeting with seal coat.			
	Pucca shoulders : 7.5 cm moorum layer over 7.5 cm stone			
	metalling blinded with moorum.			
	Brick edging on both sides.			
ii)	Length (in km)	1.00	780	3936
2	CULVERTS (7.5m Wide)			
i)	4.57 m span R.C.C. Slab Culvert	1	225	1136
ii)	3.05 m span R.C.C. Slab Culvert			0
iii)	1.83 m span R.C.C. Slab Culvert			0
iv)	0.81 m dia. hume pipe culvert	1	18.6	94
3	Tree guards	40	0.19	38
4	Extra for poor/B.C. soil for item 2 @ 10%			123
5	TOTAL			5330
6	Contingencies 3%			160
7	TOTAL			5490
8	Add Service tax@ 12.38% of 40% of value of work			272
9	GRAND TOTAL			5762

APPENDIX - A.8.3PR OF PENGANGA OC

SUMMARY OF ESTIMATED CAPITAL INVESTMENT ON WATER SUPPLY & SEWERAGE
 [AT COST INDEX 505 IN 2014 (IInd HALF)]

(Total Cost in Rs.'000)

Sl.No	PARTICULARS	Total cost at CI 505	Remark
A	Colony Water Supply	0	
B	Colony Sewerage	0	
C	Industrial Water Supply	13714	App. A.8.3.3
D	Industrial Sewerage	10129	App. A.8.3.4
	GRAND TOTAL :	23843	

APPENDIX - A.3.3

STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT ON INDUSTRIAL WATER SUPPLY
[AT COST INDEX 505 IN 2014 (IInd HALF)]

SL NO.	PARTICULARS	Total quantity required	(Rate & Total Cost in Rs '000)	
			Unit Rate at CI 100 at Nagpur as on 01.01.92	Total Cost at CI 505
1	2	3	4	5
1	Boring of borewell 150mm dia., 100m deep with pump house and suitable drawal arrangement	2	115	1162
2	Raw water boosting pump set 7.5 HP (Submersible Type)	2	35	354
3	Raw water rising main:			
	i) 80 mm dia.	200	0.38	384
	ii) Add 7.5% for saddle, supports, valves, bends, etc.			29
4	Chlorinators	1	1.8	25
5	Ground water reservoir (kl)	60	3.9	1182
6	Clear water pump 5HP (Centrifugal type)	2	12	121
7	Clear water rising main:			
	i) 80 mm dia.	400	0.38	766
	ii) Add 7.5% for saddle, supports, valves, bends, etc.			58
8	RCC Overhead Tank (kl)	190	6.6	8333
9	Water Distribution Arrangement :			
	i) 80mm dia. CI Main	500	0.38	990
	ii) 50mm dia. Main	250	0.27	341
	iii) 40mm dia. Main	250	0.16	202
	iv) Add 7.5% for saddle, supports, valves, bends, etc.			113
10	Investigations for :			50
	a) Hydrogeological data			
	b) Raw water samples (Physico-chemical & bacteriological analysis)			
	sub - total			12082
11	Electrical Installation :			604
	a) Transformer, switchgear & switch room			
	b) Overhead line			
	c) Instruments, tools, etc.			
12	TOTAL			12686
13	Contingencies @ 3%			381
	Total			13067
14	Add Service tax @ 12.36% of 40% of value of work			647
	GRAND TOTAL			13714

PR OF PENGANGA OC

APPENDIX - A.8.3.4

STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT ON INDUSTRIAL SEWERAGE
[AT COST INDEX 505 IN 2014 (IInd HALF)]

(Rate & Total Cost in Rs.'000)

Sl.No.	PARTICULARS	Total quantity reqd	Unit Rate at Nagpur as on 01.01.92	Total cost at CI 505
1	2	3	4	5
A	COMBINED OPEN SURFACE DRAIN			
	i) 30x45 cm size (Length in mtrs)	840	0.34	1442
	ii) 60cmX 90cm (Length in mtrs)	1000	0.62	3131
B	Sewage disposal arrangement for service buildings	86756	5%	4338
	5% of total cost of Service Buildings			
C	Provision for Poor/BC soil for item-A @ 10%			457
	SUB-TOTAL (A+B+C)			9368
D	Contingencies 3%			283
	Total			9651
E	Add Service tax@ 12.36% of 40% of value of work.			478
	GRAND TOTAL			10129

APPENDIX-A.8.4

PROJECT REPORT FOR PENGANGA OC MINE
(AUGUST , 2014)
ESTIMATED CAPITAL INVESTMENT ON PR PREPARATION

(Amount in Rs.'000)

Sl. No.	Particulars	Capital Provision	Phasing of capital provision		
			I	II	III
1.					
	Preparation of Project report for Penganga OC Mine	41311	41311	0	0
	TOTAL	41311	41311		

APPENDIX-A.8.4a						
<u>STATEMENT SHOWING BREAKUP OF ESTIMATED PHASED</u>						
<u>CAPITAL INVESTMENT ON SCIENTIFIC RESEARCH</u>						
(Rupees in '000)						
SL.NO.	PARTICULARS	TOTAL AMOUNT	PHASING			
			YR III	YR IV	YR V	YR VI
1	SLOPE STABILITY	2000	200	600	600	700
2	HYDROGEOLOGY	1500	100	400	400	300
	TOTAL	3500	300	1000	1000	1000

APPENDIX A.9				
STATEMENT SHOWING ESTIMATED REVENUE EXPENSES CAPITALIZED DURING DEVELOPMENT PERIOD				
S.No.	PARTICULARS	YEAR I	YEAR II	TOTAL
1	Salaries & Wages	0	39370	39370
2	Stores	0	0	0
3	Power	0	0	0
4	Misc. Exp. Incl. W/D	0	0	0
5	HIRING OF HEMM	0	0	0
6	Interest	52279	106594	158873
7	Depreciation	65217	165667	230884
8	Total	117496	311631	429127
9	Less : Sale proceeds	0	1055500	0
10	Total(before writing off depreciation)	117496	-743869	-626373
11	Less Depreciation	65217	165667	230884
12	Net Total (Cash portion)	52279	-909536	-857257
13	OB Suspense(Cash Portion)	0	7267	7267
14	Total A9	52279	-902269	-849990

APPENDIX A.9.1				
ESTIMATED REVENUE EXPENDITURE CAPITALIZED DURING DEVELOPMENT PERIOD -COAL-COMMON				
S.No.	PARTICULARS	YEAR I	YEAR II	AMT. IN RS TOTAL
	TOP OB REMOVAL (Mm3) HIRING			
	PARTING REMOVAL (Mm3) HIRING			
1	Salaries & Wages	0	0	0
2	Stores	0	0	0
3	Power	0	0	0
4	Misc. Exp. Incl. W/D	0	0	0
5	HIRING OF HEMM	0	0	0
6	Interest	0	7267	7267
7	Depreciation	0	0	0
8	Total	0	7267	7267
9	Less OBR charged to coal	0	0	0
10	Deferred Revenue Exp.	0	7267	7267
11	Less Depreciation	0	0	0
12	OB Suspense(Cash Portion)	0	7267	7267

APPENDIX:A.9.2

ESTIMATED REVENUE EXPENDITURE CAPITALIZED DURING DEVELOPMENT PERIOD-OB-DRE								
(Amount in Rs.'000)								
Year	Capital balance at the beginning	Capital expenditure during the year	Expenses of rev. nature capitalised during the year	Sale proceeds of coal@ Rs1057.50/t	Net expenses during the year	Total capital expenditure for the year	Loan position of capital for the year	Interest on capital @ 11.5%
COAL								
I	0	1818413	0	0	1818413	1818413	454603	52279
II	1870692	982376	39370	1055500	-33754	1836938	926907	106594
OB								
I	0	0	0	0	0	0	0	0
II	0	252759	0	0	252759	252759	63190	7267

APPENDIX - B			
STATEMENT SHOWING JOBWISE/CATEGORYWISE ESTIMATED REQUIREMENT OF MANPOWER			
Coal (Mty) - 4.0			
Peak O.B(Mm ³ /Y) -16.84			
Average SR(m ³ /t) - 3.67			
Sl.No.	Designation	Cat./Scale	Strength
I. OB (Direct)			
1	Shovel Operator	A	8
2	Dozer Operator	B	7
3	Drill Operator	B	4
4	Dumper Operator	B	38
5	Mining Sirdar/Shot Firer	6724-10360	12
6	Drill Helper	I/II	4
7	Blasting Gang	I/II	10
8	General Mazdoor	I/II	4
Sub. Total I.			87
II. COAL			
II. (A) COAL (Direct)			
1	Surface Miner Operator	A	0
2	Drill Operator	B	0
3	Dozer Operator	B	0
4	Rear Dumper Operator	B	0
5	Mining Sirdar/Shot Firer	6724-10360	4
6	Blasting Gang	I/II	0
7	Surface Manpower Helper	I/II	0
8	General Mazdoor	I/II	0
9	Front end loader operator	B	0
Sub. Total II. (A)			4
II. (B) COAL LOADING UNIT			
1	Supdt. Engineer (E&M)	17500-22300	0
2	Executive Engineer (E&M)	13750-18700	0
3	Foreman Incharge (E&M)	7824-12054	1
4	Quality Control Despatch/Inspector	6219-9009	1
5	Feeder Breaker Operator/Crusher Operator	V/VI	0
6	Welder	V/VI	1
7	Conveyor Operator	V/VI	0
8	Loading Clerk	5896-8542	4
9	Mechanical Fitter	V/VI	2
10	Electrical Fitter	V/VI	0
11	Fitter Helper/Elect and Mech	II	4
12	Chute/Feeder Operator	IV/III	7
13	Shale Picker / General Mazdoor	I	2
14	Foreman		1
15	Weighbridge Clerk	5962-8644	4
16	M.T.K./LDC	6219-9009	4
Sub. Total II. (B)			31
TOTAL (II)			35
III. COMMON SERVICES			
A. Common HEMM Operation			
1	Shovel Operator	A	2
2	Crane Operator	C/D	3
3	Water Sprinkler Operator	B	3
4	Grader Operator	C	2
5	Diesel Bowser Operator	D	2
6	Mobile Maintenance Van	D	1
7	Tyre-handler Operator	C	2
8	Fire-fighting Truck Operator	B	2
Sub- Total III (A)			17

(ii)			
Sl.No.	Designation	Cat./Scale	Strength
<u>B. Excavation Equip. Maint. & Supervision</u>			
1	Dy. Chief Engineer (Excv)	18500-23900	1
2	Suptdg. Engineer (Excv)	17500-22300	
3	Sr.Executive Engineer(Excv)	16000-20800	1
4	Executive Engineer (Excv)	13750-18700	1
5	Engineer (Excv.)	10750-16750	1
6	Foreman Incharge (Excv)	7824-12054	1
7	Foreman (Excv.)	7824-12055	2
	<i>Sub-Total III(B)</i>		7
<u>C) Excavation Plant & Equipment Maintenance</u>			
1.	Mechanic Grade I	A	4
2.	Fitter Grade I	B	4
3	Fitter Grade II	C	4
4	Fitter Grade III	D	7
5	Electrician Grade III	D	2
6	Auto Electrician Grade III	C/D	5
7	Welder Grade I	B	1
8	Welder Grade II	C	1
9	Welder Grade III	D	0
10	Turner/Machinist Grade I	B	1
11	Turner/Machinist Grade II	C	0
12	Turner/Machinist Grade III	D	1
13	Washing Machine Operator	C	2
14	Carpenter	V	0
15	Crane Operator	D	0
16	Black Smith	V	1
17	Hammer Man	III	2
18	Helper/ Greaser	E	10
19	Mazdoor	I	11
	<i>Sub- Total III (C)</i>		56
<u>D. Electrical & Mech. Supervision</u>			
1	Dy. Chief Engineer (E&M)	18500-23900	0
2	Supdtg. Engineer (E&M)	17500-22300	1
3	Sr.Executive Engineer (E&M)	16000-20800	1
4	Executive Engineer (E&M)	13750-18700	0
5	Foreman Incharge(Elect.)	7824-12054	1
6	Electrical Supervisor	7824-12054	4
7	Foreman (Mech.)	7824-12054	2
8	Foreman (E& T)	7824-12054	1
	<i>Sub- Total III (D)</i>		10

(ii)			
Sl.No.	Designation	Cat./Scale	Strength
<u>E) Electrical & Mechanical Maintenance</u>			
1	Mechanical Fitter	IV/V/VI	3
2	Fitter (Elect)	IV/V/VI	4
3	Pump Attendant	III	4
4	Tyndal/Tyndal Jamadar	IV/V	0
5	Turner	IV/V	0
6	Cable Joiner	IV/V	0
7	Electrician	IV/V	4
8	Helper Electrician	V	4
9	Machinist	IV/V	0
10	S/S Attendant	III	4
11	Electrical/Mechanical Fitter Helper	II	4
12	Mazdoor	I	5
Sub- Total III(E)			32
<u>F. Mining Operations & Supervision</u>			
1	Manager	17500-22300	1
2	Asst. Coliery Manager	16000-20800	1
3	Blasting Officer	16000-20800	1
4	Under Manager & Blasting Officer	10750-16750	4
5	Safety Officer	13750-18700	1
6	Overman	4652-7802	4
7	Overman (Blasting)	3998-6528	1
8	Typist/Clerk	3698-5878	3
Sub- Total III (F)			16
<u>G. Project Office</u>			
1	DyCME	18500-23900	1
2	Personnel Manager	17500-22301	0
3	Finance Manager	17500-22302	1
4	Purchase Officer	10750-16750	0
5	Finance Officer	10750-18750	0
6	Cashier	3998-6528	1
7	Accountant	6724-10360	1
8	Accounts Clerk	7824-12054	2
9	LDC / Typist	6724-10360	1
10	Driver (H MV)	6724-10360	2
11	Peon	5691-8247	1
12	Wireless Operator	III/IV	4
13	Driver (LMV)	6219-9009	2
Sub- Total . III (G)			16
<u>H. Stores and Purchase</u>			
1	Sr. Store keeper/Store keeper	7824-12054	1
2	Store Mazdoor	I/II	1
3	Magazine Clerk	6219-9009	2
Sub- Total III(H)			4

(iv)			
Sl.No.	Designation	Cat./Scale	Strength
I. Security			
1	Security Officer	10750-16750	1
2	Armed Guard	5896-8642	2
3	Watchman/Security Guard	5691-8247	0
	Sub-Total III(I)		3
J. Chemical Laboratory			
1	Lab Assistant/Sampling Supervisor	6219-9009	1
2	Sampling Mazdoor	I/II	1
	Sub-Total III(J)		2
K. Medical & Sanitation			
1	Medical Officer	10750-16750	1
2	Dresser/Compounder	5962-8644	1
3	Nurse	5962-8644	1
4	Sweeper	I	1
	Sub-Total III(K)		4
L. Civil Works			
1	Superintending Engineer	17500-22300	1
2	Overseer (Civil)	7824-12054	1
3	LDC/Typist	6219-9009	1
4	Carpenter	V	
5	Mason	V	
6	Plumber	IV	
7	Electrician	IV	
8	Cook	II	0
9	Helper	I/II	0
10	Pump Khalasi/Valveman	III	2
	Sub-Total III(L)		5
M. Welfare			
1	Welfare Officer	10750-16750	1
2	LDC/Typist	6219-9009	1
3	Peon	I	1
	Sub-Total III(M)		3
N. Mine Planning & Surveying			
1	Survey Officer	10750-16750	1
2	Surveyor/Asstt. Surveyor	7260-11184	1
3	Draftsman	6219-9009	2
4	Chainman	6219-9009	2
5	Survey Mazdoor	I	2
	Sub-Total III(N)		8
	Sub-Total III (A to N)		183

(v)			
Sl.No.	Designation	Cat./Scale	Strength
	IV LAND RECLAMATION/ENVIRONMENT		
1	Reclamation Supervisor		1
2	Dozer Operator	B	
3	Water Tanker Operator	C	
4	General Mazdoor	I	1
	Sub-Total(IV)		2
	Grand Total (I to IV)		307

APPENDIX-B. 1
STATEMENT SHOWING ESTIMATED SALARIES & BENIFITS

				COAL in Mt.	4.00
				OB in Mm3	16.84
SLNO	SCALE/GRADE	STRENGTH	WAGES	BENEFITS	TOTAL
<u>COAL :</u>					
1	MR-F	4.00	1823968	758460	2582428
2	MR-E	4.00	1845748	766256	2612004
3	MR-D	5.00	2404605	992695	3397300
4	MR-C	4.00	2212164	897420	3109584
5	MR-B	2.00	1286942	513458	1800400
6	I	2.00	862112	357482	1219594
7	II	7.00	3085425	1275533	4360958
8	III	4.00	1816232	747888	2564120
9	V	1.00	482700	197221	679921
10	VI	2.00	1069690	431758	1501448
SUB TOTAL :		35.00	16889586.00	6938171.00	23827757.00

APPENDIX-B. 1

STATEMENT SHOWING ESTIMATED SALARIES & BENIFITS

				COAL in Mt.	4.00
				OB in Mm3	16.84
SLNO	SCALE/GRADE	STRENGTH	WAGES	BENEFITS	TOTAL
O.B. :					
=====					
1	MR-C	12.00	6636492	2692260	9328752
2	I	9.00	3879504	1608669	5488173
3	II	9.00	3966975	1639971	5606946
4	B	49.00	27700190	11112269	38812459
5	A	8.00	4801512	1914088	6715600
SUB TOTAL :		87.00	46984673.00	18967257.00	65951930.00

APPENDIX-B. 1
STATEMENT SHOWING ESTIMATED SALARIES & BENIFITS

			COAL in Mt.	4.00			
			OB in Mm3	16.84			
SLNO	SCALE/GRADE	STRENGTH	WAGES	BENEFITS	TOTAL		
COMMON :							
1	20600-46500	9.00	8879841	4868883	13846374	97650.00	- N.P.A.
2	24900-50500	2.00	2180820	1171610	3352430		
3	29100-54500	4.00	4704144	2491160	7195304		
4	32900-58000	4.00	4807904	2535976	7343880		
5	36600-62000	2.00	2563726	1337000	3923046	22320.00	- C.B.A.
6	MR-II	1.00	440244	183975	624219		
7	MR-F	2.00	911984	379230	1291214		
8	MR-E	2.00	922674	383128	1306002		
9	MR-D	14.00	6732894	2779546	9512440		
10	MR-C	6.00	3318246	1346130	4664376		
11	MR-B	1.00	597028	240104	837132		

APPENDIX-B. 1
STATEMENT SHOWING ESTIMATED SALARIES & BENIFITS

				COAL in Mt.	4.00
				OB in Mm3	16.84
SLNO	SCALE/GRADE	STRENGTH	WAGES	BENEFITS	TOTAL
12	MR-A	19.00	12225949	4877851	17103800
13	I	20.00	8621120	3574820	12195940
14	II	6.00	2644650	1093314	3737964
15	III	14.00	6356812	2617608	8974420
16	IV	6.00	2780490	1141920	3922410
17	V	9.00	4344300	1774989	6119289
18	VI	3.00	1604535	647637	2252172
19	E	10.00	4596830	1889850	6486680
20	D	18.00	8853012	3608802	12461814
21	C	14.00	7576702	3054114	10630816
22	B	11.00	6218410	2494591	8713001
23	A	6.00	3601134	1435566	5036700

APPENDIX-B. 1

STATEMENT SHOWING ESTIMATED SALARIES & BENIFITS

				COAL in Mt.	4.00
				OB in Mm3	16.84
SLNO	SCALE/GRADE	STRENGTH	WAGES	BENEFITS	TOTAL
SUB TOTAL :		183.00	105483649	45927804	151531423

APPENDIX-B. 1

STATEMENT SHOWING ESTIMATED SALARIES & BENIFITS

				COAL in Mt.	4.00
				OB in Mm3	16.84
SINO	SCALE/GRADE	STRENGTH	WAGES	BENEFITS	TOTAL
LAND RECLAMATION :					
=====					
1	MR-A	1.00	643471	256729	900200
2	I	1.00	431056	178741	609797
SUB TOTAL :		2.00	1074527.00	435470.00	1509997.00

APPENDIX-B.1

STATEMENT SHOWING ESTIMATED SALARIES & BENIFITS

COAL in Mt. 4.00
 OB in Mn3 16.64

GROUP NAME	STRENGTH	MANSHIFT	TOTAL WAGES & BENEFITS(in Rs.)	E.M.S in Rs.	O.M.S. in To.	WAGES & SALARIES COST/T (in Rs.)
COAL	35.00	9240	23827757	2578.76	432.900	5.96
OVERBURDEN	97.00	22968	65951930	2871.47	677.029	4.24
COMMON	183.00	48312	151531423	3136.52	82.795	37.68
LAND RECLAMATION	2.00	528	1509997	2859.84		0.38
OVERALL	307.00	81048	242821107	2996.02	49.353	60.71

* O.M.S. for OVERBURDEN is in Cu.M.

* WAGES & SALARIES FOR OVERBURDEN is in RS/Cu.M

E.M.S. = WAGE+BENEFITS/MANSHIFT O.M.S = PROD.PER.T./MANSHIFT WAGES & SALARIES = TOTAL WAG & BEN/PROD. (PER T.)

RATES :- REF NO. GM(F)/PROJECT COSTING/3002 DT.07.08.2014

APPENDIX-B.1

STATEMENT SHOWING ESTIMATED SALARIES & BENIFITS

COAL in Mt. 4.00
OB in Ma3 16.84

(REVISED OMS AS PER CIL - OM CIL:C-5B:MP/QWS/347/ DT. 07/04/1987)

APPENDIX-B.1

GROUP NAME	STRENGTH	MANSHIFT	TOTAL WAGES & BENEFITS (in Rs.)	E.M.S in Rs.	O.M.S. in Te.	WAGES & SALARIES COST/T (in Rs.)
COAL	35.00	9240	23827757		432.900	
OVERBURDEN	87.00	22968	65951930		677.029	
COMMON	168.00	44352	151531423		90.188	
LAND RECLAMATION	2.00	528	1509997			
OVERALL	292.00	77088	242821107		51.989	

* O.M.S. for OVERBURDEN is in Cu.M.

* WAGES & SALARIES FOR OVERBURDEN is in RS/Cu.M

RATES :- REF NO. GM(F)/PROJECT COSTING/3002 DT.07.08.2014

APPENDIX-B.1

STATEMENT SHOWING ESTIMATED SALARIES & BENIFITS

				COAL in Mt.		4.00							
				OB in Mm3		15.84							

MAN POWER CLASIFICATION

1.	UNSKILLED	(I)	32.00
2.	SEMI SKILLED	(E,II,III)	50.00
3.	SKILLED	(B,C,D,IV,V)	108.00
4.	HIGHLY SKILLED	(VI,A, Spl.)	19.00
5.	MONTHLY RATED STAFF		77.00
6.	OFFICERS		21.00

APPENDIX - C

Coal (Mty): 4.0

Revenue Life (Yrs.) : 14

PR FOR PENGANGA OC(August, 2014)

ESTIMATED COST OF PRODUCTION PER TONNE OF COAL AT 100% CAPACITY UTILISATION (Including cost of EMP)

	OMS (t) (Including welfare manpower)	49.35		
	OMS (t) (excluding welfare manpower)	51.889		
	EMS (Rs.)(Based on CMPDI norms)	2982.37		
Sl. No.	Particulars	Total Cost/t (Rs.)	Variable Cost/t (Rs.)	Fixed Cost/t (Rs.)
1	Wages & Salaries	58.58	0.00	58.58
2	Stores	111.64	65.04	46.60
3	Power	17.05	2.84	14.21
4	Env. Pollution Control Exp.	6.00	0.00	6.00
5	Misc. Exp. Incl. W.D.	35.52	30.30	5.22
6	Mine Closure Expenditure	22.57	0.00	22.57
7	Corporate Social Responsibility	5.00	5.00	0.00
8	Administrative Charges	160.07	0.00	160.07
9	Hiring of Equipment	294.51	294.51	0.00
10	Depreciation	85.53	0.00	85.53
11	Interest on Working Capital '@ 14.5%	34.36	19.22	15.14
12	Investment on loan capital @11.5%	26.00	0.00	26.00
	TOTAL	856.82	416.91	439.91

			APPENDIX-C-1
		Coal (Mty) : 4.0	
	Revenue	Life (Yrs.) : 14	
PR FOR PENGANGA OC(August,2014)			
COST & PROFITABILITY AT DIFFERENT LEVEL OF PRODUCTION			
Sl.No.	Levels of Production	85%	100%
1	Production in (Mt)	3.4000	4.0000
2	Variable Cost (Rs./t)	416.91	416.91
3	Fixed Cost (Rs./t)	517.54	439.91
4	Total Cost (Rs./t)	934.45	856.82
5	Present average selling price (Rs.) (FOR POWER SECTOR)	1057.50	1057.50
6	Present average selling price (Rs.) (FOR NON-POWER SECTOR)	1399.50	1399.50
7	Profit (Rs./t) (FOR POWER SECTOR)	123.05	200.68
8	Profit (Rs./t) (FOR NON-POWER SECTOR)	465.05	542.68
9	IRR (%) (FOR POWER SECTOR)	12.21	21.03
10	IRR (%) (FOR NON-POWER SECTOR)	36.31	46.69

Partial Hiring Option

JOB NO : 4101791

		APPENDIX-C-2
		Coal (Mty) : 4.00
		Revenue Life (Yrs.) : 14
ANNUAL EXPENDITURE FOR EMP & IMPACT OF COST/TONNE ON COAL		
EMP COST = Rs.6.00 PER TONNE		
YEARS	COAL PRODN.(Mt)	Expenditure (Rs. in lakhs)
1	-	
2	1.00	60.00
3	2.00	120.00
4	3.00	180.00
5	4.00	240.00
6	4.00	240.00
7	4.00	240.00
8	4.00	240.00
9	4.00	240.00
10	4.00	240.00
11	4.00	240.00
12	3.00	180.00
13	3.00	180.00
14	2.50	150.00
15	1.56	93.60

APPENDIX-C-3

Coal (Mty) : 4.0

Revenue Life (Yrs.) : 14

SENSITIVITY ANALYSIS FOR PROFIT/LOSS AT DIFFERENT LEVELS OF CAPACITY UTILISATION

SENSITIVITY ANALYSIS OF FIRR AND FNPV ON DIFFERENT PARAMETERS

I. No.	VARIABLE PARAMETERS	I.R.R. OF THE PROJECT FOR PARAMETERS BY					
		0%	5%	10%	15%	20%	25%
1	Increase in capital investment	21.03%	19.81%	18.67%	17.62%	16.63%	15.70%
2	Increase in wages cost	21.03%	20.78%	20.54%	20.29%	20.04%	19.99%
3	Increase in stores cost	21.03%	20.51%	19.99%	19.46%	18.94%	18.41%
4	Increase in operating cost	21.03%	17.68%	14.18%	10.48%	6.54%	2.29%
5	Decrease in capacity utilisation	21.03%	18.22%	15.29%	12.21%	8.94%	5.44%
6	Decrease in sales realisation through grade slippage	21.03%	18.25%	15.35%	12.30%	9.07%	5.62%
7	Impact of decrease in working capital interest rate from (%) 14.50	21.03%	21.09%	21.15%	21.21%	21.27%	21.33%

IRR OF THE PROJECT AT 100% & 98% LEVEL OF PRODUCTION AND STATEMENT OF REVENUE CASH OUTFLOW AT 100% & 98% LEVEL OF PRODUCTION													
APPENDIX - D1 B1 D2 B2													
Rm,000													
YEAR	PRODH (MTY)	INITIAL CAP	REPL CAP	SALV VAL	WAGES	STORES	POWER	EMP	ADMIN O/H	MISC EXPF	HR/HO EQUIP.	WC R/T	TOTAL
SALES REV	NET FLOW (100%)	NET FLOW (98%)											
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.00	1818413	0	0	0	0	0	0	0	0	0	0	0
2	1.00	1272194	0	0	35370	213361	47560	6000	190070	94480	301110	44330	1818413
3	2.00	819137	0	0	94480	313949	59409	13000	320140	30806	836540	70740	2233364
4	3.00	409617	0	0	188970	383240	53209	18000	480210	53346	1167630	106000	2722897
5	4.00	59834	0	0	214850	402160	56090	24000	640280	56000	198440	128700	2848864
6	4.00	36764	0	0	241720	404101	59090	24000	640280	58000	198440	131150	2925305
7	4.00	0	0	0	241720	405294	59090	24000	640280	61740	149840	142960	3091814
8	4.00	0	0	0	241720	405294	59090	24000	640280	64440	149840	142960	3099594
9	4.00	0	0	0	241720	405294	59090	24000	640280	69000	149840	142960	3145777
10	4.00	0	0	0	241720	405294	59090	24000	640280	71480	149840	142960	3196359
11	4.00	0	0	0	241720	405294	59090	24000	640280	75040	149840	142960	3251711
12	3.96	37046	0	0	178745	366866	43350	18000	480210	79810	994010	111390	2499938
13	3.96	0	0	0	178745	376727	53250	18000	480210	82740	854340	104400	2238634
14	2.90	0	0	0	147225	214543	51825	18000	480210	86875	365000	69975	1429218
15	1.94	0	0	0	54	181518	49166	3500	245709	91229	170020	42201	873873
NPV	44.0000	440000	297118	34047	200062	491874	701231	254380	705284	894354	1207080	1513935	3750229
130% PRICE		160.77	6.74	0.55	58.58	111.64	17.05	6.00	160.87	22.87	40.50	34.39	800.26
													21.63%

ESTIMATED CAPITAL INVESTMENT ON THE BASIS OF COMPLETION COST										APPENDIX -F
PARTICULARS	TOTAL	EXISTING WDV AS ON	I YR (2014-15)	II YR (2015-16)	III YR (2016-17)	IV YR (2017-18)	V YR (2018-19)	VI YR (2019-20)	VII YR (2020-21)	VIII YR (2021-22)
LAND	2839947	0	1830540	443996	268608	296803	0	0	0	0
SERVICE BLDGS	122712	0	0	21359	41304	45639	14410	0	0	0
RES BLDGS	6826	0	0	1107	1223	1352	1494	1650	0	0
TOTAL BLDGS	129538	0	0	22466	42527	46991	15904	1650	0	0
PLANT & MACH	1030239	0	0	483385	347402	140978	28525	29951	0	0
FUR/FITT	4013	0	0	1708	1888	417	0	0	0	0
RAILWAY SIDING	0	0	0	0	0	0	0	0	0	0
VEHICLES	3166	0	0	3166	0	0	0	0	0	0
PROSP/BOR	3566	0	0	1993	1573	0	0	0	0	0
CAP O/L INMINES	745861	0	1031	416893	267673	7648	32669	19957	0	0
ROADS & CULVERTS	88915	0	0	2506	45057	41352	0	0	0	0
WATER SUP & S/D	30598	0	0	6035	11669	12894	0	0	0	0
PR PREP COST	42577	0	42577	0	0	0	0	0	0	0
ENV POLL CONTROL	13463	0	0	0	1636	3894	3688	4245	0	0
TOTAL DEVELOP	921414	0	43608	425434	326035	65788	36347	24202	0	0
TOTAL UPTO A08	4931883	0	1874148	1382148	988033	550975	80776	55803	0	0
NET REV EXP CAP	53881	0	53881	0						
TOTAL CAPITAL	4985764	0	1928029	1382148	988033	550975	80776	55803	0	0

Partial Hiring Option

APPENDIX-G							
ESTIMATED PHASED CAPITAL INVESTMENT ON ENVIRONMENTAL PROTECTION MEASURES							
(Amount in Rs.'000)							
Sl.NO	Particulars	Amount	YR-III	YR-IV	YR-V	YR-VI	YR-VII
1.	Sedimentation pond for treatment of mine waste water	2000		500	1000	500	
2.	Effluent treatment plant for treatment of workshop effluent	1000				1000	
3.	Base line environmental data generation and scientific studies related to environment	700					700
4.	Dust suppression Arrangement at haul road, stockyard permanent roads etc	1000		500			500
5.	Land reclamation measures including land use Mapping through Remote Sencing	800			500		300
	TOTAL	5500		1000	1500	1500	1500