

# **MINING PLAN**

**OF**

## **DAMUA UG**

**&**

## **DAMUA (OC PATCHES)**

**FOR**

**RENEWAL OF COAL MINING LEASE  
MINING LEASES NO. 1, 2, 3, 4 & 29)**

**UNDER RULE 22 (3) OF MINERAL**

**CONCESSION RULES 1960**

**DISTRICT - CHINDWARA,**

**MADHYAPRADESH**

## **KANHAN AREA**



### **WESTERN COALFIELDS LIMITED**

(A Subsidiary of Coal India Limited)

Coal Estate, Civil Lines,

Nagpur - 440001

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**MINING PLAN  
OF  
DAMUA UG  
&  
DAMUA OC PATCHES  
OF  
KANHHAN AREA**

**FOR RENEWAL OF MINING LEASE NO. 1, 2, 3, 4 & 29**

Mouza	Area Ha	Date of submission of Form J application for renewal of lease	Area falling within mine boundary of Damua Colliery 'Ha'	Name of Sub-Lease	Remarks
<b>MCR LEASE NO 1 OF KANHHAN AREA</b>					
Rakhikol	410.918	12.07.2002	12.760	Sub-Lease No. - 1 A	Partly in Damua colliery, balance area in Rakhikol Colliery
Sub - total	410.918		12.760		
<b>MCR LEASE NO 2 OF KANHHAN AREA</b>					
Kalichhapar	487.500	12.07.2002	304.077	Sub-Lease No. - 2 A	Partly in Damua colliery, while balance area in Nandan & Rakhikol Colliery.
Sub - total	487.500		304.077		
<b>MCR LEASE NO 3 OF KANHHAN AREA</b>					
Damua	238.650	12.07.2002	238.650	MCR-3 (Full Lease)	Fully exist within Damua Colliery
Sub - total	238.650		238.650		
<b>MCR LEASE NO 4 OF KANHHAN AREA</b>					
Nandora	39.421	12.07.2002	39.421	MCR - 4 (Full Lease)	Fully exist within Damua Colliery
Ghorawari Kalan	17.235	12.07.2002	17.235	MCR - 4 (Full Lease)	Fully exist within Damua Colliery
Sub - total	56.656		56.656		
<b>MCR LEASE NO 29 OF KANHHAN AREA</b>					
Piparia	363.828	06.03.1997	--	--	Exist in Nandan I & II Colliery
Chikatbarri	345.876	06.03.1997	--	--	Exist in Nandan I & II Colliery
Bhakra	496.326	06.03.1997	207.612	Sub-Lease No - 2 9C (ii)	Partly in Damua colliery, While balance area in Nandan Colliery & Bhakra Block
Nandna	264.355	06.03.1997	--	--	Exist in Nandan I & II Colliery & Bhakra Block
Dhau	1341.036	06.03.1997			Exist in Nandan I & II Colliery & Rakhikol Colliery



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Mouza	Area Ha	Date of submission of Form J application for renewal of lease	Area falling within mine boundary of Damua Colliery 'Ha'	Name of Sub-Lease	Remarks
Nandora	7.447	06.03.1997	7.447	Sub-Lease No. - 29 F	Fully exist in Damua Colliery
Bhardagarh	217.046	06.03.1997	--	--	Exist in Rakhikol Colliery
Rakhikol	24.946	06.03.1997	--	--	Exist in Rakhikol Colliery
Ghorawari Kalan	608.090	06.03.1997	186.502	Sub-Lease No. - 29 I (i)	Partly in Damua colliery. While balance area in Ghorawari Colliery & Bhakra Block.
Sub - total	3668.862		401.561		
<b>Grand Total</b>	<b>4862.586</b>		<b>1013.704</b>		

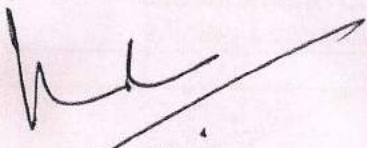


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**MINING PLAN**  
**FOR RENEWAL OF MINING LEASES FOR**  
**DAMUA COLLIERY**  
**(UG & OC)**

**INDEX**

CHAPTER	PARTICULARS	PAGE NO.
I	INTRODUCTION	1-11
II	GENERAL INFORMATION	12-13
III	EXPLORATION, SURVEYING AND GEOLOGY	14-35
IV	GEOLOGICAL RESERVE AND EXTRACTABLE RESERVE	36-38
V	MINE TECHNOLOGY AND COAL PRODUCTION PROJECTION FOR 20 YEARS	39-41
VI	MARKETING, BENEFICIATION AND DESPATCH OF COAL	42
VII	INFRASTRUCTURE FACILITIES	43-44
VIII	PROJECT IMPLEMENTATION	45
IX	ENVIRONMENTAL IMPACT ASSESSMENT / ENVIRONMENT MANAGEMENT PLAN	46-75
X	ENVIRONMENTAL MONITORING REPORT	76-85
XI	PROGRESSIVE MINE CLOSURE PLAN	86-93
XII	MANPOWER	93A

  
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## MINING PLAN

### FOR RENEWAL OF MINING LEASES FOR DAMUA COLLIERY (UG & OC)

#### LIST OF ANNEXURES

Annexure No.	Particulars	Page No.
I	Summarised Data	94-95
II	Copy of receipt of application for renewal (Form J) of lease no 1, 2,3 & 4 submitted to District Mining Officer, Chhindwara, M.P.	96-100
III	Copy of grant of recognition to Shri.V.K.Machharial as Competent person to prepare Mining Plan for Coal/Lignite vide letter no. 34011/12/2005-CPAM dated 21 <sup>st</sup> July, 2005 of Government of India, Ministry of Coal, New Delhi.	101
IV	Grade Declaration 2007-08	102
V	Minutes of meeting of the presentation of Mining Plan of WCL held on 4 <sup>th</sup> December'05 vide letter no.34011 (31)/2005-CPAM, dated 07.12.2005 of Under Secretary of Govt of India, Ministry of Coal , New Delhi	103
VI A	Copy of original lease document MCR No. 2 & 3	104-122
VI B	Copy of original lease document MCR No. 4	123-140
VI C	Copy of original lease document MCR No. 29	141-178
VI D	Copy of original lease document MCR No. 1	179-187
VII	Power of Attorney	188-190
VIII	Letter no.13016/4/2003-CA dated 12.5.2003, Government of India, Ministry of Coal for renewal of Mining Lease of WCL before 2005.	191-192

  
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**MINING PLAN OF DAMUA COLLIERY  
(DAMUA UG & DAMUA OC PATCHES)**

**FOR RENEWAL OF MINING LEASE UNDER MINERAL CONCESSION RULE 1960**

PLAT ES	SUBJECT	R.F.
I	Location Plan of Kanhan Area	Not to scale
IA	Topographical plan showing the mining lease under MCR Lease & mine boundary of Damua Colliery (Damua UG & Damua OC Patches)	1:50000
II B	Key Plan showing the Mining Lease under MCR NO, 2&3,4 &29, and Mine boundary of Damua Colliery (Damua UG & Damua OC Patches)	Not to scale
III	Cadastral Plan showing the boundary of MCR Lease NO NO, 2&3,4 &29, and Mine boundary of Damua Colliery (Damua UG & Damua OC Patches)	1:10000
IV	Surface plan of Damua East Expansion	1:4000
VA	Surface Plan	1:4000
VB	Geological map Bhakra Block	1:4000
VI A	Graphic Litho logs of boreholes.NO PKDR-32 TO 36	1:500
VI B	Graphic Litho logs of B.H.NO PKDR 28,8,26,6,7,25,24,4,22,23	1:500
VI C	Graphic Litho logs of B.H.NO PKDR 20,18,19,14,12,13,17,16,11,10,9	1:500
VI D	Graphic Litho logs of boreholes.NO PKDR 3,5,2,30,1,29,21,15,27,31	1:500
VI E	Graphic Litho logs of boreholes.NO PKDM 3,8,9,10,15,16,22,26,34,36,37,39,40,45,PKDR10 PK-23	1:500
VI F	Graphic Litho logs of boreholes nos PKDM- 2,4,6,7,11,12,17,19,23,27,29,32,42,47,PK-9 IBM13	1:500
VI G	Graphic Litho logs of boreholes nos NO Bhakra Block NCKD- 21,30,37,45,48,61,63,67	1:500
VI H	Graphic Litho logs of boreholes nos Bhakra Block NCKD- 3,5,6,9,12,15,17	1:500
VI-I	Graphic Litho logs of boreholes nos Bhakra Block KB-1 TO 15	1:500
VI-J	Correlation chart Bhakra block	1:200
VI-K	Correlation chart Bhakra block PKTN-10,3,NCKD-71,PKDR1,10 KB- 8,3 PKDR-21,PKDM-18	1:200
VII A	Seam structure PKDR 32 TO36	1:50
VII B	Seam structure PKDR 21,15,27,31,28,26,29	1:50
VII C	Seam structure(PKDR 18,3,2,30,	1:50
VII D	Seam structure PKDR 14,13,16,11,10,6,9	1:50
VII E	Seam structure PKDR 6,7,24,4,22,23	1:50
VII F	Seam structure PKDM 4,6,7,11,12,17,23,27,32,42,PK-13 Damua East Expansion	1:50
VII G	Seam structure PKDM 3,8,10,15,16,22,26,34,37,40,45PKDR-10PK-23 Damua East Expansion	1:50
VII H	Seam structure PKDM KB-1,2, 35 Bhakra block	1:50
VII-I	Seam structure NCDC& GSI Boreholes PK-IA,NCKD-30, 5, 9, 48, 61, 15, 37, 45, 6, 12 Bhakra block	1:50
VII-J	Seam structure Bhakra block KB-6, 13, 15	1:50
VII-K	Seam structure Bhakra block KB- 8 To 12	1:50
VIII-A	Geological Cross Section Damua -Rakhikol - Kalichhapar Area	1:4000
VIII-B	Geological Cross Section Bhakra block	1:4000
IXA	Floor Contour Plan of Seam-IDamua-Rakhikol-Kalichhapar Area	1:4000
IXB	Floor Contour Plan of Seam-III Top Damua-Rakhikol-Kalichhapar Area	1:4000
IXB (i)	Floor Contour Plan of Seam-III Top Bhakra block	1:4000
XA	Seam Folio Plan III Top Damua-Rakhikol-Kalichhapar Area	1:4000

  
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**MINING PLAN OF DAMUA COLLIERY  
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FOR RENEWAL OF MINING LEASE UNDER MINERAL CONCESSION RULE 1960**

PLATES	SUBJECT	R.F.
XB	Seam Folio Plan Seam-I Damua-Rakhikol-Kalichhapar Area	1:4000
XC	Seam Folio Plan III Top Damua-East Area Area	1:4000
XD	Seam Folio Plan III Bot Damua-East Area Area	1:4000
XE	Seam Folio Plan Seam II Damua-East Area Area	1:4000
XF	Seam Folio Plan Damua-East Area Area	1:4000
XG	Seam Folio Plan Seam-III Top of Damua East UG Mine	1:4000
XH	Seam Folio Plan Seam-I of Damua EastUG Mine	1:4000
X-I	Seam Folio Plan III Top of Bhakra block	1:4000
XI	Working Plan of III TOP SEAM of Damua Colliery (Damua UG & Damua OC Patches) with 20 Years production programme	1:4000
XII	Progressive mine closure plan of of Damua Colliery (Damua UG & Damua OC Patches)	1:4000
XIII A	Certified Copy of Cadastral Plan of Original MCR lease no 29 of Mouza Dhau	16''=1Mile
XIII B	Certified Copy of Cadastral Plan of Original MCR lease no 29 of Mouza Chikatbari	16''=1Mile
XIII C	Certified Copy of Cadastral Plan of Original MCR lease no 29 of Mouza Piparia	16''=1Mile
XII ID	Certified Copy of Cadastral Plan of Original MCR lease no 29 of Mouza Nandana	16''=1Mile
XIII E	Certified Copy of Cadastral Plan of Original MCR lease no 29 of Mouza Bhakra	16''=1Mile
XIII F	Certified Copy of Cadastral Plan of Original MCR lease no 29 of Mouza Bhardagarh	16''=1Mile
XIII G	Copy of Cadastral Plan of lease No.29of Mouza Rakhikol	16''=1Mile
XIII H	Copy of Cadastral Plan of lease No.29of Mouza Nandora	16''=1Mile
XIII I	Copy of Cadastral Plan of lease No.29of Mouza Ghorawari Kalan	16''=1Mile
XIV	Copy of Cadastral Plan of lease No.1 Mouza Rakhikol	16''=1Mile
XV	Copy of Cadastral Plan of lease No.2 Mouza Kalichchapar	16''=1Mile
XVI	Copy of Cadastral Plan of lease No 3 of Mouza Damua	16''=1Mile
XVII	Copy of Cadastral Plan of lease No 4 Nandora & Ghorawarikalan	16''=1Mile

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# CHAPTER—I

## INTRODUCTION

### 1.0 INTRODUCTION :-

Western Coalfields Limited, a subsidiary of Coal India Limited, is a Public Sector undertaking, wholly owned by the Govt of India, engaged for extraction of Coal in Maharashtra and Madhya Pradesh. Application for Renewal of Mining lease of Coal has been submitted to District Mining Officer, Chhindwara for Mouza Rakhikol, Kalichhaopar, Damua, Nandora, Bhakra & Ghorawari Kalan Tahasil Junardeo, District Chhindwara (Madhya Pradesh).

### 1.1 DETAILS OF MINING LEASE :

Damua Colliery (Damua UG & Damua OC Patches) is situated in Pench & Kanhan Valley Coalfields within Chhindwara District of Madhya Pradesh. Five number of MCR Leases namely lease no – 1, 2, 3, 4 & 29 of Kanhan area falls within the Mine boundary of Damua colliery (UG & OC). These MCR leases were originally owned erstwhile coal companies during pre-nationalisation period and came under the public control after take over of non coking coal mines in May 1973. As a result, the control of mine was transferred to Coal Mines authority Ltd. MCR.

After formation of WCL on 01.11.1975, the mines automatically came under administrative control of WCL. As per Section 3 of the Coal India, Reg. of Transfer & validation Act 2000, these leases were deemed to be fresh mining lease w.e.f. 01.11.75 & these leases were valid up to 31.10.2005, i.e. a period of 30 years. As per clause 22(e) of Mineral Concession Rules 1960, all applications for renewal of Mining Leases are to be accompanied by a Mining Plan duly approved by Central Govt.

Thus, the renewal of Mining lease is presently being sought for a period of 20 years i.e from 01 11 2005 to 31 10 2025. The application for renewal of above said leases in the prescribed form 'J' has already been submitted to Distt. Mining Officer (Copy enclosed as Annexure - II).

The Mining Plan submitted by WCL was discussed in New Delhi, some corrections in general were pointed out. The corrections highlighted in the minutes of the meeting circulated vide letter no 34011/(31)/ 2005-CPAM dated 07<sup>th</sup> Dec'2005 have been incorporated in the Mining Plan being re-submitted by WCL (Copy enclosed as Annexure-V).

The MCR Leases no 3 & 4 of Kanhan area, fully falls within the mine boundary of Damua Colliery (Damua UG & Damua OC Patches), while MCR Lease no 1, 2 & 29 of Kanhan area partly falls within the mine boundary of Damua Colliery (Damua UG & Damua OC Patches)). The MCR leases falling partly within the Mine boundary of Damua Colliery (Damua UG & Damua OC Patches), exists in number of isolated areas, with the same identification no. in Pench & Kanhan Coalfields As such for the purpose of this Mining Plan, for renewal of MCR Lease, Lease no 1, 2 & 29 of Kanhan area has been further divided into number of Sub-leases on the basis of its existence within different mine boundary. The mine-wise details of the part leases are being given in the following table.

  
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( Figures in ' Ha' )

Lease No.	Total Area in 'Ha'	Damua Colliery (Damua UG & Damua OC Patches)	Nandan I & Nandan II Colliery	Ghorawari Colliery	Rakhikol Colliery	Bhakra Block
1	410.918	12.760	--	--	398.158	--
2	487.500	304.077	130.213	--	53.210	--
3	238.650	238.650	--	--	--	--
4	56.656	56.656	--	--	--	--
29	3668.862	401.561	2018.349	331.128	321.983	595.929
<b>Total</b>	<b>4862.586</b>	<b>1013.704</b>	<b>2148.562</b>	<b>331.128</b>	<b>773.351</b>	<b>595.929</b>

Details of MCR Leases within the mine boundary of Damua Colliery (Damua UG & Damua OC Patches) is given as under :-

#### Details of MCR Lease No 1 of Kanhan Area

MCR Lease no 1 of Kanhan Area, partly falling within the Mine boundary of Damua Colliery (Damua UG & Damua OC Patches), for the purpose of this Mining Plan for Lease Renewal Application, contains area admeasuring 12.760 Ha only, of Mouza - Rakhikol. As per Lease deed dated 23<sup>rd</sup> Sep 1969, the ownership of MCR Lease no 1 of Kanhan Area, falling within the mine boundary of Damua Colliery (Damua UG & Damua OC Patches), consisting Mouza/village Rakhikol, was granted to M/s Shiavax C. Combata, Bombay.

MCR Lease no 1 of Kanhan Area exist in Damua colliery as well as adjoining Rakhikol colliery of the same Area. As such for the purpose of this Mining Plan, for renewal of MCR Lease Area no 1 has been further divided into Sub-leases on the basis of its existence within different mine boundary. Based on this, name of sub-leases, with their respective mine, details of MCR lease no 1 of Kanhan Area is as follows:-

Name of Mouza/Village	Name of Sub -Lease	Name of mine	Area	
			Acre	Ha
Rakhikol	Sub-Lease No. - 1 A	Damua Colliery	31.517	12.760
	Sub-Lease No. - 1 B	Rakhikol Colliery	983.863	398.158
<b>Total (MCR Lease no - 1)</b>			<b>1015.380</b>	<b>410.918</b>

Rakhikol Village/ Mouza falls not only within Mine Boundary of Damua Colliery of Kanhan Area but also in the adjoining Rakhikol Colliery of the same Area. As such, it is not practically possible to bifurcate the schedule of land of MCR lease no - 1, falling within mine boundary Damua & Rakhikol colliery. The village-wise/Mouza-wise schedule of land for MCR lease no 1 is given as under :-

Name of village/ Mouza	Name of Sub - Lease	Area being applied for renewal of Mining Lease in 'Ha'			
		Private Land	Govt Land	Forest Land	Total
Rakhikol	Sub-Lease No - 1 A	35.461	367.302	8.155	410.918
	Sub-Lease No - 1 B				
<b>Total (MCR Lease no - 1)</b>		<b>35.461</b>	<b>367.302</b>	<b>8.155</b>	<b>410.918</b>

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### Details of MCR Lease No 4 of Kanhan Area

MCR Lease no 4 of Kanhan Area, falling within the Mine boundary of Damua Colliery, for the purpose of this Mining Plan for Lease Renewal Application, contains area admeasuring 56.656 Ha only, of Mouza – Nandora & Ghorawar Kalan. As per Lease deed dated 17<sup>th</sup> Jan 1970, the ownership of MCR Lease no 4 of Kanhan Area, falling within the mine boundary of Damua Colliery, consisting Mouza/village Nandora & Ghorawar Kalan, was granted to M/s Sri Tribhawan Das, S/o Sri Kalyanji Shukla of Ghorawari Kalan.

Nandora & Gorawari Kalan Village/Mouza falls entirely within Mine Boundary of Damua Colliery of Kanhan Area. The village-wise/Mouza-wise schedule of land for MCR lease no 4 of Kanhan Area, falling within the Mine Boundary of Damua Colliery is given as under :-

Name of village/ Mouza	Area being applied for renewal of Mining Lease in 'Ha'			
	Private Land	Govt Land	Forest Land	Total
<b>MCR Lease No – 4</b>				
Nandora	3.349	--	53.307	56.656
Ghorawari Kalan				
<b>Total (MCR Lease No – 4)</b>	<b>3.349</b>	<b>--</b>	<b>53.307</b>	<b>56.656</b>

MCR lease Area of Lease no – 4 vis-à-vis area being applied for renewal of lease through this application is given in the following table

Name of Village	As per original lease document			Area being applied for lease renewal 'Ha'
	In 'Acre	In 'Ha' (using conversion factor 2.471)	Remarks	
<b>MCR Lease No – 4</b>				
Nandora	97.410	39.421	Indicated in Plate No. – XVII	39.421
Ghorawari Kalan	42.590	17.235		17.235
<b>Total (MCR Lease No – 3)</b>	<b>140.000</b>	<b>56.656</b>		<b>56.656</b>

### Details of MCR Lease No 29 of Kanhan Area

MCR Lease no 29 of Kanhan Area, falling within the Mine boundary of Damua Colliery, for the purpose of this Mining Plan for Lease Renewal Application, contains area admeasuring 401.561 Ha only, of Mouza – Bhakra, Nandana & Ghorawari Kalan. As per Lease deed dated 16<sup>th</sup> June 1977, the ownership of MCR Lease no 29 of Kanhan Area, falling within the mine boundary of Damua Colliery, consisting Mouza/village Nandana, Ghorawari Kalan & Bhakra, was granted to M/s Western Coal Fields Ltd.


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MCR Lease no 29 of Kanhan Area exist in Damua colliery as well as adjoining Nandan colliery, Gorawari Colliery, Rakhikol Colliery & Bhakra Block of the same Area, with the same name in Pench & Kanhan Coalfields. As such for the purpose of this Mining Plan, for renewal of MCR Lease Area no. 29 has been further divided into Sub-leases on the basis of its existence within different mine boundary. Based on this, name of sub-leases, with their respective mine, details of MCR lease no 29 of Kanhan Area is as follows:-

Name of Mouza/Village	Name of Sub -Lease	Name of mine	Area	
			Acre	Ha
Piparia	Sub-Lease - 29 A	Nandan -I & II Colliery (UG)	899.018	363.828
Chikatbarri	Sub-Lease - 29 B		854.659	345.876
Bhakra	Sub-Lease - 29 C(i)		38.251	15.480
Nandana	Sub-Lease - 29 D(i)		79.368	32.120
Dhau	Sub-Lease - 29 E (i)		3116.041	1261.045
<b>Sub-Total (Nandan I &amp; II Colliery)</b>			<b>4987.337</b>	<b>2018.349</b>
Bhakra	Sub-Lease - 29 C(iii)	Bhakra Block	675.160	273.234
Nandana	Sub-Lease - 29 D(ii)		573.852	232.235
Ghorawari Kalan	Sub-Lease - 29 I(iii)		223.525	90.460
<b>Sub-Total (Bhakra Block)</b>			<b>1472.538</b>	<b>595.929</b>
Bhakra	Sub-Lease - 29 C(ii)	Damua colliery (UG&OC)	513.009	207.612
Nandora	Sub-Lease - 29 F		18.400	7.447
Ghorawari Kalan	Sub-Lease - 29-1 (i)		460.846	186.502
<b>Sub-Total (Damua Colliery)</b>			<b>992.256</b>	<b>401.561</b>
Dhau	Sub-Lease - 29 E(ii)	Rakhikol colliery	197.659	79.992
Rakhikol	Sub-Lease - 29 H		61.642	24.946
Bhardagarh	Sub-Lease - 29 G		536.320	217.046
<b>Sub-Total (Rakhikol Colliery)</b>			<b>795.621</b>	<b>321.983</b>
Ghorawari Kalan	Sub-Lease - 29 I(ii)	Ghorawari Colliery (Ghorawari OC Patches & Jharna UG)	818.217	331.128
<b>Sub-Total (Ghorawari Colliery ) (Ghorawari OC Patches &amp; Jharna UG)</b>			<b>818.217</b>	<b>331.128</b>
<b>Total (MCR Lease no - 29)</b>			<b>9065.97</b>	<b>3668.862</b>

Bhardagarh, Rakhikol, Nandora, Dhau, Gorawari Kala, Chikatbarri, Bhakra, Nandana & Piparia Village/ Mouza falls not within Mine Boundary of Damua Colliery of Kanhan Area but also in the adjoining Collieries of the same Area. As such, it is not practically possible to bifurcate the schedule of land of MCR lease no - 29, falling within mine boundary Damua & adjoining collieries. The village-wise/Mouza-wise schedule of land for MCR lease no 29 is given as under :-



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Name of village/ Mouza	Name of Sub - Lease	Area being applied for renewal of Mining Lease in 'Ha'			
		Private Land	Govt Land	Forest Land	Total
Piparia	Sub-Lease - 29 A	140.092	102.236	121.500	363.828
Chikatbarri	Sub-Lease - 29 B	114.440	73.686	157.750	345.876
Bhakra	Sub-Lease - 29 C(i)	219.729	138.197	138.400	496.326
	Sub-Lease - 29 C(ii)				
	Sub-Lease - 29 C(iii)				
Nandana	Sub-Lease - 29 D(i)	13.710	125.395	125.250	264.355
	Sub-Lease - 29 D(ii)				
Dhau	Sub-Lease - 29 E (i)	300.510	347.715	692.812	1341.037
	Sub-Lease - 29 E (ii)				
Ghorawari Kalan	Sub-Lease - 29 I(i)	226.648	127.192	254.250	608.090
	Sub-Lease - 29 I(ii)				
	Sub-Lease - 29 I(iii)				
Nandora	Sub-Lease - 29 F	--	--	7.447	7.447
Rakhikol	Sub-Lease - 29 H	--	--	24.945	24.945
Bhardagarh	Sub-Lease - 29 G	9.374	67.297	140.375	217.046
<b>Total (MCR Lease no - 29)</b>		<b>1024.416</b>	<b>981.718</b>	<b>1662.728</b>	<b>3668.862</b>

MCR lease no 29 of Kanhan Area, falling within the Mine Boundary of Damua Colliery vis-à-vis area being applied for renewal of lease through this application is given in the following table

Name of Village	Sub-Lease	As per original lease document			Area being applied for lease renewal 'Ha'
		In 'Acre	In 'Ha' (using conversion factor 2.471)	Remarks	
Piparia	Sub-Lease - 29 A	899.020	363.828	Plate No. XIII C	363.828
Chikatbarri	Sub-Lease - 29 B	854.660	345.876	Plate No XIII B	345.876

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Name of Village	Sub-Lease	As per original lease document			Area being applied for lease renewal 'Ha'
		In 'Acre	In 'Ha' (using conversion factor 2.471)	Remarks	
Bhakra	Sub-Lease - 29 C(i)	1226.420	496.326	Plate No.XIII E	496.326
	Sub-Lease - 29 C(ii)				
	Sub-Lease - 29 C(iii)				
<b>Sub- Total (MCR Lease no 29 C)</b>		<b>1226.420</b>	<b>496.326</b>		<b>496.326</b>
Nandana	Sub-Lease - 29 D(i)	653.220	264.355	Plate No.XIII D	264.355
	Sub-Lease - 29 D(ii)				
<b>Sub- Total (MCR Lease no 29 D)</b>		<b>653.220</b>	<b>264.355</b>		<b>264.355</b>
Drau	Sub-Lease - 29 E (i)	3313.700	1341.037	Plate No.XIII A	1341.037
	Sub-Lease - 29 E (ii)				
<b>Sub- Total (MCR Lease no 29 E)</b>		<b>3313.700</b>	<b>1341.037</b>		<b>1341.037</b>
Ghorawari Kalan	Sub-Lease - 29 I(i)	1502.590	608.090	Plate No.XIII I	608.090
	Sub-Lease - 29 I(ii)				
	Sub-Lease - 29 I(iii)				
<b>Sub- Total (MCR Lease no 29 I)</b>		<b>1502.590</b>	<b>608.090</b>		<b>608.090</b>
Nandora	Sub-Lease - 29 F	18.400	7.447	Plate No.XIII H	7.447
Rakhikol	Sub-Lease - 29 H	61.640	24.945	Plate No.XIII G	24.945
Bhardagarh	Sub-Lease - 29 G	536.320	217.046	Plate No.XIII F	217.046
<b>Total (MCR Lease no - 29)</b>		<b>9065.970</b>	<b>3668.862</b>		<b>3668.862</b>

**ABSTRACT OF THE SCHEDULE OF LAND OF THE MCR LEASES FALLING WITHIN THE MINE BOUNDARY OF THE MINING PLAN OF DAMUA COLLIERY (DAMUA UG & DAMUA OC PATCHES)**

(Figures in Ha.)

Name of village/ Mouza	Area being applied for renewal of Mining Lease in 'Ha'				Area covered under in this mining plan	Remarks
	Private Land	Govt Land	Forest Land	Total		
<b>MCR Lease No -1 of Kanhan Area</b>						
Rakhikol	35.461	367.302	8.155	410.918	12.760	Partly in Damua colliery, balance area in Rakhikol Colliery
<b>Total (MCR Lease No - 1)</b>	<b>35.461</b>	<b>367.302</b>	<b>8.155</b>	<b>410.918</b>	<b>12.760</b>	
<b>MCR Lease No -2 of Kanhan Area</b>						
Kalichhapar	157.159	105.448	224.913	487.500	304.077	Partly in Damua colliery, While balance area in Nandan & Rakhikol Colliery
<b>Total (MCR Lease No - 2)</b>	<b>157.159</b>	<b>105.448</b>	<b>224.913</b>	<b>487.500</b>	<b>304.077</b>	

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## CHAPTER-II

### GENERAL INFORMATION

- 1 Name & Address of the Applicant : General Manager, Western Coalfields Limited, Kanhan Area, Post Dungaria, Tahasil - Junnardeo, Dist. - Chhindwara, Pin code - 480553  
Phone No. 07160 - 230060  
Fax No. 07161 - 230504
- 2 Status of the Applicant : Public Sector Undertaking, wholly owned by Govt. of India)
- 3 Mineral or Minerals which The applicant intends to mine : Coal
- 4 Name & Address of the recognized person who prepared the mining plan : Shri. V.K. Machharia  
C-2, Kanchan Malini Apartment, Kinkhede Layout, Amravati road, Bharat Nagar, Nagpur-440033, (Maharashtra), Phone No. 0712—2554386.  
Recognised as competent person under Rule 22 C of Mineral Concession Rule 1960 by Under Secretary, Govt. of India, Ministry of Coal, New Delhi and conveyed vide No. 34011/(12)/2005- CPAM dated 21<sup>st</sup> July, 2005. (Copy of Certificate is attached in Annexure)

#### 5 BRIEF OF DAMUA COLLIERY (DAMUA UG & DAMUA OC PATCHES )

Damua Colliery (Damua UG & Damua OC Patches) is situated in Pench & Kanhan Valley Coalfields within Chhindwara District of Madhya Pradesh. Five number of MCR Leases namely lease no - 1, 2, 3, 4 & 29 of Kanhan area falls within the Mine boundary of Damua colliery (UG & OC). The mine is in Kanhan Area of WCL. Damua UG is a working mine & there are oc patches within leasehold of Damua colliery

#### 6. PARTICULARS OF PROSPECTING AGENCY :

Mineral Exploration Corporation Ltd (MECL), commenced drilling in Damua block in 1975. Assessment of coal reserves in the area (Shrivastava and Chandra, 1975) forms the base for the exploration carried out by MECL. Later on drilling were undertaken in Damua (E) block and Jharna (Extension) block and Geological Reports were prepared in 1984 and 1987 respectively.

Based on the detailed exploration work in the block and adjoining blocks GRs / notes were prepared by MECL & CMPDIL. The details of Exploration and number of boreholes drilled and Year of drilling are given as under

Sl No.	Series-	No. of boreholes	Metreage	Period
1.	PKDR	36	6594.55	31.10.74 - 12.8.79
2.	PKDM	26	6139.85	26.6.80 - 18.11.83
3.	DOC	35	2236.75	25.01.86 - 03.04.87
	TOTAL	97	14971.15	

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# CHAPTER - III

## EXPLORATION , SURVEYING AND GEOLOGY

### 3.1 REGIONAL GEOLOGY:

The PENCH - Kanhan Valley Coalfield extends over a strike length of about 64 km. The Talchirs are exposed all along the southern limit of basin, while the moturs with thin strips of Barakars in between, occur in the central part. In the northern part, Bijori and Panchmarhi formations overlie the Lower Gondwanas. Over lying the Lower Gondwana sediments, the Jabalpurs are exposed in small patches in eastern part of the coalfield, while the Deccan Trap covers the Gondwana sediments over a greater part in the east. A number of Dolerite dykes have also intruded in the coal bearing formations. The archaeans occurring in the south demarcates the southern limit of basin. The regional strike of the sedimentaries is ENE-WSW with northerly dip ranging between 5° and 15°. The PENCH Valley area is affected by a network of faults in which the strike faults are dominant. As a result of these faults of varying amounts of throw, local changes in dip and strike are common. The fault zones have prominent topographical expressions in the form of linear ridges, fractured and slickenside rocks and faulted/ unconformable contact with Precambrian crystallines in the southern part of the basin. The coal bearing Barakars show conformable relation with the overlying Moturs, but having distinct unconformity with Jabalpur.

The Regional Geological sequence of the Satpura—Gondwana basin is given below:

TABLE-3.1

Age	Formation	Lithology
Recent	Alluvium	Sandy & clayey soil
Upper Cretaceous to Eocene	Deccan Traps	Basalt flow with intertrappean beds, dykes & sills of dolerite
Upper Cretaceous	Lameta	Conglomerate, Limestone & clays
--UNCONFORMITY--		
Jurassic	Jabalpur	Sandstone, Jasper bearing conglomerates with soft white clays
--UNCONFORMITY--		
Rhaetic	Bagra Conglomerate	Coarse conglomerate with quartz pebbles in matrix of sandy clay.
Triassic	Denwa clays	Thick beds of soft variegated clay interstratified with subordinate bands of white sandstone.
Lower Triassic	Pachmarhi Sandstone	Coarse white soft sandstone with layers of white subangular quartz pebbles.
--UNCONFORMITY--		
Upper Permian	Bijori	Sandstone, micaceous shales, carbonaceous shales with streaks of coal.
	Motur	Red, buff, pink, and pale green clays with nodular concretions and sandstone.
Lower Permian	Barakar	Feldspathic sandstone, shales Carbonaceous shales, fire clays and coal seams.

## CHAPTER-IV

### GEOLOGICAL / EXTRACTABLE COAL RESERVES

#### 4.1 DAMUA UG&OC MINE LEASEHOLD AREA UNDER MCR 1960

##### 4.1.1 Geo-mining characteristics

The Geological structure of Damua Block has been deciphered mostly on the basis of surface and sub-surface data obtained from boreholes drilled in the block and actual workings in the mine.

Coal Seam attitude as interpreted from borehole data and as evidenced in the mine workings is a warping and undulating, low gradient structure. The strike of the coal seam swings to E – W while it is NE – SW in the eastern parts of the area. In the Damua U/G Mine leasehold, the gradient is generally 1 in 9 to 1 in 13 towards north.

Based on the available exploration data, Damua block has proved existence of three coal seams, namely Seam-III, Seam-II and Seam-I from top to bottom. Out of these three coal seams, only one seam i.e., Seam-III (Top) is found to be suitable for exploitation by underground and opencast method of working. Seam-III has splitted in two parts namely Top section and Bottom section in this block. Based on the exploration data, the coal seam thickness and partings are as under:

Seam/ Parting	Thickness Range (M)		Remarks
	Minimum	Maximum	
1	2	3	4
Seam-III (Top)	2.19	4.85	Most potential seam and considered workable. In majority of area, its average thickness is 4.5m.
Parting	1.25	6.08	
Seam-III (Bottom)	0.25	1.13	Not considered workable
Parting	4.09	8.90	Generally sandstone with occasional thin shale / carb shale bands
Seam-II	0.13	1.35	Impersistent, not considered workable
Parting	5.62	9.35	Predominantly constituted of sandstone with occasional bands of shale and carb shale.
Seam-I	0.35	1.51	Not considered workable

##### 4.1.2 Balance insitu geological reserves to insitu mineable reserves & insitu mineable reserves to extractable reserves RESERVES

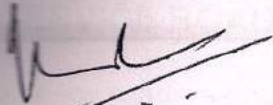
The reserves given in the following table pertains to only Seam-III (Top), which is the only workable seam

Mines/Blocks	Balance Insitu Geological reserves (Mt)	Balance Insitu Mineable reserves (Mt)	Balance Extractable reserves (Mt)
Damua U/G&O/C Mine	27.33	19.65	9.21
<b>Total</b>	<b>27.33</b>	<b>19.65</b>	<b>9.21</b>

**MINING, GENERATION & DISPATCH OF COAL**

... being worked by Bord & Pillar method with SDL - Coal  
with combination in UG mine and by Shovel & Dumper combination in opencast are being  
practised. The coal produced from the mine is being transported from mine to coal  
stockyard. The coal is then transported to Railway Siding and from there to consumer  
through railways.

Main consumer for the coal produced from the mine is MPEB & Steel Plant.



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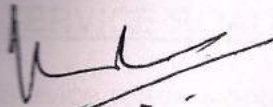
## CHAPTER-VI

### MARKETING, BENEFICIATION & DESPATCH OF COAL

#### E.1 GENERAL

The property in Damua Mine is being worked by Bord & Pillar method with SDL – Coal tubs combination in UG mine and by Shovel & Dumper combination in opencast are being practiced. The coal produced from the mine is being transported from mine to coal stockyard. The coal is then transported to Railway Siding and from there to consumer through railways.

Main consumer for the coal produced from the mine is MPEB & Steel Plant.



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## CHAPTER—VII

### INFRASTRUCTURE FACILITIES

#### 7.1 GENERAL

Damua U/G Mine is an existing mine located in Chhindwara district of Madhya Pradesh and is under administrative control of Kanhan Area of WCL. The Damua mine is linked to Damua town by a two km all weather metalled road. Damua in turn is connected with Dungaria i.e., headquarter of Kanhan Area, WCL and further to east with Parasia i.e., headquarter of Pench Area, WCL by a metalled road. The nearest rail head is Hirdagarh, which is situated at a distance of 15 km from Damua on Amla – Parasia Broad gauge line of Central Railway.

#### 7.2 SERVICE ROAD

Service roads along with culverts, drains etc have been provided connecting all the service buildings existing in Damua Mine.

#### 7.3 COAL HANDLING PLANT

Damua Mine has its own coal handling plant. The coal from Damua U/G & OC Mine is transported to Nandan railway siding by road, which is one of the three railway sidings in Kanhan Area. Nandan Washery Railway Siding (Half Rake Capacity) is located at a distance of about 4 km from Nandan Mine.

#### 7.4 POWER SUPPLY

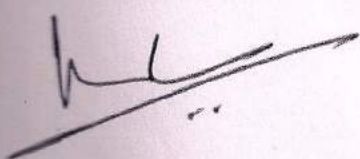
Power for Damua Mine is obtained from Damua MPSEB substation by means of 11 kV feeders.

#### 7.5 SERVICE BUILDINGS

Service buildings such as Sub-Area office, Manager's office, Rest Shelter, Canteen, Workshop building, Cap Lamp room, First-aid centre, Dispensary, Worker's Institute, Shopping centre, Scooter/Cycle shed, Garage etc etc. exist in the present running mine.

#### 7.6 MAGAZINE

A service magazine is situated at Damua Mine with 1361 kg capacity for the use of Damua U/G and OC Mine



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# CHAPTER—XI

## PROGRESSIVE MINE CLOSURE PLANNING

### DAMUA COLLIERY (DAMUA UG)

#### 11.1.0 MINE CLOSURE PLANNING

##### 1.0 OBJECTIVES OF CLOSURE PLANNING

Mine closure planning has to be carried out at the starting of the mine and needs periodic reviewing and revision during its life cycle to cope with the geo-technical constraints, safety and economic risks, social and environmental challenges. Various other objectives are as follows:

To allow a productive and sustainable after-use of the site which is acceptable to the mine owner and the regulatory authority;

To protect public health and safety;

To alleviate or eliminate environmental damage and thereby encourage environmental sustainability;

To minimize adverse socio-economic impacts.

##### 2.0 DIFFERENT ASPECTS OF MINE CLOSURE PLANNING

The mine closure planning broadly involves the following aspects :

- (a) Technical aspects;
- (b) Environmental aspects
- (c) Social aspects;
- (d) Financial aspects.

##### 3.0 MINE CLOSURE OBLIGATIONS

There is need to define the liabilities, responsibilities and authorities of the mine management, other regulatory bodies, Central and State Governments after mine closure. Some obligations relating to the Mine Management Companies are as follows :

- (a) **Health & Safety** Regulation Nos. 6, 61, 106, 112 of Coal Mines Regulations, 1957 and its related DGMS Circulars;

- (b) **Environment**

Water (Prevention & Control of Pollution) Act, 1974;  
Air (Prevention & Control of Pollution) Act, 1981;

Environmental (Protection) Act, 1986 and Environmental Protection (Amendment) Rule , 2000;

DGMS Directives on Noise & Ground Vibration;

  
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