

TRANSPORTATION

METHOD OF MINING

The proposed Hindustan Lalpeth (Expansion) Opencast Mine is extension of existing Hindustan Lalpeth Opencast Mine, which is presently being worked with shovel – Dumper combination. It is proposed to work the extension area also with shovel – Dumper combination. The target production has envisaged as 1.0 Mty. Horizontal Slicing method is recommended for the proposed PR.

GEO-MINING CHARACTERISTICS

Hindustan Lalpeth OC block is narrow shaped area lying between one major fault and sub crop. Coal is being extracted from existing Hindustan Lalpeth OC mine . Two major faults forms the boundary of Hindustan Lalpeth OC.

MINE PARAMETERS

The Geo- Mining parameters of the proposed Hindustan Lalpeth (Expansion) OC Mine (including existing quarry) is given below :-

Sl. No.	Particulars	Expansion OC including existing mine area
1	Area of quarry	
(a)	Floor Area (Ha.)	84.19
(b)	Surface Area (Ha.)	146.77
2	Quarry Depth	
(a)	Initial (m)	40
(b)	Final (m)	175
3	Average Gradient of seam	1 in 4, N 60 ⁰ 55'54" E
4	Composite seam thickness	
(a)	Minimum (m)	13.15
(b)	Maximum (m)	19.30
(c)	Average (m)	16.00
5	Strike length (m)	2310
6	Width on surface – (Dip Rise)	
(a)	Minimum (m)	425
(b)	Maximum (m)	880
7	Coal quality (GCV Range) (Kcal/Kg)	4091 - 4514
	Overall Grade /GCV	G-10 (4309 Kcal/Kg)
8	Mineable / Extractable Reserves (Mt)	5.87
(a)	Cut – I	2.18
(b)	Cut - II	1.89
(c)	Cut - III	1.80
9	Total OB (Mm3)	58.003
(a)	Insitu OB (M.m3) (Sector –I : 16.401) + (Sector-II : 16.432) +	44.153

	(Sector-III : 11.320)	
(b)	Rehandling OB (M.m3)	13.85
10	Average stripping ratio (m3/t)	
	(a) Without Rehandling	7.522
	(b) With Rehandling	9.881
11	Total OB Dump	58.003 * (as on 01.04.2015)
(a)	Internal dump (M.m3)	48.003 * (as on 01.04.2015)
(b)	External Dump (M.m3)	10.00
* : 4.799 Mm3 of OB is scheduled to be removed in the existing mine during 2013 – 14 & 2014-15 which will be dumped internally in the existing northern side de-coaled void of quarry. The total OB dump capacity available as on 01.04.2014 will be 58.003 Mm3 (48.003Mm3 in internal dump and 10.00Mm3 in external dump.		

CALENDAR PROGRAMME OF EXCAVATION :-

The calendar program of excavation considering mine capacity per year is as follows :-

YEAR	COAL PROD. (M.Te.) Deptt.	OB TO BE REMOVED (Mm3)				System Capacity (Dept+ Hiring)	
		Deptt.	Contractual.		Total. (Deptt. + Hiring)		
		Top OB	Rehandling	Top OB			TOTAL
YEAR - I	0.65	2.044	3.820	2.980	6.800	8.844	3.514
YEAR - II	0.65	2.044	3.820	2.780	6.600	8.644	3.701
YEAR - III	0.65	2.103	3.513	2.787	6.300	8.403	3.890
YEAR - IV	0.70	2.055	2.697	3.703	6.400	8.455	3.832
YEAR - V	1.00	1.819	0	6.900	6.900	8.719	3.677
YEAR - VI	1.00	1.765	0	5.600	5.600	7.365	3.308
YEAR - VII	1.00	1.711	0	4.600	4.600	6.311	3.140
YEAR - VIII	0.22	1.262	0	0	0	1.262	3.060
TOTAL	5.87	14.803	13.850	29.350	43.200	58.003	

Year	Coal (M.te)		Programmed OB (M.m ³)			
	Yearly	Cumulative	Departmental	Hiring	Total Yearly	Cumulative
I	0.65	0.65	2.044	6.800	8.844	8.844
II	0.65	1.30	2.044	6.600	8.644	17.488
III	0.65	1.95	2.103	6.300	8.403	25.891
IV	0.7	2.65	2.055	6.400	8.455	34.346
V	1	3.65	1.819	6.900	8.719	43.065
VI	1	4.65	1.765	5.600	7.365	50.430
VII	1	5.65	1.711	4.600	6.311	56.741

VIII	0.22	5.87	1.262	0	1.262	58.003
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DUMPING PLAN FOR OVERBURDEN :-

Since there is hardly any space available in the adjoining area of the proposed Hindustan Lalpeth (Expansion) OC mine, planning of the proposed has been done to ensure maximum internal dumping to utilize the northern side de-coaled void of existing quarry with heightening upto 60-90m above surface level. Out of total 58.003 Mm³ OB, only 10.00Mm³ is required to be dumped externally.

YEAR WISE EXTERNAL & INTERNA DUMPING & STAGE PLAN

Year	Total Overburden (M.m ³)		External Dump (M.m ³)		Internal Dump (M.m ³)	
	Yearly	Cumulative	Yearly	Cumulative	Yearly	Cumulative
I	8.844	8.844	2.790	2.790	6.054	6.054
II	8.644	17.488	0.000	2.790	8.644	14.698
III	8.403	25.891	0.000	2.790	8.403	23.101
IV	8.455	34.346	0.000	2.790	8.455	31.556
V	8.719	43.065	4.253	7.043	4.466	36.022
VI	7.365	50.430	1.017	8.060	6.348	42.370
VII	6.311	56.741	1.820	9.880	4.491	46.861
VIII	1.262	58.003	0.120	10.000	1.142	48.003

SEQUENCE OF MINING :-

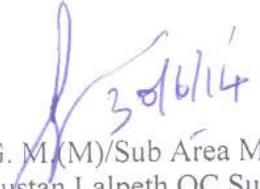
The proposed Hindustan Lalpeth (Expansion) OC Mine lies in the dip side of southern part of existing Hindustan Lalpeth OC Mine and this area has been divided in to three sectors/Cuts namely Cut – I, Cut – II & Cut – III from rise to dip. At present, the entire southern part of existing quarry is completely backfilled and heightened up to 30 – 40m above surface level. Thus, to extract the coal reserves from the expansion area, the rise side backfilled OB will have to be re-handled.

Presently, the existing Hindustan Lalpeth OC Mine is being worked in the central part near dip side PR/Scheme limit and haul road to access the working area lies in the northern part of the quarry. However, in the proposed Hindustan Lalpeth (Expansion) OC Mine, internal dumping has been proposed in the northern part of the quarry where mine has reached its dip side limit up to fault F4-F4. There is hardly any space available near the mine for external dumping and therefore, it is envisaged in this Hindustan Lalpeth (Expansion) OC Mine PR to accommodate maximum OB dumping in the northern side decoaled void of the quarry and to merge it with the adjoining External dump and heighten it about 60-90m above surface. Therefore, the present haul road in the northern part of the quarry to access the dip side area can not be maintained because of the above internal dumping.

It is, therefore, proposed in this PR of Hindustan Lalpeth (Expansion) OC Mine to make another haul road in the southern side of the quarry after re-handling of backfilled OB. The re-handled OB will be dumped partly in external dump and partly in the de-coaled void of northern side quarry.

The rehandling of backfilled OB and construction of new haul road in the southern side will take time and during this period the mine may be worked with existing haul road and Cut – I of the expansion area will be extracted from northern end. The haul road will be completed and entire rehandling of backfilled OB will be done in the first 4 years during complete extraction of Cut – I. Cut-II of the expansion area will be worked from 4th year to 6th year and thereafter last Cut – III will be worked from 6th year to 8th year.


30/06/2014
Sr. Manager (M)/Manager
Hindustan Lalpeth OC Mine
Chandrapur Area, WCL.


30/6/14
Dy. G. M. (M)/Sub Area Manager
Hindustan Lalpeth OC Sub Area
Chandrapur Area, WCL

