
Mining Plan including Mine Closure Plan (as per latest guidelines of Ministry of Coal)

MINING PLAN (including Mine Closure Plan) FOR NIGAH EXPANSION OCP

(Coal Production Capacity of 25.00 Mtpa with 2000m³/Day Overburden Processing Plant to generate Manufactured Sand in Project Area of 3582.723 Ha.)

**(Production Capacity of Coal – 25.00 Mtpa)
(Project Area – 3582.723 Ha)**

**Singrauli Coalfield, Singrauli District,
Madhya Pradesh State**
(In line with the Guidelines of MoC
vide dated 29-05-2020 & 09-09-2020)

JULY – 2023



Northern Coalfields Limited
PO- Singrauli, Dist- Singrauli, State -MP - 486889
Prepared by: CMPDI, RI-VI, PO- Jayant Colliery,
Dist - Singrauli (MP) 486890

Mass balancing of Coal production, OB excavation & generation of Manufactured Sand (Peak excavation per year) at year wise during the balance period of mine.

EC granted to Nigahi OCP by MoEF&CC vide letter No. J-11015/79/2013-IA-II(M), EC Identification No. EC22A042MP180012 dated 25.07.2022 which has been revalidated on 20.07.2023 vide EC Identification No. EC23A001MP170130 for a production capacity of 22.50 Mtpa in project area of 3018.400 Ha based on the Mining Plan approved by NCL Board in its 276th Board meeting held on 30.05.2022.

The Mining Plan (including Mine Closure Plan) has been prepared for obtaining Environmental Clearance for 25.00 Mtpa for supply of coal to thermal power stations and other consumers to meet the increased energy demand in the country in area of increase from 3018.400 Ha to 3582.723 Ha (additional land area 564.323 Ha).

Balance life of the mine as on 01.04.2023: 18 years i.e. upto FY 2040-41.

The Mass Balance study of Coal Production, OB Excavation & generation of Manufactured Sand (Peak excavation per year) year wise during the balance period of mine for Nigahi OCP is given below:

Consideration as per the EC / Mining Plan for mass balance/ material balance study:

- Coal mined out in a year (Peak during life of the mining activities) = 25 Million Tonne / 16.13 Million cubic meters.
- OB removed in a year (Peak during life of the mining activities) = 235.17 Million Tonne/ 135.00 Million cubic meters.
- Total Mass (Peak material handling during the life of mine) = 260.17 Million Tonne / 151.13 Million cubic meters (approx.) in a year.

Based on Proposed EC for generation of manufactured sand from overburden processing plant scenario, the mass balance study has been carried out (considering the balance life of 18 years from FY 2023-24).

Year wise mass/ material balance: For Production

Year	Coal production as per proposed Mining Plan		Waste/ By Product		Total (Mm ³)	(Coal + OB Volume in Mm ³)
	(Mt)	(Mm ³) (P=1.55 t/m ³)	OB Removal (Mm ³) as per proposed Mining Plan	Generation of Manufactured Sand (Mm ³) from OB as per proposed Sand Plant	Total Volume for Dumping	
2023-24	25.00	16.13	133.12	0.16	132.96	149.25
2024-25	25.00	16.13	135.00	0.31	134.69	151.13
2025-26	25.00	16.13	135.00	0.62	134.38	151.13
2026-27	25.00	16.13	135.00	0.62	134.38	151.13
2027-28	25.00	16.13	135.00	0.62	134.38	151.13
2028-29	25.00	16.13	135.00	0.62	134.38	151.13
2029-30	25.00	16.13	135.00	0.62	134.38	151.13
2030-31	25.00	16.13	135.00	0.62	134.38	151.13
2031-32	25.00	16.13	135.00	0.62	134.38	151.13
2032-33	25.00	16.13	128.00	0.62	127.38	144.13
2033-34	25.00	16.13	122.99	0.62	122.37	139.12
2034-35	25.00	16.13	120.76	0.62	120.14	136.89
2035-36	25.00	16.13	106.03	0.62	105.41	122.16
2036-37	25.00	16.13	104.48	0.62	103.86	120.61
2037-38	20.00	12.90	80.26	0.62	79.64	93.16
2038-39	18.00	11.61	60.75	0.62	60.13	72.36
2039-40	14.00	9.03	45.00	0.62	44.38	54.03
2040-41	7.10	4.58	15.00	0.62	14.38	19.58
Total	409.10	263.95	1996.39	10.39	1986.00	2260.34

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CHECK LIST

Details		(✓ /x)
	Expert-review Report	
Chapter -1	Project Information	✓
Chapter -2	Exploration, Geology, Seam Sequence, Coal Quality and Reserve	✓
Chapter -3	Mining	✓
Chapter -4	Safety Management	✓
Chapter -5	Infrastructure Facilities proposed and their Location	✓
Chapter -6	Land Requirement	✓
Chapter -7	Environment Management	✓
Chapter -8	Progressive & Final Mine Closure Plan	✓
	Annexures and Plates	✓

Justification for Mining Plan (including Mine Closure Plan) for inclusion of Overburden Processing Plant to generate Manufactured Sand

At present the latest Mining Plan (including Mine Closure Plan) prepared for a production capacity of 22.50 Mtpa in an area of 3018.400 Ha has been approved by NCL Board in the 276th Board meeting held on 30.05.2022 and EC for 22.50 Mtpa has been granted by MoEF&CC vide letter No. J-11015/79/2013-IA-II(M), EC Identification No. EC22A042MP180012 dated 25.07.2022 which has been revalidated on 20.07.2023 vide EC Identification No. EC23A001MP170130.

This Mining Plan is prepared based on the Expansion Project Report of Nigahi OCP (15 Mtpa to 25 Mtpa) approved by CIL Board in 414th meeting on 11.11.2020 for an additional capital investment of Rs. 1729.68 crores with approved option-II i.e. total coal departmental & partial OB outsourcing (sanctioned 15 Mtpa+10 Mtpa incremental coal by departmental Surface Miner and incremental OB by outsourcing)

Mining Plan (including Mine Closure Plan) has been prepared for obtaining Environmental Clearance for 25.00 Mtpa for supply of coal to thermal power stations and other consumers to meet the increased energy demand in the country in area of increase from 3018.400 Ha to 3582.723 Ha.(additional land area 564.323 Ha)

Subsequently, as per directives of Ministry of Mines (Sand Mining Framework, 2016) and Ministry of Coal, new initiative for conservation of minerals and to reduce environmental impacts on river ecosystem, production of manufactured sand from the overburden materials at Nigahi Opencast Coal mine has been proposed. This sand generated from overburden processing will be an initiative for converting waste to useful resources. For this an overburden processing plant for generation of manufactured sand with capacity of 2000 m³/day is proposed to be installed within present project area of Nigahi OCP.

For installation & commissioning of plant for sand segregation from overburden material excavated from revenue land at Nigahi Expn. OCP along with regular coal mining operations with 25 Mtpa production in project area of 3582.723 Ha; in proposed EC has to be obtained from MoEF&CC.

Accordingly Mining Plan (including Mine Closure Plan) has been prepared for inclusion of overburden processing plant for generation of manufactured sand along with coal mining operations.

BRIEF ON OVERBURDEN PROCESSING FOR GENERATION OF MANUFACTURED SAND:

Sand is formed by natural erosion processes over thousands of years. Sand and gravel are mined out worldwide and account for the largest volume of solid materials extracted globally.

These are being extracted at a greater rate than their natural formation rate. Use of sand and gravel in colossal quantities in construction activities, increases dependence on these materials. Ensuring their availability is vital for infrastructure development. Excessive removal of sand from river bed has adverse impacts on river, delta, coastal and marine ecosystem and may significantly distort the natural equilibrium of a stream. Major impacts are evident like loss of land through river / coastal erosion, lowering of water table and decrease in the amount of sediment supply. Sand mining from rivers can also damage private and public properties as well as aquatic habitats. Thus extraction has to be regulated and required environmental safeguards during sand mining are to be ensured.

Use of manufactured sand, artificial sand and alternative technologies in construction materials and processes have to be encouraged for reducing the dependence on naturally occurring sand and gravel.

The overburden materials generated from coal mine of this region consists mainly of alluvial soil, hard rocks viz. Sandstone, shale & their intercalations. Sandstone is the main constituent of overburden material. Sandstone is the rock formed by cementing of sands composed largely of quartz and silicate minerals. Preliminary investigation report suggests 70-80% sand (as per IS-383 (2016)) concentration in overburden material of Nigahi OCP.

This sand if extracted from overburden materials can be alternative to river sand and be utilized as construction material grade sand and in other geotechnical applications. Use of this manufactured sand will help in reducing environmental impacts on the river ecosystem. This Manufactured sand can be made available in all seasons and cost will also be cheaper than river sand. Sand segregation from overburden material in open cast coal mines of NCL will be an important step in this direction. Segregation of sand from overburden material can be achieved along with regular coal mining operations in accordance to permission to be obtained from Regulatory Authorities.

Accordingly, it is proposed for generation of manufactured sand by processing of overburden material excavated from land, which is abundantly available at Nigahi OCP.

In view of above, Mining Plan (including Mine Closure Plan) to include overburden processing plant to generate manufactured sand along with coal mining operations has been prepared. It will help in conservation of minerals and reduce environmental impact on river ecosystem by minimizing the foot prints and dependency on river sand.

Mitigative measures for pollution control will be taken for both the coal mining operations and Sand segregation plant.

Sl. No.	Source of Air Pollution	Control Measures
1	Crushing	Fully covered crusher, chances for leakage will be almost negligible.
2	Vibrating Screen	Will be Covered externally to reduce the air borne dust.
3	Loading	Segregated sand after washing in the hydro-cyclone will become wet.
4	Transportation	Wet segregated sand will be transported via tarpaulin covered trucks

Sl. No.	Source of Water Pollution	Control Measures
1	Hydro-cyclone (washing of sand)	Treated water from ETP situated at Nigahi Project will be used in the hydro-cyclone to separate clay and silt from the OB. The water with clay and silt will be transferred into the thickener which will separate 90% of the total input water for reuse, whereas the balance 10% water with clay will be discharged through pipeline in clay pond for settling. The Clay pond is left for drying. The water left out after evaporation in clay pond will be reused for various purposes in plant. Thus Zero water discharge will be there.

Exercise on mass balance considering the Sand Segregation along with normal mining activity as per proposed EC has been carried out. As per the exercise the total production/Material handling (Coal+OB+Sand in Million Cubic Meter) has been proposed EC capacity of 25.00 Mtpa.

MERITS OF THE PROPOSAL:

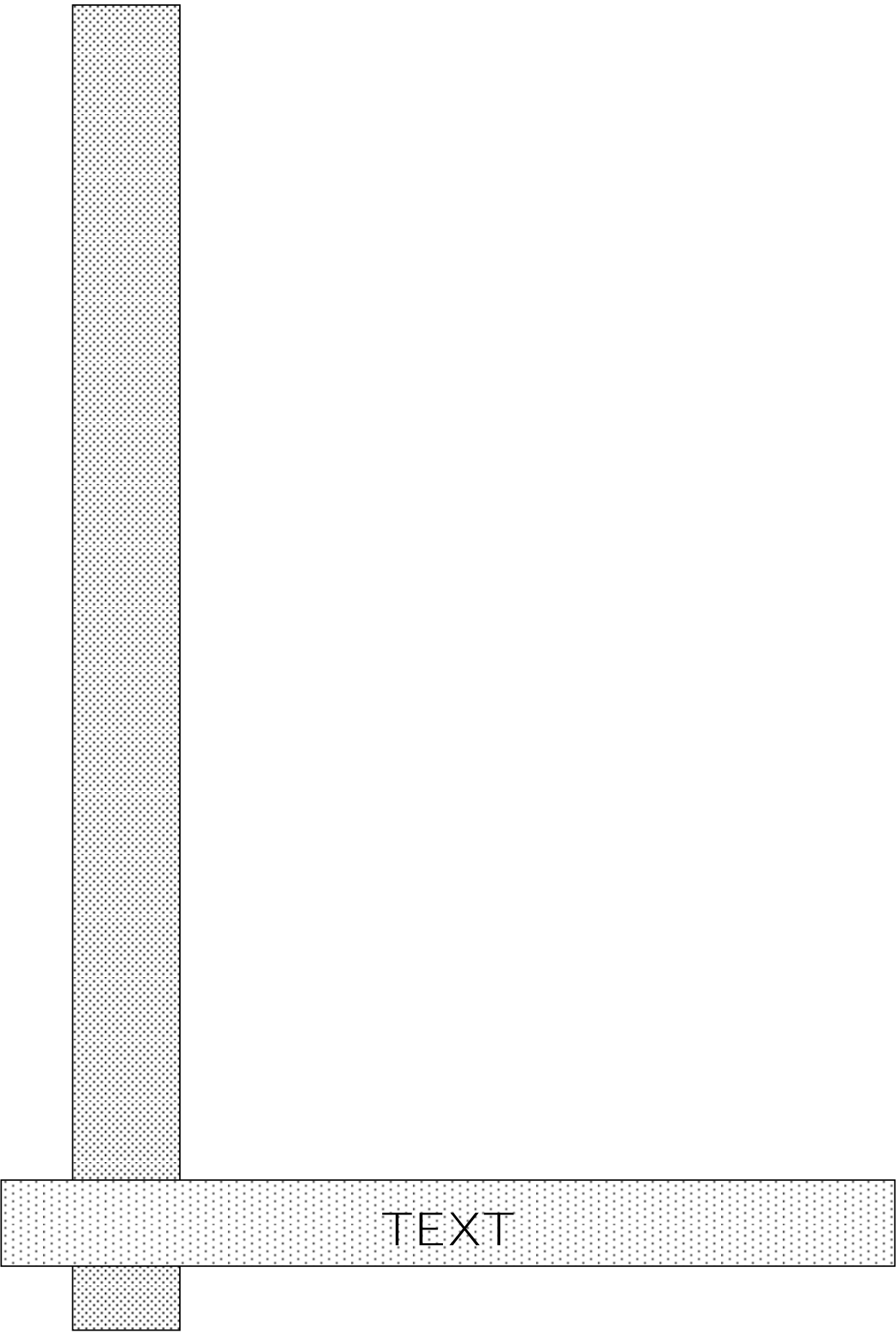
The sand segregation plant is proposed to be commissioned within project area of 3582.723 Ha as per Proposed EC along with regular coal mining operations with production capacity of 25.00 Mtpa. It will have following benefits:

- (i) Degradation of land can be minimized.
- (ii) Generation of indirect employment from operation of overburden processing plant.
- (iii) Reduce the dependency and demand on naturally occurring sand for construction works to a great extent. It will help in conservation of river ecosystem.
- (iv) Availability of sand in all seasons. Uninterrupted supply of sand without any seasonal affect throughout the year.
- (v) Cost of sand will be substantially cheaper than river sand.

- (vi) Conversion of waste (OB material) to useful resource.
- (vii) Revenue generation through selling of sand segregated from overburden (Waste) materials as Business Diversification plan for the company.

Conclusion:

Mining Plan (including Mine Closure Plan) has been prepared as per the latest guidelines of Ministry of Coal dated 29.05.2020 & 09.09.2020 for approval of NCL Board. It has been revised for inclusion of Sand Segregation Plant with capacity of 2000 m³/day along with regular coal mining operations with proposed production capacity of 25.00 Mtpa within project area of 3582.723 Ha as proposed EC.



CHAPTER 1

PROJECT INFORMATION

Note: Prepared based on the Expansion Project Report (15 Mtpa to 25 Mtpa) for Nigahi Opencast Project approved by CIL Board in 414th meeting on 11.11.2020 for an additional capital investment of Rs. 1729.68 crores with approved option-II i.e. total coal departmental & partial OB outsourcing (sanctioned 15 Mtpa + 10 Mtpa incremental coal by departmental Surface Miner and incremental OB by outsourcing).

	Parameters	Details
1.1	INTRODUCTION	
1.1.1	Name of Coal / Lignite Block	Nigahi North extension Block, Nigahi Dip Extension Block and small part of Block-B Extension Block & Bijul Block.
1.1.2	Name of the Coalfield / Lignite Field	Moher Sub-Basin, Singrauli Coalfield
1.1.3	Base date of Mining Plan / Mine Closure Plan	01.04.2023
1.1.4	Linked End Use Plant	Vindhyachal Super Thermal Power Station (4760 MW) of NTPC
1.1.5	Distance of End use plant from the pit head of the project in “km”	Vindhyachal Super Thermal Power Station (4760 MW) of NTPC is about 20 Km from the mine.
1.1.6	Mode of Coal Transport	Coal by Rail. By rail- 25.00 Mt. (Existing CHP 15 Mtpa + CHP 10 Mtpa Under construction)

1.2 LOCATION, TOPOGRAPHY AND & COMMUNICATION

1.2.1	Location of coal deposit (District and State)	<p>District-Singrauli, State-Madhya Pradesh</p> <p>Nigahi and Nigahi North Extension Geological Block of Moher Sub-Basin of Singrauli Coalfield is located in Singrauli district, Madhya Pradesh.</p> <p>(Detail of plots are given in Annexure-III) Area is covered under survey of India topo-sheet No.63/L/12.</p>
1.2.2	Communication: PWD roads, railway lines, Air	<p>Nigahi opencast mine is located in Singrauli district of Madhya Pradesh and forms a part of Singrauli coalfield. Singrauli railway station on the Chopan-Katni Branch line is located at a distance of about 12 km from the mine and Shaktinagar Railway station is at a distance of about 10 km from the Nigahi opencast project. Waidhan–Renukut-Varanasi highway passes at distance of about 2 km from the project which is connected by a road. The district headquarter town Waidhan is about 8 km from the Project.</p> <p>Nearest Airport is Varanasi at a distance of about 225 Km. The nearest air strip is at Myorpur, at a distance of about 60 kms from the project.</p>
1.2.3	Availability of power supply, water etc.	<p>Existing Power Supply Arrangement</p> <p>The Project is receiving power at 33 kV from Nigahi Sub-station of 132/33 kV MPEB located in Jayant, Distt. Singrauli (M.P).</p> <p>Nigahi Coal Substation is also being fed through 02 nos. 33 kV feeders drawn from OB east Sub-station and the circuit length is around 3 km. The existing CHP loads of are being fed through 3 x 10 MVA, 33 kV/6.6 kV receiving power through double circuit 33 kV feeder emanating from OB east Sub-station.</p>

		<p>Nigahi OB West Sub-Station receives power from Nigahi Sub-Station through double circuit overhead lines of 33 KV and OB East Sub-station receives power from OB West Sub-Station through double circuit overhead line of 33KV.</p> <p>Nigahi OB East and OB West Sub-station supply power to HEMM like draglines, shovels, drills etc. The Coal Sub-stations supplies power to HEMM deployed in coal section, pumping, CHP, workshop etc.</p> <p>Nigahi Colony Sub-station is of capacity of 1X10 MVA, 33/6.6 KV and 1X5 MVA, 33/6.6KV and is being fed from Nawanagar Sub-station of 132/33KV system voltage. The colony Sub-station supplies power to colony, GM office, shopping complex etc.</p> <p>The permanent Water Supply arrangement for Nigahi OCP is linked with Integrated Water Supply Scheme (IWSS).</p> <p>The requirement of water for potable, industrial and firefighting purposes for the existing mine is as follow:</p> <p>a) Potable Water demand - 2480 m³/d b) Industrial Water demand - 5500 m³/d c) Fire Fighting Water demand - 1000 m³/d Total: - 8980 m³/d Re-usage of water: 85% Source of water: ETP of the mine</p>
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1.2.4	Prominent physiographic features, drainage pattern, natural water courses, rainfall data, highest flood level	<p>Nigahi Block is located in the south western portion of Moher Sub-Basin of Singrauli coalfield. The Block is adjacent to Amlohri coal Block in the West and Jayant Block. It stands out as a hilly plateau with elevations of about 400-450 m above mean sea level. Some relief elevations exceed 500m.</p> <p>The climate of the area is tropical with severe summer. The temperature in summer goes as high as 48°C in May-June. In winter the temperature varies from 4°C to 21°C (November-February).</p> <p>Predominant wind direction is south-west. The average monthly wind velocity varies from 2.5 to 4.5 km/hr.</p> <p>The average annual rainfall is around 1000 mm of which 95% precipitation is during the rainy season (June -September).</p>
1.2.5	Important surface features within the project area and major diversion or shifting involved	There is no major diversion or shifting involved.

1.3 DETAILS OF THE ALLOTMENT AGREEMENT

1.3.1	Name of the Allottee	Not Applicable
1.3.2	Details of allotment/ vesting order	
1.3.3	Name and address of the applicant	Nigahi OCP is an operating mine under Northern Coalfields Limited (NCL), a subsidiary of Coal

1.3.4	Name of the Previous Allottee of the Block	India Limited (Maharatna Company), under the Ministry of Coal, Govt. of India. The subject mine falls in Singrauli District of Madhya Pradesh and operating under Nigahi Area of NCL																																										
1.3.5	Starting date of the Mine as per CMDPA	Nigahi Opencast Project is operating since 1985-86.																																										
1.3.6	Rated Capacity as per CMDPA																																											
1.3.7	Production Schedule as per opening permission (meeting provisions of CMDPA if any)	Area is notified under CBA Act-1957.																																										
1.3.8	End Use of Coal/Lignite as per Allotment order if any																																											
1.3.9	Cardinal Points co-ordinates of the Block boundary	<p>Latitude and Longitude of the points under which the project is operating is as follows:</p> <table border="1"> <thead> <tr> <th colspan="3">Cardinal Points of Leasehold Boundary</th></tr> <tr> <th>Name</th><th>Latitude</th><th>Longitude</th></tr> </thead> <tbody> <tr><td>P1</td><td>24° 11' 2.358" N</td><td>82° 35' 25.178" E</td></tr> <tr><td>P2</td><td>24° 11' 2.804" N</td><td>82° 35' 28.432" E</td></tr> <tr><td>P3</td><td>24° 11' 3.181" N</td><td>82° 35' 31.173" E</td></tr> <tr><td>P4</td><td>24° 11' 3.667" N</td><td>82° 35' 34.715" E</td></tr> <tr><td>P5</td><td>24° 11' 4.135" N</td><td>82° 35' 38.128" E</td></tr> <tr><td>P6</td><td>24° 11' 4.601" N</td><td>82° 35' 41.525" E</td></tr> <tr><td>P7</td><td>24° 11' 5.025" N</td><td>82° 35' 44.615" E</td></tr> <tr><td>P8</td><td>24° 11' 5.571" N</td><td>82° 35' 47.547" E</td></tr> <tr><td>P9</td><td>24° 11' 6.049" N</td><td>82° 35' 50.115" E</td></tr> <tr><td>P10</td><td>24° 11' 6.611" N</td><td>82° 35' 53.133" E</td></tr> <tr><td>P11</td><td>24° 11' 7.177" N</td><td>82° 35' 56.178" E</td></tr> <tr><td>P12</td><td>24° 11' 7.721" N</td><td>82° 35' 59.098" E</td></tr> </tbody> </table>	Cardinal Points of Leasehold Boundary			Name	Latitude	Longitude	P1	24° 11' 2.358" N	82° 35' 25.178" E	P2	24° 11' 2.804" N	82° 35' 28.432" E	P3	24° 11' 3.181" N	82° 35' 31.173" E	P4	24° 11' 3.667" N	82° 35' 34.715" E	P5	24° 11' 4.135" N	82° 35' 38.128" E	P6	24° 11' 4.601" N	82° 35' 41.525" E	P7	24° 11' 5.025" N	82° 35' 44.615" E	P8	24° 11' 5.571" N	82° 35' 47.547" E	P9	24° 11' 6.049" N	82° 35' 50.115" E	P10	24° 11' 6.611" N	82° 35' 53.133" E	P11	24° 11' 7.177" N	82° 35' 56.178" E	P12	24° 11' 7.721" N	82° 35' 59.098" E
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		P13	24° 11' 8.237" N	82° 36' 1.870" E
		P14	24° 11' 8.837" N	82° 36' 5.096" E
		P15	24° 11' 9.231" N	82° 36' 7.213" E
		P16	24° 11' 9.791" N	82° 36' 10.224" E
		P17	24° 11' 11.053" N	82° 36' 8.810" E
		P18	24° 11' 12.375" N	82° 36' 7.329" E
		P19	24° 11' 14.670" N	82° 36' 8.501" E
		P20	24° 11' 15.139" N	82° 36' 12.428" E
		P21	24° 11' 15.677" N	82° 36' 16.962" E
		P22	24° 11' 16.377" N	82° 36' 22.719" E
		P23	24° 11' 17.139" N	82° 36' 29.274" E
		P24	24° 11' 17.946" N	82° 36' 36.066" E
		P25	24° 11' 18.836" N	82° 36' 43.658" E
		P26	24° 11' 19.699" N	82° 36' 51.149" E
		P27	24° 11' 20.846" N	82° 37' 1.107" E
		P28	24° 11' 21.847" N	82° 37' 9.801" E
		P29	24° 11' 23.172" N	82° 37' 21.324" E
		P30	24° 11' 24.166" N	82° 37' 30.040" E
		P31	24° 11' 25.279" N	82° 37' 39.809" E
		P32	24° 11' 26.390" N	82° 37' 49.557" E
		P33	24° 11' 27.315" N	82° 37' 59.603" E
		P34	24° 11' 21.969" N	82° 38' 0.021" E
		P35	24° 11' 15.658" N	82° 38' 0.513" E
		P36	24° 11' 16.001" N	82° 38' 9.369" E
		P37	24° 11' 16.258" N	82° 38' 17.963" E
		P38	24° 11' 16.491" N	82° 38' 25.756" E
		P39	24° 11' 12.603" N	82° 38' 23.477" E
		P40	24° 11' 8.997" N	82° 38' 14.603" E
		P41	24° 11' 5.180" N	82° 38' 5.211" E
		P42	24° 11' 2.410" N	82° 37' 58.395" E
		P43	24° 10' 55.305" N	82° 37' 58.596" E
		P44	24° 10' 48.858" N	82° 37' 58.778" E
		P45	24° 10' 42.455" N	82° 37' 59.049" E
		P46	24° 10' 36.575" N	82° 37' 59.349" E
		P47	24° 10' 29.844" N	82° 37' 59.628" E
		P48	24° 10' 22.352" N	82° 37' 59.876" E
		P49	24° 10' 10.225" N	82° 38' 0.319" E
		P50	24° 10' 4.746" N	82° 38' 0.764" E
		P51	24° 9' 51.432" N	82° 38' 1.090" E
		P52	24° 9' 51.432" N	82° 38' 1.090" E
		P53	24° 9' 32.807" N	82° 38' 1.854" E
		P54	24° 9' 22.822" N	82° 38' 3.385" E
		P55	24° 9' 12.450" N	82° 38' 4.136" E
		P56	24° 8' 59.638" N	82° 38' 4.875" E

		P57	24° 8' 46.045" N	82° 38' 5.907" E
		P58	24° 8' 29.476" N	82° 38' 7.121" E
		P59	24° 7' 53.635" N	82° 38' 8.787" E
		P60	24° 7' 50.823" N	82° 38' 26.546" E
		P61	24° 7' 52.927" N	82° 38' 39.455" E
		P62	24° 7' 27.115" N	82° 38' 37.974" E
		P63	24° 7' 7.833" N	82° 38' 36.868" E
		P64	24° 6' 37.189" N	82° 38' 39.317" E
		P65	24° 6' 42.385" N	82° 39' 15.151" E
		P66	24° 6' 50.070" N	82° 39' 54.857" E
		P67	24° 6' 43.829" N	82° 39' 59.230" E
		P68	24° 6' 30.225" N	82° 39' 54.958" E
		P69	24° 6' 20.553" N	82° 39' 53.633" E
		P70	24° 6' 14.943" N	82° 39' 28.844" E
		P71	24° 6' 8.901" N	82° 39' 1.575" E
		P72	24° 6' 4.316" N	82° 38' 40.449" E
		P73	24° 5' 57.479" N	82° 38' 9.148" E
		P74	24° 6' 3.653" N	82° 37' 38.278" E
		P75	24° 5' 52.896" N	82° 37' 6.882" E
		P76	24° 6' 12.141" N	82° 36' 57.556" E
		P77	24° 6' 30.171" N	82° 36' 49.173" E
		P78	24° 6' 45.552" N	82° 36' 42.707" E
		P79	24° 7' 1.569" N	82° 36' 37.001" E
		P80	24° 7' 14.919" N	82° 36' 31.709" E
		P81	24° 7' 13.269" N	82° 36' 45.754" E
		P82	24° 7' 32.468" N	82° 36' 40.714" E
		P83	24° 8' 0.146" N	82° 36' 33.446" E
		P84	24° 8' 16.799" N	82° 36' 32.223" E
		P85	24° 8' 48.717" N	82° 36' 22.797" E
		P86	24° 8' 56.302" N	82° 36' 6.767" E
		P87	24° 9' 12.694" N	82° 35' 49.679" E
		P88	24° 9' 29.720" N	82° 35' 35.710" E
		P89	24° 9' 43.213" N	82° 35' 33.281" E
		P90	24° 9' 59.537" N	82° 35' 57.245" E
		P91	24° 10' 20.661" N	82° 35' 48.886" E
		P92	24° 10' 35.238" N	82° 35' 40.599" E
		P93	24° 10' 51.976" N	82° 35' 31.081" E

1.4 DETAILS OF THE PREVIOUS APPROVAL OF MINING PLAN

1.4.1	Date of Approval	The previous Mining plan (22.50 Mtpa) with mine closure plan has been approved by NCL Board in the 276 th Board meeting held on 30.05.2022.			
1.4.2	Conditions, if any	Not applicable.			
1.4.3	Scheduled year of start of production	Mine is in operation since 1985-86			
1.4.4	Proposed year of achieving the targeted production	2023-24			
1.4.5	Date of actual commencement of mining operations, if operations already started	Mine is in operation since 1985-86 and is continuing. The last Mining Plan (22.50 Mtpa) has been approved by NCL Board in the 276 th Board meeting held on 30.05.2022.			
1.4.6	Likely date of mining operations, if operations not yet started & reasons for non-commencement of operations	Not applicable			
1.4.7	Actual Production achieved in last 3 years (Coal in Mte, OB in Mm ³ , SR in m ³ /te)	<div>Year</div>	<div>Actual Production</div>		
			Coal (Mte)	OB (Mm ³)	SR (m ³ /te)
		2020-21	20.66	73.16	3.59
		2021-22	21.00	56.82	2.71
		2022-23	22.50	87.48	3.89
		Total	64.16	217.46	3.39
1.4.8	Statutory obligations vis-à-vis compliance status in a tabular form	Existing coal mining operations are being carried out as per the following: 1. Approved Mining Plan (including Mine Closure Plan): The last Mining Plan has been approved by NCL Board in the 276 th Board meeting held on 30.05.2022.			

		<p>approved by NCL Board in the 276th Board meeting held on 30.05.2022.</p> <p>2. Latest EC has been obtained vide letter No. J-11015/79/2013-IA-II(M), EC Identification No. EC22A042MP180012 dated 25.07.2022 which has been revalidated on 20.07.2023 vide EC Identification No. EC23A001MP170130 with a production capacity of 22.50 Mtpa in an area of 3018.400 Ha.</p>
1.4.9	Reasons for difference between the planned and actual production levels	Not applicable

1.5 PARAMETERS OF APPROVED MINING PLAN VIS-À-VIS PROPOSED MINING PLAN

		Approved Mining Plan	Proposed Mining Plan
1.5.1	Block Area in “Ha”	1442	2006.323
1.5.2	Block Area Projectised “Ha”	Full Area projectized	Full Area projectized
1.5.3	Lease area “Ha”	3018.400	3582.723
1.5.4	Project Area “Ha”	3018.400	3582.723
1.5.5	Life of the Project “Yrs”	9	18
1.5.6	Minimum and Maximum Depth of working “m”	44.60-300	205-315
1.5.7	Net Geological Block “Ha”	1442	2006.323
1.5.8	Production Target “MTPA”	Coal -22.50 Mtpa	Coal-25.00 Mtpa
1.5.9	Seams Available “As per GR”	4 Nos. of Seams 1. Purewa Top 2. Purewa Bottom	4 Nos. of Seams 1. Purewa Top 2. Purewa Bottom

		3. Purewa Merged 4. Turra	3. Purewa Merged 4. Turra
1.5.10	Seams not considered for Mining with Reasons	Kota Seam, Thin seam, not techno - economically feasible to extract	Kota Seam Thin seam, not techno-economically feasible to extract
1.5.11	Gross Geological Reserve "Mt"	555.07	552.11 as on 01.04.2020
1.5.12	Net Geological Reserve "Mt"	504.61	496.90 as Per EPR (25.00 Mtpa) as on 01.04.2020
1.5.13	Blocked Reserve "Mt"	nil	nil
1.5.14	Minable Reserve "Mt"	483.01	473.24 as Per EPR (25.00 Mtpa) as on 01.04.2020
1.5.15	Extractable Reserves "Mt"	483.01	473.24
1.5.16	% of Extraction/recovery	95.72%	95%
1.5.17	Reserve Depleted (till the base date) Reserves " Mt"	342.68 (As on 01.04.2023)	342.68 (As on 01.04.2023)
1.5.18	Balance Extractable reserve "Mt"	140.33 (As on 01.04.2023)	409.10 (As on 01.04.2023)
1.5.19	Average Grade	G9	G9
1.5.20	OB in Mm ³	605.07 (As on 01.04.2023)	1996.39 (As on 01.04.2023)
1.5.21	SR m ³ /te	4.31	4.88
1.5.22	Mining Technology	Opencast mining deploying Dragline ,	Opencast mining deploying Dragline ,

		shovel-dumper system Surface Miner- dumper	shovel-dumper system Surface Miner-dumper
1.5.23	Coal Beneficiation envisaged	ZNA	NA
1.5.24	Handling of Rejects	NA	NA
1.5.25	Land use pattern "Ha"		
1	Excavation Area	1665.00	2146.170
2	Top Soil Dump	-	-
3	External Dump	418.00	418.00
4	Road, Rail	74.00	74.00
5	Infrastructure area (built-up area), Colony ETP, CHP & Workshop	379.40	403.492
6	Green Belt, Solar Plant, sand plant, undisturbed land, safety zone & others	482	541.061
	Total	3018.40	3582.723
1.5.26	Reasons for revision	Mining Plan (including Mine Closure Plan) has been prepared based on plans and Mine Lease hold boundary of EPR (25.00 Mtpa) for obtaining Environmental Clearance for 25.00 Mtpa for supply of coal to thermal power stations and other consumers to meet the increased energy demand in the country been prepared with a production capacity of 25.00 Mtpa in total	

		land area of 3582.723 Ha(including additional land area of 564.323 Ha).
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CHAPTER 2

EXPLORATION, GEOLOGY, SEAM SEQUENCE, COAL QUALITY AND RESERVE

	Parameters	Details		
2.1	DETAILS OF THE BLOCK			
2.1.1	Particulars of adjacent blocks: North, South, East, West	North: Bijul Block South: Incrop zone of Turra seam	East: Mahrauli East & West Block West: Moher Amlohri Exn. Block	
2.1.2	Location of the Block District / State	District-Singrauli, State-Madhya Pradesh		
2.1.3	Area of the Block “Ha”	2006.323 Ha		
2.1.4	Area of the geological block projectized “in Ha” (Area of the geological block considered for liquidation of coal reserve)	Full Area		
2.1.5	Balance area yet to be projectized “Ha”	-		
2.1.6	Likely reserve in the area yet to be projectized “in Ha”	-		
2.1.7	Cardinal Points Co-ordinates of the non-coal/lignite bearing area/ existing mine lease outside the allotted Geological Coal Lignite block (Duly certified in line with para 1.9 of the Guideline, if fresh mining lease required)	Cardinal Points of Leasehold Boundary		
		Name	Latitude	Longitude
		P1	24° 11' 2.358" N	82° 35' 25.178" E
		P2	24° 11' 2.804" N	82° 35' 28.432" E
		P3	24° 11' 3.181" N	82° 35' 31.173" E
		P4	24° 11' 3.667" N	82° 35' 34.715" E
		P5	24° 11' 4.135" N	82° 35' 38.128" E
		P6	24° 11' 4.601" N	82° 35' 41.525" E
		P7	24° 11' 5.025" N	82° 35' 44.615" E
		P8	24° 11' 5.571" N	82° 35' 47.547" E
		P9	24° 11' 6.049" N	82° 35' 50.115" E
		P10	24° 11' 6.611" N	82° 35' 53.133" E
		P11	24° 11' 7.177" N	82° 35' 56.178" E
		P12	24° 11' 7.721" N	82° 35' 59.098" E
P13	24° 11' 8.237" N	82° 36' 1.870" E		

Parameters		Details		
		P14	24° 11' 8.837" N	82° 36' 5.096" E
		P15	24° 11' 9.231" N	82° 36' 7.213" E
		P16	24° 11' 9.791" N	82° 36' 10.224" E
		P17	24° 11' 11.053" N	82° 36' 8.810" E
		P18	24° 11' 12.375" N	82° 36' 7.329" E
		P19	24° 11' 14.670" N	82° 36' 8.501" E
		P20	24° 11' 15.139" N	82° 36' 12.428" E
		P21	24° 11' 15.677" N	82° 36' 16.962" E
		P22	24° 11' 16.377" N	82° 36' 22.719" E
		P23	24° 11' 17.139" N	82° 36' 29.274" E
		P24	24° 11' 17.946" N	82° 36' 36.066" E
		P25	24° 11' 18.836" N	82° 36' 43.658" E
		P26	24° 11' 19.699" N	82° 36' 51.149" E
		P27	24° 11' 20.846" N	82° 37' 1.107" E
		P28	24° 11' 21.847" N	82° 37' 9.801" E
		P29	24° 11' 23.172" N	82° 37' 21.324" E
		P30	24° 11' 24.166" N	82° 37' 30.040" E
		P31	24° 11' 25.279" N	82° 37' 39.809" E
		P32	24° 11' 26.390" N	82° 37' 49.557" E
		P33	24° 11' 27.315" N	82° 37' 59.603" E
		P34	24° 11' 21.969" N	82° 38' 0.021" E
		P35	24° 11' 15.658" N	82° 38' 0.513" E
		P36	24° 11' 16.001" N	82° 38' 9.369" E
		P37	24° 11' 16.258" N	82° 38' 17.963" E
		P38	24° 11' 16.491" N	82° 38' 25.756" E
		P39	24° 11' 12.603" N	82° 38' 23.477" E
		P40	24° 11' 8.997" N	82° 38' 14.603" E
		P41	24° 11' 5.180" N	82° 38' 5.211" E
		P42	24° 11' 2.410" N	82° 37' 58.395" E
		P43	24° 10' 55.305" N	82° 37' 58.596" E
		P44	24° 10' 48.858" N	82° 37' 58.778" E
		P45	24° 10' 42.455" N	82° 37' 59.049" E
		P46	24° 10' 36.575" N	82° 37' 59.349" E
		P47	24° 10' 29.844" N	82° 37' 59.628" E
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		P49	24° 10' 10.225" N	82° 38' 0.319" E
		P50	24° 10' 4.746" N	82° 38' 0.764" E
		P51	24° 9' 51.432" N	82° 38' 1.090" E
		P52	24° 9' 51.432" N	82° 38' 1.090" E
		P53	24° 9' 32.807" N	82° 38' 1.854" E
		P54	24° 9' 22.822" N	82° 38' 3.385" E
		P55	24° 9' 12.450" N	82° 38' 4.136" E

	Parameters	Details		
		P56	24° 8' 59.638" N	82° 38' 4.875" E
		P57	24° 8' 46.045" N	82° 38' 5.907" E
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		P68	24° 6' 30.225" N	82° 39' 54.958" E
		P69	24° 6' 20.553" N	82° 39' 53.633" E
		P70	24° 6' 14.943" N	82° 39' 28.844" E
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		P81	24° 7' 13.269" N	82° 36' 45.754" E
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		P91	24° 10' 20.661" N	82° 35' 48.886" E
		P92	24° 10' 35.238" N	82° 35' 40.599" E
		P93	24° 10' 51.976" N	82° 35' 31.081" E
2.1.8	Certificate of Qualified person/ Accredited Mining Plan preparing agency (MPPA) if the	Not applicable		

	Parameters	Details
	<p>project area is confined within the vested/allotted block boundary/existing mining lease and</p> <p>Where the project area extends beyond the block boundary, a certificate of Qualified person/ Accredited Mining Plan preparing agency (MPPA) should be supported with a certificate of State Government mines and Geology department must be attached, which should specify (a) intent of the state government for grant of lease beyond the vested geological boundary;(b)non-existence of Coal/ Lignite in the area beyond the vested/allotted geological block boundary/ existing mining lease to rule out the issue of encroachment and use of coal bearing area (beyond the vested / allotted block boundary /existing mining lease in the mining plan.</p> <p>The Project area, Lease area and geological block area in "Ha" shall also be envisaged.</p>	

	Parameters	Details
2.1.9	KML file of the Proposed lease area, Project Area and geological block.	It is annexed as 'Annexure III (a) - Google Earth Image (KML of the proposed leasehold boundary) and Annexure III (b) – KML of required additional land.
2.1.10	Whether the proposed project area is confined within the allotted block boundary/existing mining lease, if not, the reason for deviation from allotted block boundary, may be given.	The subject mine is an existing and operating mine. Yes
2.1.11	If the project area extends outside the allotted block boundary/existing mining lease, confirmation about non-occurrence of coal/lignite in the area under reference needs to be furnished	Not applicable
2.1.12	Type of the Project (Operating / under Implementation) and year of Starting.	Nigahi Opencast Expansion Project is operating since 1985-86. At present the last Mining Plan prepared for a production capacity of 22.50 Mtpa in an area of 3018.40 Ha has been approved by NCL Board on 30.05.2022 Accordingly, EC for capacity of 22.50 Mtpa has been granted by MoEF&CC.
2.2	EXPLORATION, GEOLOGY AND ASSESSMENT OF RESERVE	
2.2.1	Regional geological set up of the area, local geology, structure, stratigraphic sequence, characteristics of the litho-logical	The Nigahi OCP (25.00 Mtpa) has been prepared based on geological report of EPR for Nigahi OCP (25.00 Mtpa) has been envisaged with

	Parameters	Details																																				
	units (coal seams / partings / overburden).	<p>inclusion of remaining small part of Nigahi Block and major part of Nigahi North extension Block, Nigahi Dip Extension Block and very small part of Block-B Extension Block & Bijul Block of Moher Sub-basin of Singrauli coalfield.</p> <p>Regional Stratigraphy Coal Bearing Formations:</p> <p>The coal bearing rocks of this block belong to the Barakar formation of Damuda sub-group. The generalized sequence of the block as established by the GSI and IBM and updated by CMPDI is as follows:</p> <table> <tr> <th>Sl no</th><th>Lithology</th><th>Thickness (m)</th></tr> <tr> <td>1</td><td>Soil & Sub-soil</td><td>0 – 9</td></tr> <tr> <td>2</td><td>Sandstone and Shale</td><td>30.50 – 167.40</td></tr> <tr> <td>3</td><td>Purewa Top Seam</td><td>4.00 – 10.94</td></tr> <tr> <td>4</td><td>Sandstone</td><td>1.00 – 29.35</td></tr> <tr> <td>5</td><td>Purewa Bottom Seam</td><td>8.80 – 14.70</td></tr> <tr> <td>6</td><td>Sandstone</td><td>52.10– 69.60</td></tr> <tr> <td>7</td><td>Turra Seam</td><td>11.08 – 19.20</td></tr> <tr> <td>8</td><td>Sandstone</td><td>18.44 – 23.65</td></tr> <tr> <td>9</td><td>Turra 'A' Seam</td><td>0.22 – 1.20</td></tr> <tr> <td>10</td><td>Sandstone</td><td>38.92 – 49.20</td></tr> <tr> <td>11</td><td>Kota Seam</td><td>0.12 – 1.39</td></tr> </table>	Sl no	Lithology	Thickness (m)	1	Soil & Sub-soil	0 – 9	2	Sandstone and Shale	30.50 – 167.40	3	Purewa Top Seam	4.00 – 10.94	4	Sandstone	1.00 – 29.35	5	Purewa Bottom Seam	8.80 – 14.70	6	Sandstone	52.10– 69.60	7	Turra Seam	11.08 – 19.20	8	Sandstone	18.44 – 23.65	9	Turra 'A' Seam	0.22 – 1.20	10	Sandstone	38.92 – 49.20	11	Kota Seam	0.12 – 1.39
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10	Sandstone	38.92 – 49.20																																				
11	Kota Seam	0.12 – 1.39																																				

	Parameters		Details		
2.2.2	Local geology, Structure, Stratigraphic sequence, Characteristics of the litho-logical units (coal seams /partings/overburden).				
	<u>The Generalized Geological Sequence of Moher Basin (Nigahi & Nigahi Extension Block)</u>				
	Age		Formation	Lithology	
	Recent		Alluvium, Soil	Alluvium	
	Permian	Lower Gondwana	Raniganj (?)	Sand stone, Carb. Shale, Fireclay & Jhingurdah Seam	
			Barren Measures (?)	Medium to Coarsegrained sandstone with occasional Red, Green, Shale band.	
			Barakar	Medium, Coarse to Very Coarsegrained Sandstone, Carbshales and Thick Coal Seam-Turra, Purewa Seam.	
			Talchir	Khakhi to Green Coloured shales, sandyshale, Sandstoneand Boulderbed.	
	----- Unconformity -----				
	-----Metamorphics Basement-----				
	SEQUENCE OF COAL SEAMS				
	Lithology		Thickness Range (m)		Remarks
			From	To	
	Sand and sub soil		0.00	95.00	In the North western part of the area the Purewa Top and Purewa Bottom seams are merged to form Purewa merged seam in the depth range of 74.3 – 228 m from surface.

	Parameters		Details	
	Sandstone with 2 to 3 clay bands and 1 to 2 thin impersistent carbonaceous horizon.	0.82	91.85	
	Coal Seam : Purewa Top	0.93	10.15	Avg. Thickness: 6.22
	Sandstone with thin shale bands	1.29	29.35	
	Coal Seam : Purewa Bottom	9.2	14.46	Avg. Thickness: 11.79
	Coal Seam : Purewa Merged	15.5	28.3	Avg. Thickness: 23.85
	Sandstone with thin carb shale	55.3	77.8	
	Coal Seam : Turra	4.4	22.5	Avg. Thickness: 18.11
Strike and Dip The beds have a general ENE-WSW trend with northerly dip. The amount of dip is generally about 2-3 degree. The Area has been postulated free of faults				
2.2.3	Geological Block Area “ Ha”		2006.323	
2.2.4	Status of Exploration of the block		Fully Explored	
2.2.5	Area covered by ‘detailed’ exploration within the block (sq. km)		Full Area	
2.2.6	Whether entire lease area has been covered by ‘detailed’ exploration.		Yes	
2.2.7	No. of boreholes drilled within the block		142	
2.2.8	Whether any further exploration/study is required or		NA	

	Parameters	Details																																						
	suggested and time frame in which it is to be completed																																							
2.2.9	Year wise future programme of exploration	Not required																																						
2.2.10	Overall borehole density within the block (no./ sq. km) approx	10.45 as per EPR Nigahi (25 Mtpa)																																						
2.2.11	No of Seams available as per GR (Geological Report)	Top to Bottom and abbreviations used in this report <div>1. Purewa Top</div> <div>2. Purewa Bottom</div> <div>3. Purewa merged</div> <div>4. Turra</div>																																						
2.2.12	Seams not considered for Mining with Reasons	Kota seam 0.12-1.39 (Very thin)																																						
2.2.13	Dip of the Seam	2° to 3°																																						
2.2.14	Seam wise thickness, depth and reserve As per EPR of Nigahi OCP (25.00 Mtpa) as on 01.04.2020 <table><tr><th rowspan="2">Lithology</th><th colspan="2">Thickness Range</th><th colspan="2">Depth of Occurrence from surface</th><th rowspan="2">Mineable Reserve (Mt)</th></tr><tr><th>From</th><th>To</th><th>From</th><th>To</th></tr><tr><td>Purewa Top</td><td>4.00m</td><td>10.94m</td><td>30.50m</td><td>105.6m</td><td rowspan="3">261.66</td></tr><tr><td>Purewa Bottom</td><td>8.80m</td><td>14.70m</td><td>35.50m</td><td>116.97m</td></tr><tr><td>Purewa merged</td><td>17.57m</td><td>27.50m</td><td>77.65</td><td>182.90</td></tr><tr><td>Turra</td><td>11.08m</td><td>19.20m</td><td>44.60m</td><td>262.53m</td><td>211.58</td></tr><tr><td colspan="5">Total</td><td>473.24</td></tr></table>		Lithology	Thickness Range		Depth of Occurrence from surface		Mineable Reserve (Mt)	From	To	From	To	Purewa Top	4.00m	10.94m	30.50m	105.6m	261.66	Purewa Bottom	8.80m	14.70m	35.50m	116.97m	Purewa merged	17.57m	27.50m	77.65	182.90	Turra	11.08m	19.20m	44.60m	262.53m	211.58	Total					473.24
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Total					473.24																																			

	Parameters	Details
2.2.15	Methodology of reserves estimation (also mention if any software package has been used).	The Project Report i.e. EPR Nigahi OCP (25 Mtpa), peak 25.00 Mtpa has been designed in the EPR for Nigahi OCP (25 Mtpa) has been envisaged with inclusion of remaining and major part small part of Nigahi Block of Nigahi North extension Block, Nigahi Dip Extension Block and very small part of Block-B Extension Block & Bijul Block of Moher Sub-basin of Singrauli coalfield to augment the coal reserve for a targeted output of 25.00 Mtpa over the life of 18 years. Plans and cross sections have used for reserve estimation. AUTOCAD software is being used for reserve estimation. Grade Wise, Seam wise and Depth wise Tonnage of coal is calculated using the Detailed Resource Reporting method of MINEX software.
2.2.16	Wt. Average GCV "KCal/kg"	G-9
2.2.17	Gross Geological Reserve of the block "Mte"	552.11 as on 31.03.2020
2.2.18	Net Geological Reserve of the block "Mte"	496.90 as Per EPR(25 Mtpa) as on 31.03.2020
2.2.19	Minable Reserve of the block "Mte" as on	473.24 as Per EPR(25 Mtpa) as on 31.03.2020
2.2.20	Blocked Reserve "Mte"	nill
2.2.21	Corresponding extractable reserve of the block "Mte"	473.24

	<i>Parameters</i>	<i>Details</i>
2.2.22	Percentage of Extraction	95%
2.2.23	Reserve already depleted (Base date of Mining Plan)	342.67 (upto 31.03.2023)
2.2.24	Balance Reserve (as on Base Date)	409.10 (As on 01.04.2023)

CHAPTER 3**MINING**

	Parameters	Details
3.1	MINING METHOD	
3.1.1	Existing method of mining if the mine is under operation	Nigahi OCP is being worked by combined system of mining using shovel-dumper system, Dragline and Surface Miner in coal.
3.1.2	Proposed method of mining with justification on suitability of method of mining	There is no change in the method of mining for coal extraction and OB removal.
3.1.3	Coal production capacity proposed "Mtpa"	25.00 Mtpa
3.1.4	Justification for optimization of Coal production capacity	Mining Plan (including Mine Closure Plan) has been prepared based on plans and Mine Lease hold boundary of EPR (25.00Mtpa) Provided by Project for obtaining Environmental Clearance for 25.00 Mtpa for supply of coal to thermal power stations and other consumers to meet the increased energy demand in the country been prepared with a production capacity of 25.00 Mtpa (Additional Land Area of 564.323 Ha.)
3.1.5	Calendar year from which the production will start	It is an operating mine.
3.1.6	Year of achieving rated production	2023-24

	Parameters	Details				
3.1.7	Tentative Coal Production Plan “MT”					
		Year	Year	Coal (Mt)	OB (Mm3)	SR (m3/t)
		2023-24	Yr-1	25.00	133.12	5.32
		2024-25	Yr-2	25.00	135.00	5.40
		2025-26	Yr-3	25.00	135.00	5.40
		2026-27	Yr-4	25.00	135.00	5.40
		2027-28	Yr-5	25.00	135.00	5.40
		2028-29	Yr-6	25.00	135.00	5.40
		2029-30	Yr-7	25.00	135.00	5.40
		2030-31	Yr-8	25.00	135.00	5.40
		2031-32	Yr-9	25.00	135.00	5.40
		2032-33	Yr-10	25.00	128.00	5.12
		2033-34	Yr-11	25.00	122.99	4.92
		2034-35	Yr-12	25.00	120.76	4.83
		2035-36	Yr-13	25.00	106.03	4.24
		2036-37	Yr-14	25.00	104.48	4.18
		2037-38	Yr-15	20.00	80.26	4.01
		2038-39	Yr-16	18.00	60.75	3.38
		2039-40	Yr-17	14.00	45.00	3.21
		2040-41	Yr-18	7.10	15.00	2.11
		Total	409.10	1996.39	4.88	
3.1.8	Rated Capacity “Mtpa”					
	- By OC	25.00 Mtpa				
	- By UG	-				
	- Overall	25.00 Mtpa				
3.1.9	Life of the mine: “Years”					
	- By OC	18				
	- By UG	-				
	- Overall	18				

	Parameters	Details
3.1.10	Whether the proposed external OB dump site is coal bearing: If so, whether coal/ lignite below waste disposal area is extractable.	No
3.1.11	Whether negative proving for coal/ lignite in the proposed site for OB dump/ infrastructure has been done.	Not required.
3.1.12	Results of any investigation carried out for scientific mining, conservation of minerals and protection of environment; future proposals.	Slope stability study for pit and dump slopes, hydro-geology study and washability study proposed.

	Parameters	Details				
3.1.13	Type of Equipment/ HEMM proposed	List of HEMM				
		The position of major auxiliary & mining and transport equipment existing at the project as on 01.04.2023 vis-à-vis sanctioned provision as per approved option of EPR is given below:				
		Sl. No.	HEMM	Size/ Capacity	Total EPR (25 Mtpa)	Existing as on 01.04.23
		A	OB Removal			
		1	Dragline	24m³/88mR	2	2
		2	Dragline	20m³/83mR	2	2
		3	Elect. Rope Shovel	20m³	8	3
		4	Elect. Rope Shovel	10m³	-	5+5*
		5	RBH Drill	311mm	4	4
		6	RBH Drill	250mm	16	11
		7	Rear Dumper	190-210T	58	33
		8	Rear Dumper	120T	-	1
		9	Rear Dumper	100T	-	
		10	Rear Dumper	85T	-	11
		11	Dozer	770/850 HP	15	6+1*
		12	Dozer	410 HP	-	8+5*
		B	Coal Winning			
		1	Elect. Rope Shovel	10m³	-	3
		2	Diesel Hyd. shovel	10-12 m³	6	2
		3	Surface Miner	900-1000HP (50T Class)	4	2
		4	RBH Drill	160mm	8	7
		5	Rear Dumper	100T	40	25+9*
		6	Dozer	410 HP	7	5

	Parameters	Details				
		C	Common			
		1	Motor Grader	550 HP	5	
		2	Motor Grader	280 HP	-	6+2*
		3	Motor Grader	145 HP	-	
		4	Crane	120 T	2	2
		5	Crane	70-100 T	2	2
		6	Crane	40-60 T	2	1
		7	Crane	18-20 T	4	2
		8	Crane	8-12T	4	6
		9	Hyd.Shovel/Back-hoe	3.2/3.8m³	3	2
		10	Hyd.Shovel/Back-hoe	1.2/1.5m³	-	1
		11	FE Loader	10-12m³	2	1
		12	FE Loader	5.74/6.4m³	-	
		13	Wheel Dozer	450HP	4	1
		D	Reclamation			
		1	Dozer	410 HP	5	4
		2	Motor Grader	550 HP	2	
		3	Motor Grader	280 HP	-	1
		4	Hyd. Backhoe	0.9/1.2m³	-	
		5	Tipping Truck	8m³	5	
		6	Water Sprinkler	70KL	8	6
		7	Water Sprinkler	28KL	4	3+2#
		8	Road Sweeping Machine	-	2	
		9	Water Sprinkler (Mist Spray Gun)	-	4	
		*Survey-off but use				
		#Converted water tankers				

CHAPTER 4

SAFETY MANAGEMENT

	<i>Parameters</i>	<i>Details</i>
4.1	Safety Management	
4.1.1	Important safety aspects:	<p>Safety of men and machine deployed in the mining area should be properly taken care of irrespective of whether the mining activities are performed by departmental or by outsourcing means.</p> <p>All the statutory provisions laid down in The Mines Act 1952, Coal Mine Regulation 2017 and specific permission from DGMS relating to mining in general and opencast mining in particular have to be adhered to and implemented in order to maintain day to day safety.</p> <p>1. Safety aspects for of HEMM / equipment</p> <p>Special precaution should be taken while deploying workers in the mine. Before employing any person to the mine proper vocation training should be imparted and recommendations of various Safety Conferences should be strictly followed. Some of the major aspects are as follows:</p> <p>A) For persons:</p> <ul style="list-style-type: none"> i) No persons shall be deployed unless he is trained at VTC and holds VTC Certificates. A record of the same shall be maintained. ii) Records in Form-B and Form-D shall be maintained. iii) Records of driving license of operators shall be kept by competent authority and shall be made readily available for inspection by management.

	Parameters	Details
		<p>iv) Adequate supervision shall be maintained by competent persons, including officials and technicians.</p> <p>B) For Machineries: Provisions of Regulation 109, 110, 216 & 217 of CMR 2017 and DGMS Cir. (Tech.) 1 of 1999 should be strictly adhered to along with the following:</p> <p>i) All machinery and plant used in connection with working of a mine shall be of good design, sound construction, and suitable material, adequate strength, free from patent defect and properly maintained.</p> <p>ii) The owner, agent and manager shall provide adequate training facilities and ensure proper training of persons employed for operation and maintenance of machinery and plant.</p> <p>iii) No person except an engineer or other competent person under his supervision shall undertake any work on machinery and plant in which technical knowledge or experience is required.</p> <p>iv) All the machineries to be deployed in mines shall be so designed as to afford the operator clear and uninterrupted vision all around.</p> <p>v) Every heavy earth moving machineries, including trucks and tippers, used in mine shall be fitted with adequate safety features or devices as specified by DGMS. All equipment shall be provided with audio-visual alarms, proper light for use at night and fitted with suitable type of the fire extinguishers.</p> <p>vi) Truck mounted drill machines designed for tube well drilling for sources of water shall not be used</p>

	Parameters	Details
		<p>and only proper type of blast hole drill machine, especially designed for mining purpose, shall be used in the mine.</p> <p>vii) Every heavy earth moving machinery shall be under the charge of a competent person (Operator or Driver), authorized in writing by the Manager.</p> <p>viii) All persons employed or to be employed to operate heavy earth moving machinery shall be trained and their competency shall be evaluated by a Board constituted by the management, who shall be persons who are not connected with imparting of training.</p> <p>ix) A proper record of repair and maintenance along with inspection done by competent authority and defect pointed out shall be maintained and signed by authorized person.</p> <p>x) Only such fitters or mechanics possessing driver's or operator's license, shall be allowed to carry out test-run of heavy earth moving machineries.</p> <p>xi) No person other than the operator or the driver or any person so authorised in writing by the manager shall be allowed to ride on a heavy earth moving machinery</p> <p>C) General:</p> <p>i) Every person shall strictly adhere to the provisions of the Act and of the rules and regulations and to any order or direction issued by the manager or an official with a view to the safety or convenience of persons not being inconsistent with the Act, rules and these regulations; nor shall he neglect or refuse to obey such orders or directions.</p>

	Parameters	Details
		<p>ii) Every person shall, immediately before proceeding to work and immediately after terminating work at the end of his shift have his name recorded in the appropriate register.</p> <p>iii) Risk Management Plan of tipper/pay loader shall be made and implemented.</p> <p>iv) All operators/drivers so authorised by the Manager shall observe the Regulation 62 and 63 of CMR 2017 and obey the systematic traffics rules prepared by management</p> <p>v) Before deploying workers, they must be trained and briefed about safety aspects in opencast mine. However, during course of execution of the work, if any accident occurs whether major or minor, the matter shall have to be immediately informed to mine management i.e. Colliery Manager/Agent/GM of Area so that Notices of accidents in a accordance of (Reg. 8 of CMR 2017) and Section 23 of The Mines Act 1952 may be given and other necessary steps may be taken in accordance with the Mines Act 1952.</p> <p>vi) Mine authority shall operate transport system in such a way so as to minimize pollution in the mine.</p> <p>2. STABILITY OF BENCHES, QUARRY HIGHWALLS AND SPOIL DUMPS</p> <p>During quarry operations, it is necessary to adopt required mining parameters for the stability of benches, high-walls and spoil dumps. It is also mandatory to examine systematically the fencing of mine workings, landslides and cracks between benches. It is required to maintain well-graded and wide roads on benches</p>

	Parameters	Details
		<p>keeping the width of working areas sufficient for spreading of blasted rock and movement of the mining and transport equipment.</p> <p>During actual mining operation, systematic observations of the condition of benches, high wall slopes and spoil dumps should be carried out and the dimensions be modified if necessary to suit the local conditions. To ascertain the optimum slope angles for stability of quarry benches, high-walls and spoil dumps, scientific study of slope stability along with hydro-geological study of the area needs to under taken.</p> <p>During actual mining operation, systematic observations of the condition of benches, high wall slopes and spoil dumps should be carried out and the dimensions be modified if necessary to suit the local conditions.</p> <p>Provisions laid down in Reg. 106 and 108 of the Coal Mines regulation 2017 shall be strictly adhered to for the safety of quarry and OB/ spoil dumps. In addition to this, the following precaution should be considered:</p> <ul style="list-style-type: none"> i) The spoil dump height should not exceed 150m (maximum from ground level as mentioned in EC letter no. J-11015/79/2013-IA.II(M) dated 19.03.2015) with an overall slope of 28° or less. In the event of encountering steep floor gradient, floor blasting should be done and the area properly levelled by dozer before spoil dumping. ii) No working or construction should be allowed within the 60m toe of the OB dump. iii) Before dumping the OB on the floor of seam, at least 10m length all along the strike length should be made horizontal at every 50 meter by floor dinting/blasting.

	Parameters	Details
		<p>iv) Dump should be created in such a way that there is no chance of accumulation of water in and around the base of dump as it will adversely affect the shear strength of the base material of dump. It must be ensured that there is no stagnant water at the toe of dump and the top of the dump.</p> <p>v) The toe and face of the dump should not be eroded or cut at any point of time to avoid slope failure. A suitable toe wall should be created along the dump periphery.</p> <p>vi) Formation of dumping should be done in square or circular or any regular shape as far as possible.</p> <p>vii) Proper drainage system should be provided to bring down rain water by construction of inclined drain on dump face and catch drain on all benches.</p> <p>viii) During active period of dump, all rain water should be diverted away from mining site as far as possible.</p> <p>ix) Sump and pumping capacity should be sufficient to accommodate peak surface run-off and seepage of water.</p> <p>x) Gabion wall and garland drain should be constructed and maintained to trap the surface run-off and sludge coming from dump.</p> <p>xi) Plantation and grassing should be done on top and slope of the dump respectively.</p> <p>xii) Regular monitoring is required for development of tension crack, gullies, movement of soil mass, stagnation of water and any other unusual occurrence. In case of dump movement, rate of movement of dump should be monitored. Special</p>

	Parameters	Details
		<p>attention should be given at curve area/turning area of the dump.</p> <p>3. PRECAUTIONS AGAINST DANGER OF INUNDATION FROM SURFACE WATER</p> <p>1) Adequate protection against any danger of inrush of surface water into the mine or part shall be provided and maintained to the satisfaction of DGMS, whose decision shall be final.</p> <p>2) The entrance into the mine shall be so designed, constructed and maintained that its lowest point (which means the point at which a body of rising water on surface can enter the mine) shall be not less than 3.0 meters above the highest flood level at that point.</p> <p>3) Every year, during the rains constant watch shall be kept on the flood levels on the surface of the mine and if at any time the levels cross the highest levels earlier recorded, such levels shall be marked by permanent posts along the edges of water and the new highest levels thus observed shall be recorded with the date as the highest flood level on the plans by an actual survey.</p> <p>4) If water dams or reservoirs are built across rivers and water courses on the upstream side of the mine, arrangements shall be made for communication between appropriate authorities for the purpose of ascertaining the quantity and timing of water released from the dams which is likely to endanger safety of the mine and arrangement for similar communication shall be made when water level rises on the upstream side which is likely to endanger the mine.</p>

	Parameters	Details
		<p>5) The highest flood levels and danger levels at least 1.2 meters below the highest flood level, shall be permanently marked at appropriate places on the surface and whenever water rises towards the danger level at any place, all persons shall be withdrawn from the mine sufficiently in advance and for this purpose adequate arrangements of quick communication to all parts of the mine by effective systems shall be provided and maintained.</p> <p>6) No working shall be made in the mine at any spot lying within a horizontal distance of 15 meters from either bank of a river or nala.</p> <p>7) A competent person shall, once at least in every fourteen days during the rainy season and once at least in every thirty days during other periods of the year, examine every protective measure provided under regulations 149, whether in use or not, for their stability, and a report of every such examination shall be recorded. The protective measures and workings shall also be inspected, once at least in every quarter by the Manager personally.</p> <p>A careful assessment is to be made against the danger from surface water before the onset of rainy season. The necessary precautions should be clearly laid down and implemented. A garland drain needs to be provided to drain away the surface rain water from coming into the mine.</p> <p>8) Standing order for withdrawal of working persons in case of apprehended danger. During heavy rain inspection of vulnerable points is essential. In case</p>

	Parameters	Details
		<p>of any danger persons are to be withdrawn to safer places.</p> <p>4. PROTECTION OF EQUIPMENT DEPLOYED AT BOTTOM HORIZONS FROM FLOODING:</p> <p>During the heavy monsoon period, the mining operation in the lower-most bench may have to be stopped. Therefore, it is proposed to drown the lower-most bench, which would work as a sump. The water will be pumped out and discharged into the nearby nala/ river after proper sedimentation.</p> <p>For ensuring safety of the equipment while working out bottom horizons with no access to surface profile, the following measures should be taken:</p> <ul style="list-style-type: none"> i) Drivage of initial trenches if any and coal cutting on bottom benches should be done during the dry period of the year. ii) Ramps should be made for quick shifting of equipment from bottom horizons, liable to be flooded during monsoon period, to the top horizons. <p>5. PREVENTION OF ELECTRIC SHOCKS:</p> <p>During mining operations, all the statutory provisions of the Indian Electricity Rules 1956, and Indian Standards for installation and maintenance of electrical equipment etc. should be observed.</p> <ul style="list-style-type: none"> 1) For protection from electric shocks to persons, all electrical equipment with voltage up to 1000V should be provided with Earth Leakage Relay, which will automatically disconnect electrical circuits.

	Parameters	Details
		<p>2) Closed mobile substations and switchgears should be mechanically interlocked which exclude the possibility of opening the door when oil switch and air circuit breakers are in operation.</p> <p>3) All metal parts of electrical equipment should be properly earthed to avoid failure of insulation.</p> <p>4) All H.T lines and cables located within the blasting zones should be disconnected during charging & blasting operations.</p> <p>6. DUST SUPPRESSION & DILUTION OF EXHAUST FUMES:</p> <p>For precaution against dust, Regulation 143, 144 and 145 of CMR 2017 should be observed. Beside this the following measures should be adopted for dust suppression at all quarry working places, dumps, haul roads, CHP and near other auxiliary mining operations.</p> <p>i) Spraying with water on all working faces & haul roads, by special spraying machines or water-sprinkler.</p> <p>ii) While drilling holes, it is necessary to use dust extraction devices.</p> <p>iii) Installation of local dust suppression and air conditioning devices in cabins of excavators and drilling rigs may be considered.</p> <p>iv) Leveling of spoil dump surface.</p> <p>v) Separate dust suppression arrangement should be provided for CHP.</p> <p>To prevent collection of harmful mixtures in the atmosphere, from the different sections of quarry workings, it is recommended:</p>

	Parameters	Details
		<p>To spread out the sources of dust formation and omission of harmful gases throughout the working area of the quarry, the following precautions should be taken:</p> <ul style="list-style-type: none"> i) Drilling & blasting operations should be timed for periods of maximum wind activity during the day. ii) Dumpers may be provided with purifiers for exhaust gases. <p>7. MEASURES TO BE TAKEN FOR FIRE FIGHTING AND FIRE PREVENTION:</p> <p>In addition to statutory provisions as laid down in Reg 135, 139 and 140 of CMR 2017, the measures for firefighting and prevention of fires are as follows:</p> <ul style="list-style-type: none"> i) Organisation of special cell for systematic observations to examine and prevent fire. ii) Removal of spillage of coal on benches and cleaning of coal horizons to prevent cases of coal heating. iii) Storage of lubricants and cotton waste in enclosed fireproof containers in working places. iv) Provision of fire extinguishers. <p>8. MEASURES TO BE TAKEN WHILE DRILLING BLASTING:</p> <p>Following measures should be taken during drilling and blasting operation in the quarry beside the statutory requirements:</p> <ul style="list-style-type: none"> i) Drilling and Blasting in quarry should be done in accordance with the provisions of Mines Act, rules and regulations and based on the Standing Orders for the safe use of explosives.

	Parameters	Details
		<p>ii) Adequate safety measures have to be taken during blasting operation in the quarry so that men/machine is not affected.</p> <p>9. CONSERVATION</p> <p>Suitable measures should be taken to minimize coal loss during mining operations. Selective mining of in-seam dirt bands has been proposed. It is proposed not to dump any spoil material over coal bearing area, amenable for mining, at present or even at a future date.</p> <p>10. SCIENTIFIC STUDIES</p> <p>The slopes of the quarry and dumps have been proposed on the basis of experience in the adjoining areas. However, to ascertain optimum slope angles for stability of quarry batter and dumps a scientific study need be carried out. Similarly, hydro-geological study of the area is to under taken as none is available at present. Studies should also be carried out to ascertain the pattern of surface drainage, the manner of diversion of water courses to other water courses away from the mining area and the dimension of diversion dams, garland drains and other protective structures to be constructed.</p>

CHAPTER 5

INFRASTRUCTURE FACILITIES

	<i>Parameters</i>	<i>Details</i>
5.1	Mine infrastructure required e.g. Equipment maintenance planning, Office buildings, Workshop, Power Supply arrangement, Water supply, etc.	<p>Mine is in operation since 1985-86. All infrastructure like Equipment maintenance planning, Office buildings, Workshop, Power supply arrangement, Water supply etc. are in place.</p> <p>For this expansion, no separate extra arrangement is proposed.</p>
5.2	Power supply & illumination	<p>The Project is receiving power at 33 kV from Nigahi Sub-station of 132/33 kV MPEB located in Jayant, Distt. Singrauli (M.P).</p> <p>Nigahi Coal Substation is also being fed through 02 nos. 33 kV feeders drawn from OB east Sub-station and the circuit length is around 3 km. The existing CHP loads of are being fed through 3 x 10 MVA, 33 kV/6.6 kV receiving power through double circuit 33 kV feeder emanating from OB east Sub-station.</p> <p>Nigahi OB West Sub-Station receives power from Nigahi Sub-Station through double circuit overhead lines of 33 KV and OB East Sub-station receives power from OB West Sub-Station through double circuit overhead line of 33KV.</p> <p>Nigahi OB East and OB West Sub-station supply power to HEMM like draglines, shovels, drills etc. The Coal Sub-</p>

	Parameters	Details
		<p>stations supplies power to HEMM deployed in coal section, pumping, CHP, workshop etc.</p> <p>Nigahi Colony Sub-station is of capacity of 1X10 MVA, 33/6.6 KV and 1X5 MVA, 33/6.6KV and is being fed from Nawanagar Sub-station of 132/33KV system voltage. The colony Sub-station supplies power to colony, GM office, shopping complex etc.</p>
5.3	Drainage & Pumping: Assessment of volume of water for Pumping, Pumping Capacity	<p>Pumps, Pipes and Fittings:</p> <p>Pumping system has been designed for the volume of water accumulated in the mine and the target plus five year production considering maximum rainfall in a day as 214mm. Peak Pumping Quantity is worked out to be 1156025 m³, the de-watering will be 5 day with 20 hr pumping every day. Thus pumping capacity required is 11560 m³.</p> <p>Drainage of Water on Surface</p> <p>Fresh garland drains shall be made before every monsoon at the peripherally of active edge of the quarry to prevent the surface rain water to enter the quarry.</p> <p>A sedimentation pond/lagoon shall be made between the qualities and mine water will be discharged into it. After sedimentation of suspended particles, the fresh water will be discharged in to river/nalla.</p>
5.4	Coal Handling Arrangement : Brief detail of CHP/ Mode of Dispatch, Coal quality and coal	<p>COAL HANDLING ARRANGEMENT</p> <p>Existing CHP of 15 Mtpa (4.2Mtpa Phase-I and 5.8 Mtpa Phase-II and 5 Mtpa Phase-III) has already been constructed and is in operation. Existing CHP broadly has the facilities of four number of receiving and crushing complex, two number of bunkers for storage and reclamation, two silos with rapid loading system, and associated conveyor system.</p>

	Parameters	Details
	staking and handling arrangement	Two CHP each of 5 Mtpa namely West (Turra or Purewa coal) & East (Purewa coal) has been proposed. In the West section, it is proposed to install one number semi -mobile primary crushing plant and subsequently one number twin shaft secondary sizer for blasted coal and five nos receiving hoppers (Cap.- 100 Te each) for surface miner coal along with required conveyor system of 1600 TPH rated capacity (peak capacity 1920 TPH). In the East (Purewa coal) section, it is proposed to install five nos receiving hoppers (Cap.- 100 Te each) for surface miner coal along with conveyor system of 1600 TPH capacity (peak capacity 1920 TPH). Total handling capacity of the CHP including existing and pro-posed will be 25 Mtpa (15 Mtpa existing + 10 Mtpa incremental proposed) which will cater the target coal of 25 Mtpa. Incremental CHP (10 Mtpa) is under construction.
5.5	Coal washing and the proposed handling/ disposal of rejects.	NA

CHAPTER 6 LAND REQUIREMENT


	<i>Parameters</i>	<i>Details</i>														
6.1	LAND REQUIREMENT															
6.1.1	Total Land requirement for the mine in “Ha”	<i>Break up Additional Land details:</i>														
		<table><tr><td>Land Type</td><td>Area (Ha)</td></tr><tr><td>Tenancy land</td><td>188.000</td></tr><tr><td>Govt. Non Forest land</td><td>146.975</td></tr><tr><td>Forest land</td><td>229.348</td></tr><tr><td>Total additional Land</td><td>564.323</td></tr><tr><td>Possessed land as on 31.03.2023</td><td>3018.400</td></tr><tr><td>Total</td><td>3582.723</td></tr></table>	Land Type	Area (Ha)	Tenancy land	188.000	Govt. Non Forest land	146.975	Forest land	229.348	Total additional Land	564.323	Possessed land as on 31.03.2023	3018.400	Total	3582.723
		Land Type	Area (Ha)													
		Tenancy land	188.000													
		Govt. Non Forest land	146.975													
		Forest land	229.348													
		Total additional Land	564.323													
		Possessed land as on 31.03.2023	3018.400													
Total	3582.723															

	Parameters	Details								
6.1.2	Land use of total leasehold Area (3582.723 Ha) during mining									
	Type	Land use (Proposed)	Land Use (End of Life)	Land Use (Post Closure)						
				Agriculture Land	Plantation	Water Body (including batter)	Public/ Company Use	Forest Land (Returned)	Undisturbed Land	Total
	Excavation Area	2146.17	0							0
	Backfilled Area	0	1755.933		1755.933					1755.933
	Excavated Void	0	390.237			390.237				390.237
	Without plantation	0	0							0
	Top Soil Dump	0	0							0
	External Dump	418	418		418					418
	Safety Zone	5.32	5.32						5.32	5.32
	Others & undisturbed land	126.331	126.331						126.331	126.331
	Haul Road between quarries	0	0							0
	Road diversion	0	0							0
	Diversion/ below River/Nala/ canal	0	0							0
	Settling pond	0	0							0
	ETP, CHP, workshop Colony area, & Infrastructure area	395.992	395.992		130.992		265			395.992
	Road & Railways	74	74				74			74
	Sand Plant	7.5	7.5		7.5					7.5
	Garland drains	0	0							0
	Embankment	0	0							0
	Green Belt & Solar Plant	409.41	409.41		409.41					409.41

	Parameters		Details								
	Water Reservoir near pit	0	0							0	
	Resettlement	0	0							0	
	Pit head power plant	0	0							0	
	Water harvesting	0	0							0	
	Agricultural land	0	0							0	
	Total	3582.723	3582.723	0	2721.835	390.237	339	0	131.651	3582.723	
	Land use of Additional Required Area during mining										
	Type of Land	Land use during Mining									
		Safety Zone (Area in Ha)				Quarry Area (Area in Ha)		Total			
		Forest				2.36		226.988		229.348	
		Total Non-forest				2.96		332.015		334.975	
		Total				5.32		559.003		564.323	
6.1.3	Surface features over the block area		Coal Mine and infrastructure.								
6.1.4	No. of villages/ Houses to be shifted		Project Displaced Families is 445.								
6.1.5	Population to be affected by the project		4000 Project Affected Families								
6.1.6	Proposed Rehabilitation programme		Proposed Rehabilitation Programme: The expansion project involves 4000 project affected families (445 Project Displaced Families). The R&R of the PAPs will be done as per R&R policy of Coal India Limited, which is in consonance of National R&R policy.								

CHAPTER 7

ENVIRONMENTAL MANAGEMENT

	Parameters	Details
7	ENVIRONMENTAL MANAGEMENT	
7.1	Commitment from the project proponent that the company will comply Environment and Forest Condition stipulated in the respective clearances	<p>In order to carry out the proposed mining activity in an environmentally sustainable manner, suitable environmental protection measures shall be taken up at different stages of project operation and post closure. A certificate of commitment from Project Proponent that the project will comply with the conditions stipulated in the Environmental Clearance and Forest Clearance is given below.</p> <p>In addition to this, some environmental protection measures have been suggested as a part of mine closure activities, as detailed in the section 8.10 in this report.</p> <div style="text-align: center;">  <p>CERTIFICATE</p> <p>This is to certify that Nigahi Opencast Project (25 MTPA) during its operation will comply with the conditions stipulated in the Environment Clearance and Forest Clearance.</p> <p><i>[Signature]</i> 13.07.2023 Project Officer Nigahi Opencast Project</p> <p><i>[Signature]</i> 13/07/2023 Area General Manager Nigahi Opencast Project</p> </div>

CHAPTER 8

PROGRESSIVE & FINAL MINE CLOSURE PLAN

	Parameters	Details							
8.1	Land Degradation and restoration Schedule								
8.1.1	Tentative Land Degradation and Technical Reclamation (Commutative Area "Ha")								
	Year / Stage	Land Degraded Area in Ha				Technically Reclaimed Area			
		Excav	Dump (Ext. + Top soil)	Infra / others	Total	Backfill	Dump (Ext. + Top soil)	Others	Total
	Up to Base year (01.04.2023)	1190.47	418	477.492	2085.96	703.35	418	138.49	1259.842
	Y-1	1260.47	418	477.492	2155.96	753.35	418	138.492	1309.842
	Y-3	1352.97	418	477.492	2248.46	873.35	418	138.492	1429.842
	Y-5	1510.50	418	477.492	2405.99	993.35	418	138.492	1549.842
	Y-10	1861.20	418	477.492	2756.69	1343.35	418	138.492	1899.842
	Y-15	2020.50	418	477.492	2915.99	1643.35	418	138.492	2199.842
	Y-18	2146.17	418	477.492	3041.66	1755.933	418	138.492	2312.425
	Post Closure	2146.17	418	477.492	3041.66	1755.933	418	138.492	2312.425
	8.1.2	Tentative Biological Reclamation (Cumulative in “Ha”)							
Year/Stage		Biologically Reclaimed Area in Ha.					Forest land (Return) in Ha	UnDisturbed / To be left for Public / company Use	Total
(Life of the mine plus post closure period)		Agriculture	Plantation(Internal + External Dump)	Water Body	Plain Area	Total			
Up to Base year 01.04.2023		-	523.33	-	335	858.33	-	470.651	1328.981
Y-1		-	573.33	-	335	908.33	-	470.651	1378.981
Y-3		-	673.33	-	335	1008.33	-	470.651	1478.981
Y-5		-	773.33	-	335	1108.33	-	470.651	1578.981
Y-10		-	1023.33	-	335	1358.33	-	470.651	1828.981
Y-15		-	1273.33	-	335	1608.33	-	470.651	2078.981
Y-18		-	1473.33	-	335	1808.33	-	470.651	2278.981
Post Closure		-	2173.933	*390.237	547.90	3112.072	-	470.651	3582.723
*including quarry batter									

	Parameters	Details								
8.2	Post Closure Water Quality management:	Water quality monitoring will be carried out quarterly during the post closure stage, as per the CPCB Norms and will be compared with the IS 10500:2012 & 2015. The actual end use and treatment measures, if any required will be decided at the post closure stage depending upon the quality of water.								
8.3	Post Closure Air Quality management	<p>Air quality monitoring will be carried out throughout the life of mine and at post closure stage to assess the impact of proposed activity on the surroundings.</p> <p>No. of location of stations shall be fixed as per the MoEFCC norms and prevailing local factors.</p> <p>Air pollution control measures like development of greenbelt and avenue plantation, mobile water sprinkling along haul roads, fixed water sprinklers at stock yard, Crushers, CHP will be deployed to minimize the impact on surroundings.</p>								
8.4	Waste Management (Figures in Mm ³) (Tentative)									
	Year/ Stage	OB Removal in Mm3			External Dump		Internal Backfilling		Embankment	
	(Life of the mine plus post closure period)	(Cumulative)			(Cumulative)		(Cumulative)		(Cumulative)	
		Top Soil	OB	Total	Top Soil	OB	Top Soil	OB	Top Soil	OB
	Up to Base year	1.952	1169.128	1171.08	1.13	228.745	0.822	940.383	-	-
	Y-1	1.982	1302.058	1310.20	1.13	228.745	0.852	1079.473	-	-
	Y-3	2.042	1571.068	1580.20	1.13	228.745	0.912	1349.413	-	-
	Y-5	2.102	1839.768	1850.20	1.13	228.745	0.972	1619.353	-	-
	Y-10	2.702	2504.068	2514.23	1.13	228.745	1.572	2282.783	-	-
	Y-15	3.152	3035.038	3024.72	1.13	228.745	2.022	2792.823	-	-
	Y-18	3.402	3153.678	3157.08	1.13	228.745	2.272	2924.333	-	-
	Post Closure	3.402	3153.678	3157.08	1.13	228.745	2.272	2924.333	-	-

	Parameters	Details						
	Total Top soil to be generated is 3.402 Mm ³ , and this total volume of top soil will be utilized for concurrent biological reclamation of dumps and green belt.							
8.5	Top Soil Management – (Including Action plan for Top Soil management) (Tentative)							
	(All Figures are Cumulative and in Mm ³)							
	Year/Stage	Top Soil Removal Plan	Top Soil Used					
	(Life of the mine plus post closure period)		Spreading Over Embankment	Spreading over Backfill area	Spreading over External OB Dump area	Used in Green Belt area & Safety Zone	Used in land Dismantled	Total Utilised
	Up to Base year	1.952	-	0.822	1.13	-	-	-
	Y-1	1.982	-	0.852	1.13	-	-	-
	Y-3	2.042	-	0.912	1.13	-	-	-
	Y-5	2.102	-	0.972	1.13	-	-	-
	Y-10	2.702	-	1.572	1.13	-	-	-
	Y-15	3.152	-	2.022	1.13	-	-	-
	Y-18	3.402	-	2.272	1.13	-	-	-
Post Closure	3.402	-	2.272	1.13	-	-	-	
	Total Top soil to be generated is 3.402 Mm ³ , and this total volume of top soil will be utilized for concurrent biological reclamation of dumps and green belt.							
8.6	Management of Coal Rejects.		No such coal beneficiation facility is proposed in mine.					
8.7	Restoration of Land used for Infrastructure		It is proposed to restore land used for infrastructure by technical and biological reclamation by plantation, which will not be used by Public.					
8.8	Disposal of Mining Machinery		Mining machinery will either be surveyed off or transferred to other projects of NCL based on the balance life of HEMM. Detailed disposal plan will be submitted in					

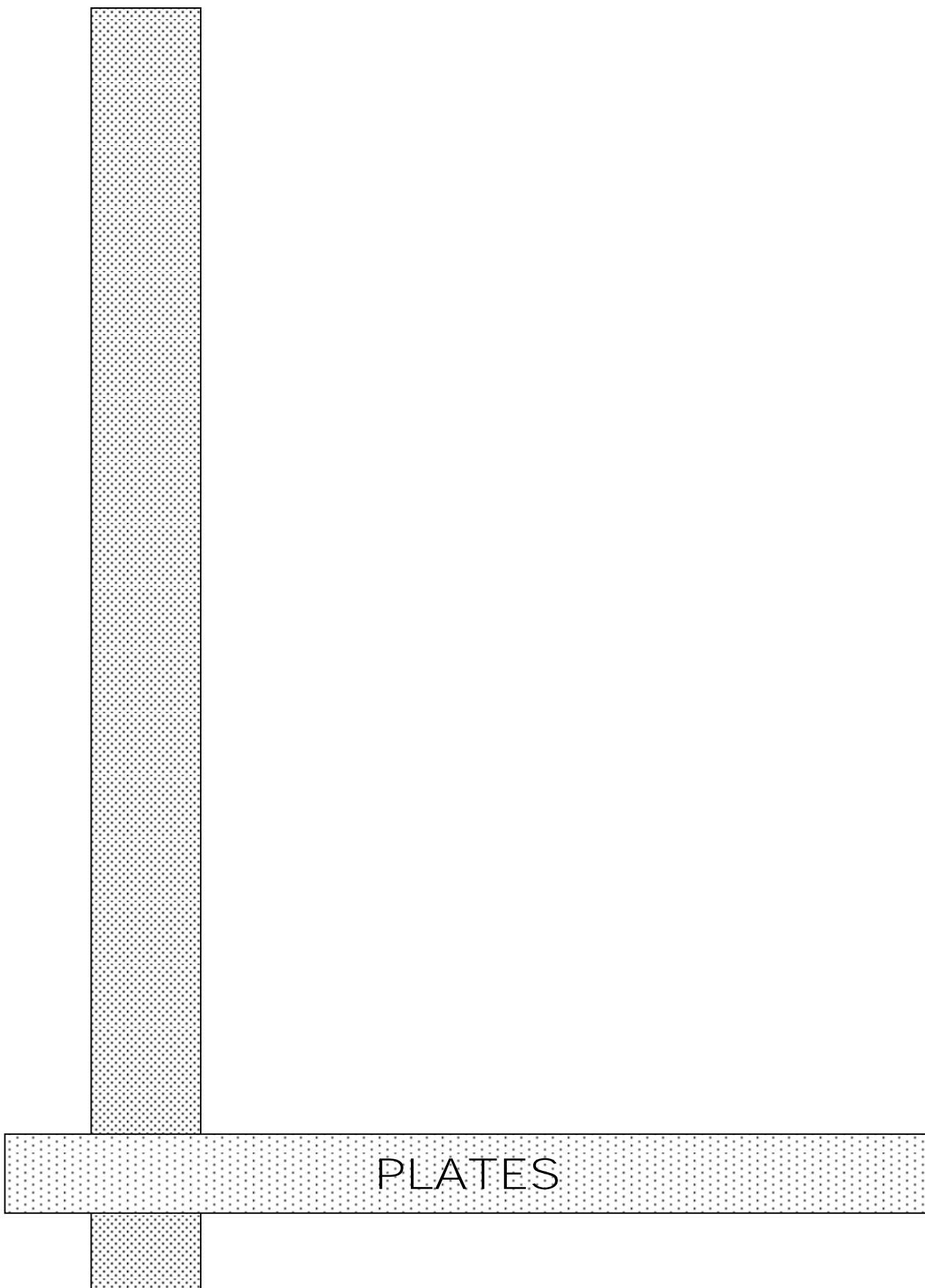
	Parameters	Details																																																						
		Final Mine closure plan at 13 th year of mine operation.																																																						
8.9	Safety & Security	Safety measures proposed during operation and post closure stage include concrete wall along mine boundary, toe wall/gabion wall along OB dumps, fencing around water bodies, garland drains etc. The measures to taken up for safety and security have been discussed in detail in Section 4.1																																																						
8.10	Abandonment Cost and Financial Assurance																																																							
8.10.1	Abandonment Cost: Proposed Cost break-up (of Balance Amount) for carrying out progressive and final mine closure activities as per the yardstick of CMPDI formulated based on the mine closure guidelines is as given below:																																																							
	<table><tr><th>Head</th><th>Activities</th><th>Unit</th><th>Quan-tity</th><th>Rate Rs./ unit</th><th>Amt.</th><th>Amount in lakhs</th></tr><tr><td rowspan="9">Progressive closure</td><td>Water quality management (ETP & STP etc. operating cost</td><td rowspan="3">LS</td><td></td><td></td><td></td><td rowspan="3">2564.50</td></tr><tr><td>Air quality management(Sprinkler, water tanker and other control measures)</td><td></td><td></td><td></td></tr><tr><td>Waste management</td><td></td><td></td><td></td></tr><tr><td>Filling of void – Rehandling of Crown Dump</td><td rowspan="3">LS</td><td></td><td></td><td></td><td rowspan="3">22985.53</td></tr><tr><td>Top soil management</td><td></td><td></td><td></td></tr><tr><td>Technical and Biological Reclamation of Mined out of land and OB Dump</td><td></td><td></td><td></td></tr><tr><td>Plantation over virgin area including green bell</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Manpower Cost and supervision</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Barbed wire fencing around dump</td><td>LS</td><td></td><td></td><td></td><td>1842.64</td></tr></table>	Head	Activities	Unit	Quan-tity	Rate Rs./ unit	Amt.	Amount in lakhs	Progressive closure	Water quality management (ETP & STP etc. operating cost	LS				2564.50	Air quality management(Sprinkler, water tanker and other control measures)				Waste management				Filling of void – Rehandling of Crown Dump	LS				22985.53	Top soil management				Technical and Biological Reclamation of Mined out of land and OB Dump				Plantation over virgin area including green bell						Manpower Cost and supervision						Barbed wire fencing around dump	LS				1842.64	
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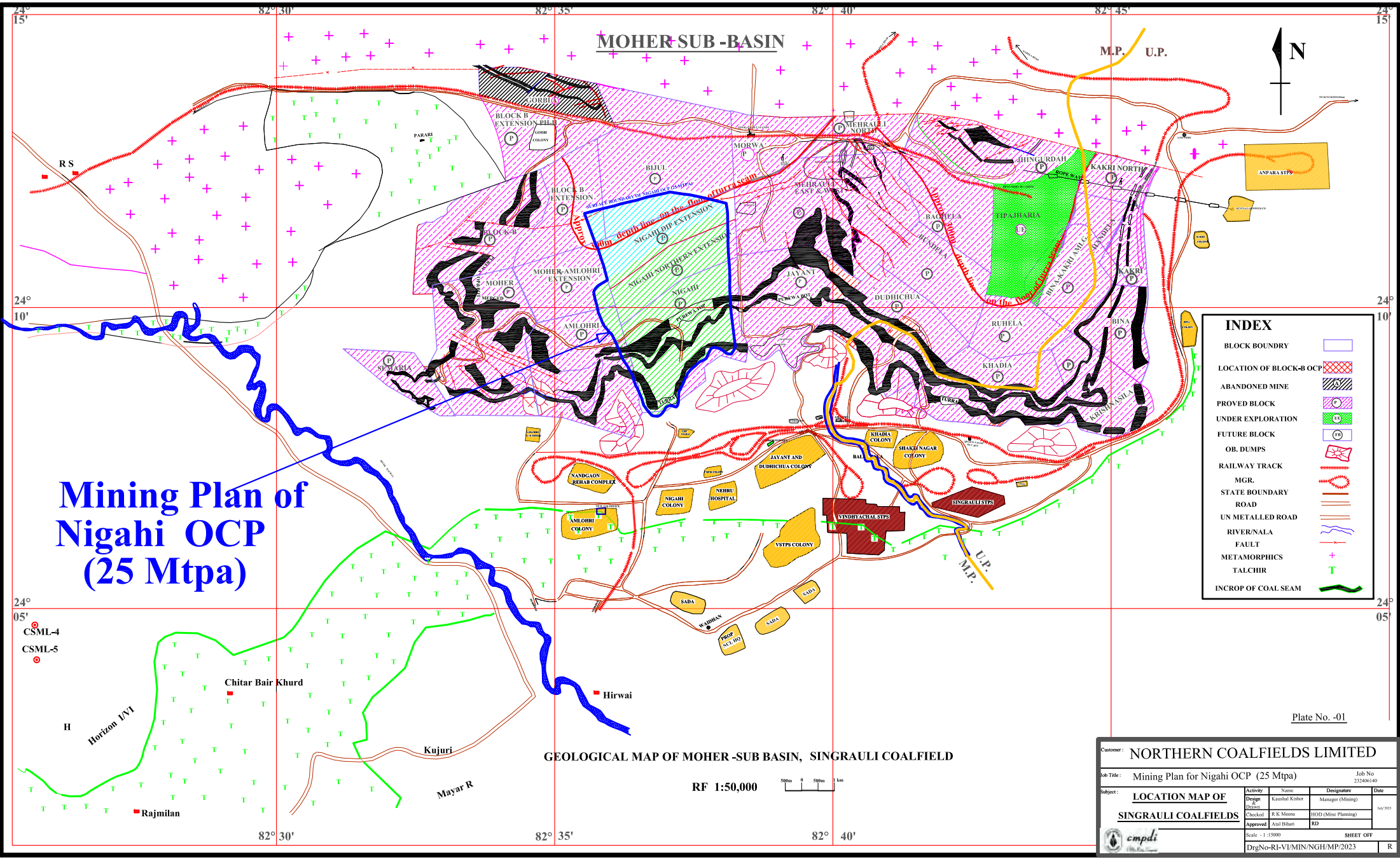
	Parameters		Details				
		Barbed wire fencing around the pit					
		Retaining wall/Toe Wall around the Dump					
		Garland drain & Catch drains					
		Garland drain around the Dump					
		Cleaning of garland drains and catch drains					
	Dismantling of structure & Disposal / rehabilitation of Mining machinery	Dismantling of workshop	LS				1614.69
		Rehabilitation of the dismantled facilities					
		Dismantling of pumps and pipes					
		Dismantling of stowing bunker					
		Dismantling of UG equipment					
		Rearranging water pipe line to dump top park/agricultural land					
		Dismantling of power lines					
	Technical and Biological Reclamation of mined out land	Filling of Void	LS				5072.01
		Top soil management					
		OB Re-handling for backfilling					
		Terracing, blanketing with soil and vegetation of External OB Dump					
		Peripheral road, gates, view point, cemented steps on bank					
		Expenditure on development of Agriculture land					
		Landscaping and Plantation	LS				1804.65
	Post cost management and supervision	Power cost	LS				607.88
		Post Mining Water quality management					
		Post Mining Air quality management					
		Subsidence monitoring					
		Waste management					
		Manpower cost and supervision					
	Others	Entrepreneurship development (vocational/skill development training for	LS				284.94

	Parameters		Details																																																
		sustainable income of affected people																																																	
		Golden handshake/Retrenchment benefits to 100 employees of OC	LS				1215.76																																												
		Onetime financial grant to societies/institutions/organisations which is dependent on project																																																	
		Provide jobs in other mines of the company																																																	
		Continuation of other services like running of schools etc.																																																	
	Total						37992.62																																												
8.10.2	Financial Assurance: Amount to be deposited in Escrow account as a security against the mine activities to be carried out for the closure of the mine																																																		
<table><tr><th colspan="2">ESCROW ACCOUNT</th></tr><tr><th colspan="2">Nigahi Expansion OCP(25.00 Mtpa)</th></tr><tr><td>Project Area (Ha)</td><td>3582.723</td></tr><tr><td>Escrow Amount per Ha. For OC Project as on April '2019 (lakhs/ Ha)</td><td>9</td></tr><tr><td>WPI as on April '2019</td><td>121.10</td></tr><tr><td>WPI as on June' 2023</td><td>149.00</td></tr><tr><td>Escrow Amount per Ha. For OC Project as on June 2023 (lakhs/ Ha)</td><td>11.07</td></tr><tr><td>Current value of corpus as on June' 2023</td><td>39660.74</td></tr><tr><td>Amount deposited till date in lakhs (31.03.2023)</td><td>15351.85</td></tr><tr><td>Balance Corpus for which provision is to be made</td><td>24308.89</td></tr><tr><td>Balance Life of mine</td><td>18</td></tr><tr><td>Rate of compounding of annual closure cost</td><td>5 %</td></tr><tr><td>Annual corpus (in Rs. Lakh)</td><td>1350.49</td></tr><tr><td>Year</td><td>Amount in Lakh (Rs.)</td></tr><tr><td>1</td><td>1350.49</td></tr><tr><td>2</td><td>1418.02</td></tr><tr><td>3</td><td>1488.92</td></tr><tr><td>4</td><td>1563.37</td></tr><tr><td>5</td><td>1641.53</td></tr><tr><td>6</td><td>1723.61</td></tr><tr><td>7</td><td>1809.79</td></tr><tr><td>8</td><td>1900.28</td></tr></table>								ESCROW ACCOUNT		Nigahi Expansion OCP(25.00 Mtpa)		Project Area (Ha)	3582.723	Escrow Amount per Ha. For OC Project as on April '2019 (lakhs/ Ha)	9	WPI as on April '2019	121.10	WPI as on June' 2023	149.00	Escrow Amount per Ha. For OC Project as on June 2023 (lakhs/ Ha)	11.07	Current value of corpus as on June' 2023	39660.74	Amount deposited till date in lakhs (31.03.2023)	15351.85	Balance Corpus for which provision is to be made	24308.89	Balance Life of mine	18	Rate of compounding of annual closure cost	5 %	Annual corpus (in Rs. Lakh)	1350.49	Year	Amount in Lakh (Rs.)	1	1350.49	2	1418.02	3	1488.92	4	1563.37	5	1641.53	6	1723.61	7	1809.79	8	1900.28
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7	1809.79																																																		
8	1900.28																																																		

	Parameters	Details
	9	1995.29
	10	2095.06
	11	2199.81
	12	2309.80
	13	2425.29
	14	2546.56
	15	2673.89
	16	2807.58
	17	2947.96
	18	3095.36
	Amt. to be deposited after compounding	37992.62

=000000000000=





INDEX	
BLOCK BOUNDARY	
LOCATION OF BLOCK-B OCP	
ABANDONED MINE	
PROVED BLOCK	
UNDER EXPLORATION	
FUTURE BLOCK	
OB. DUMPS	
RAILWAY TRACK	
MGR.	
STATE BOUNDARY	
ROAD	
UN METALLED ROAD	
RIVER/NALA	
FAULT	
METAMORPHICS	
TALCHIR	
INCROP OF COAL SEAM	

Customer : NORTHERN COALFIELDS LIMITED

Job Title : Mining Plan for Nigahi OCP (25 Mtpa)

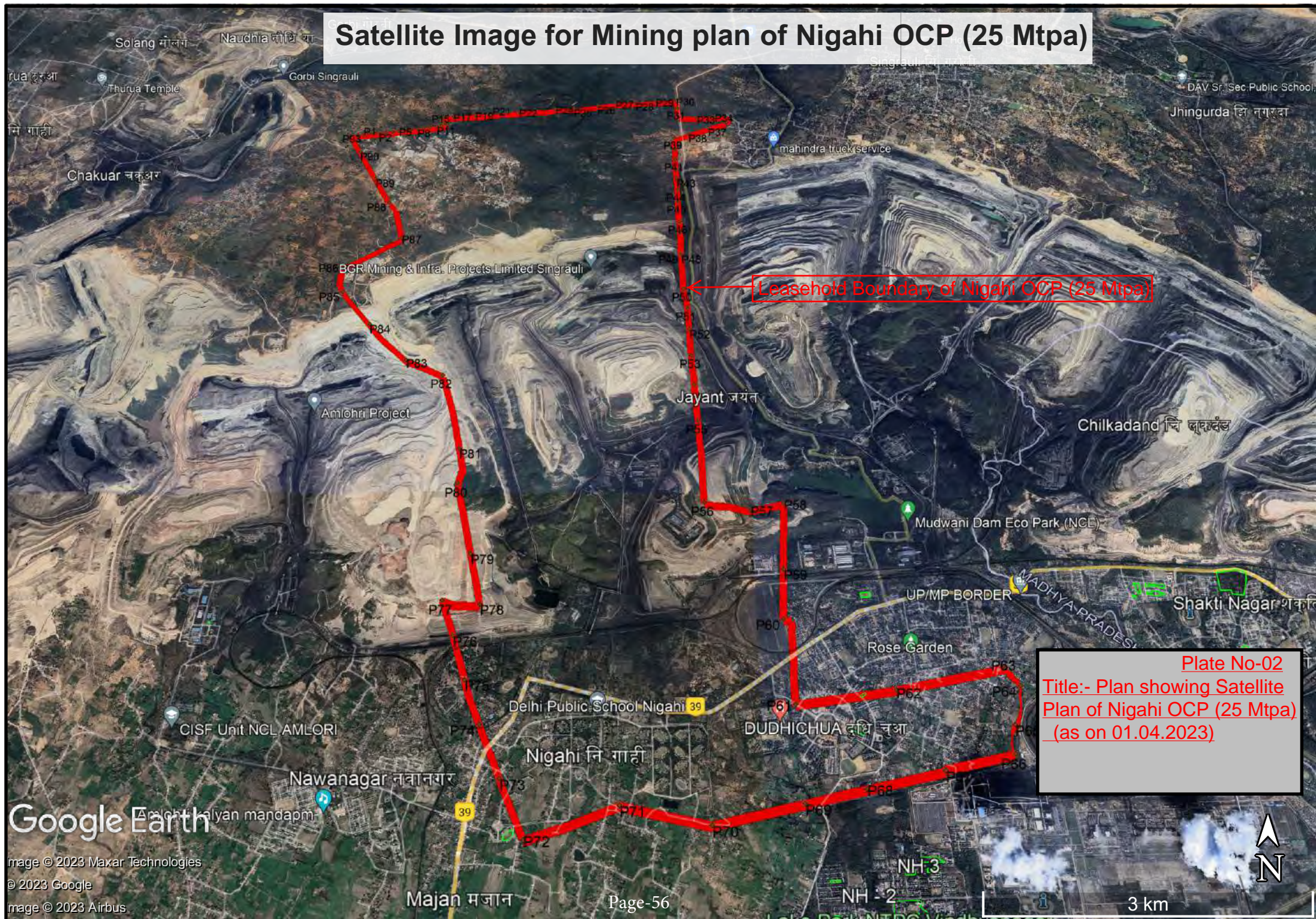
Subject : LOCATION MAP OF SINGRAULI COALFIELDS

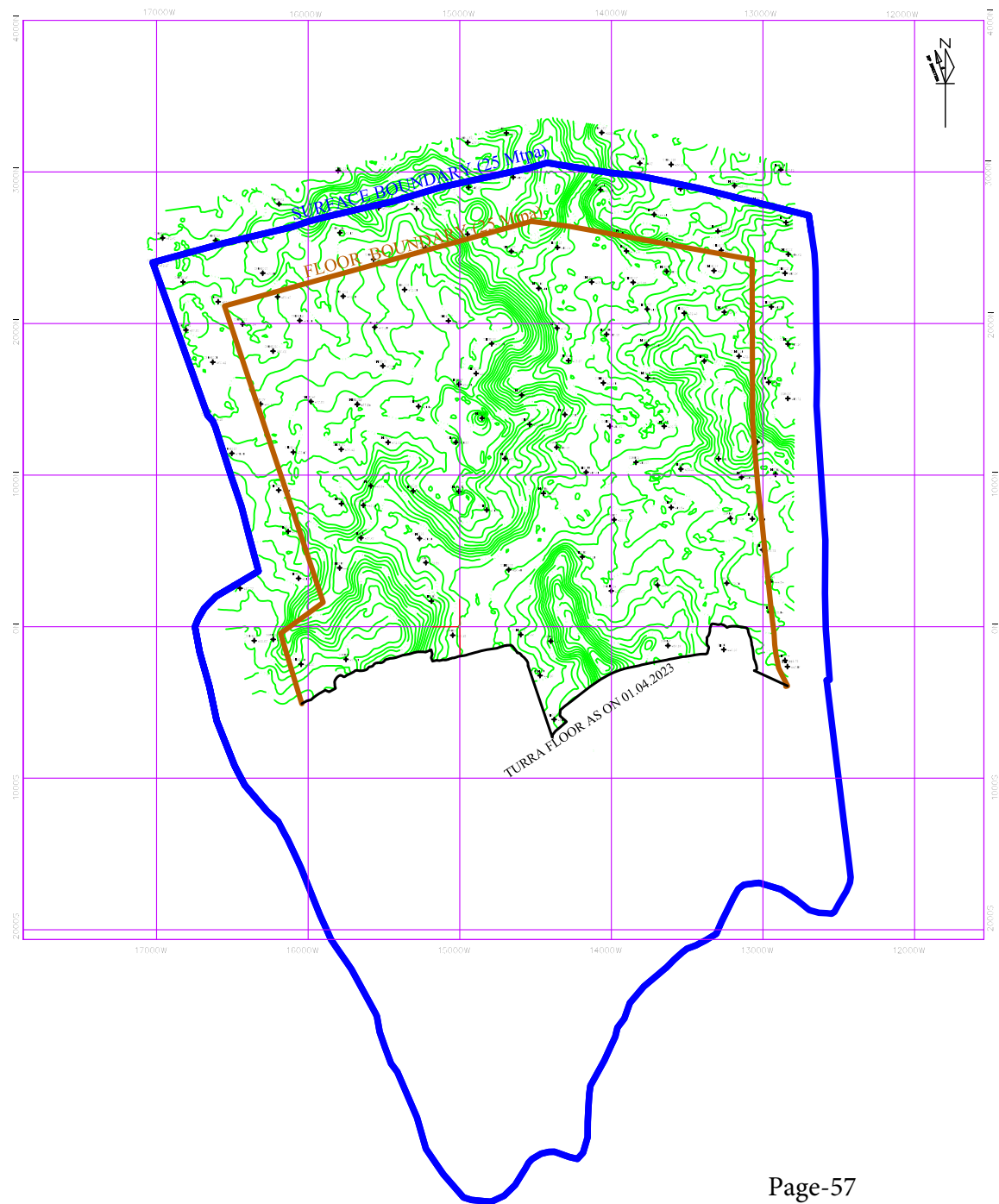
Activity	Name	Designation	Date
Design	Kaushal Kishor	Manager (Mining)	14/07/23
Checkd	R.K. Meena	HOOD (Mine Planning)	
Approved	Arul Dhan	RD	

Scale : 1:15000 SHEET OFF

DrgNo-RI-VI/MIN/NGH/MP/2023 R

Satellite Image for Mining plan of Nigahi OCP (25 Mtpa)



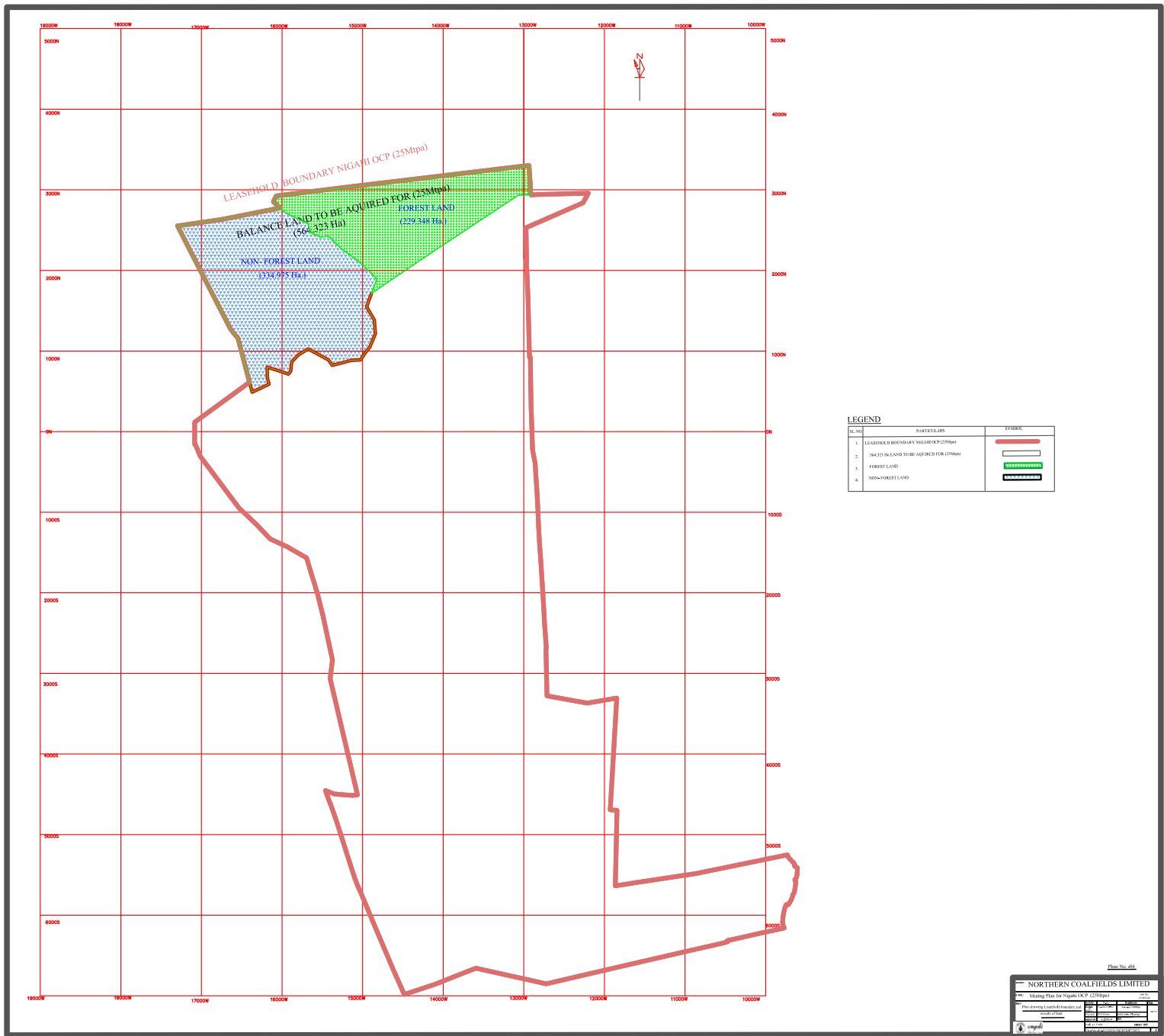


LEGEND

SL NO.	PARTICULARS	SYMBOL
1.	SERIES OF BOREHOLES DRILLED IN NIGAH NORTH EXTENSION	⊕ CSNED09
2.	SURFACE BOUNDARY OF NIGAH OCP (25Mpa)	Blue line
3.	FLOOR BOUNDARY OF NIGAH OCP (25Mpa)	Orange line
4.	SURFACE CONTOUR	400 (Green line)
5.	TURRA FLOOR AS ON 01.04.2023	Black line

Plate No. -03.

PROJECT: NORTHERN COALFIELDS LIMITED			
Job Title: Mining Plan for Nigahi OCP (25Mpa)		Job No: 13340114	
Author: Topography & Surface Plan	Checked: [Signature]	Reviewed: [Signature]	Date:
	Drawn: [Signature]	Checked: [Signature]	Date:
	Approved: [Signature]	Checked: [Signature]	Date:
	Approved: [Signature]	Checked: [Signature]	Date:
Scale: 1:10000		Sheet: 01	
Project Name: NORTHERN COALFIELDS LIMITED			



LEGEND	
SL. NO.	PARTICULARS
1.	LEASEHOLD BOUNDARY NIGALI OCP (25Mtpa)
2.	754.23 Ha LAND TO BE ACQUIRED FOR (25Mtpa)
3.	FOREST LAND
4.	NON-FOREST LAND

NORTHERN COALFIELDS LIMITED

Mining Plan for Nigali OCP (25Mtpa)

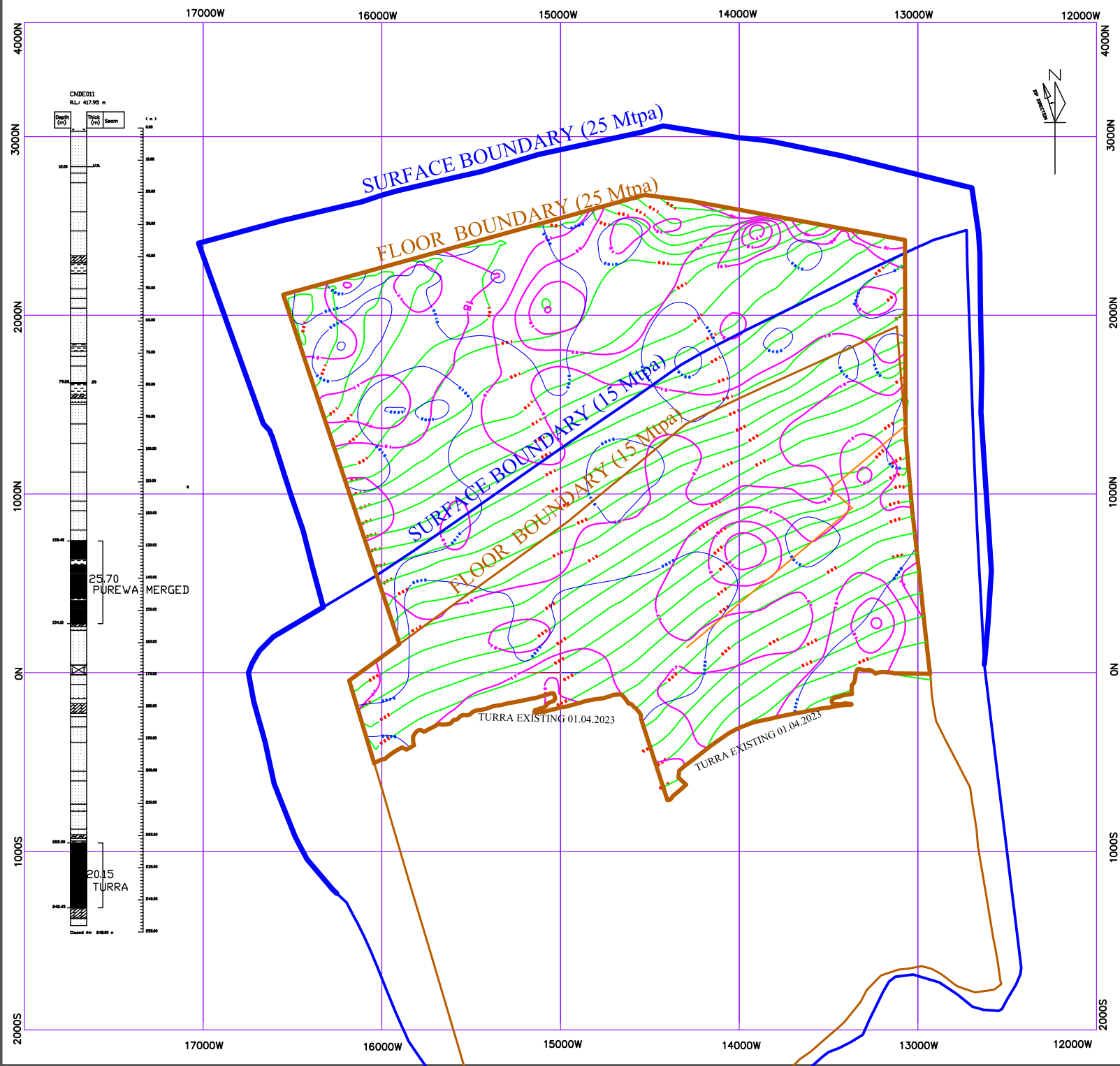
Prepared by:

Checked by:

Approved by:

Date:

Page No. 48



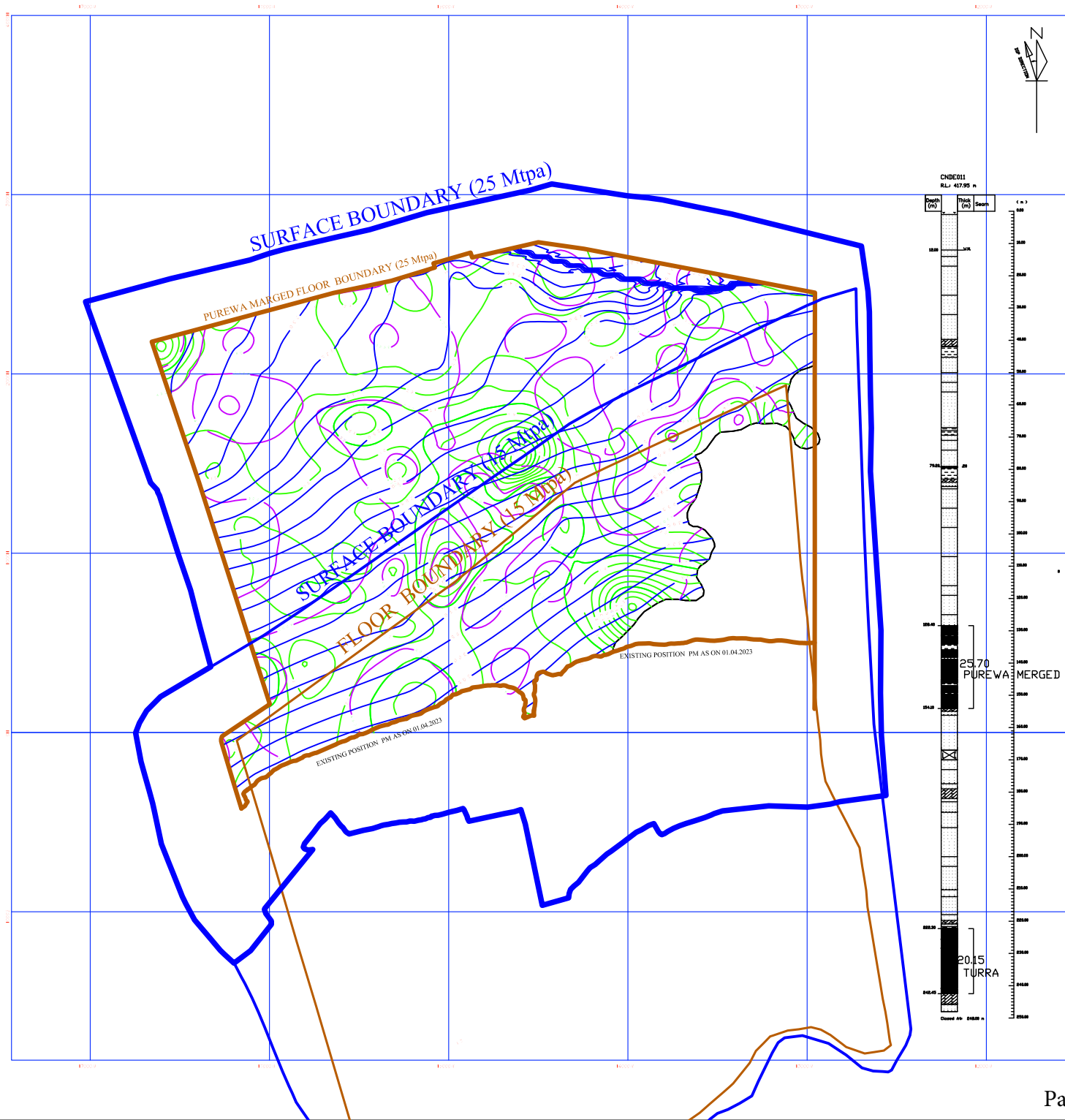
LEGEND

SL.NO.	PARTICULARS	SYMBOL
1.	SERIES OF BOREHOLES DRILLED IN NIGAH NORTH EXTENSION	CSNE009
2.	SURFACE BOUNDARY OF NIGAH OCP (25Mtpa)	
3.	FLOOR BOUNDARY OF NIGAH OCP (25Mtpa)	
4.	SURFACE BOUNDARY OF NIGAH OCP (15Mtpa)	
5.	FLOOR BOUNDARY OF NIGAH OCP (15Mtpa)	
6.	FLOOR CONTOUR OF TURRA SEAM	220
7.	EXISTING POSITION AS ON 01.04.2023	
8.	ISOCHORE LINE OF TURRA SEAM (E T)	10
9.	ISOGRADE LINE OF TURRA SEAM	5400

Page-59

Plate No. -05

Customer : NORTHERN COALFIELDS LIMITED			
Job Title : Mining Plan for Nigahi OCP (25Mtpa)		Job No : 232406140	
Subject :	Activity :	Name :	Designation :
Plan Showing The Floor Contours , Isochore & Isograde Lines of Turra Seam	Design	Kamshat Kishor	Manager (Mining)
	Checked	R K Meena	HOD (Mine Planning)
	Approved	Amit Bhat	RD
Scale : 1:35000		SHEET OFF	
DrgNo-RI-VI/MIN/NGH/MP/2023		R	

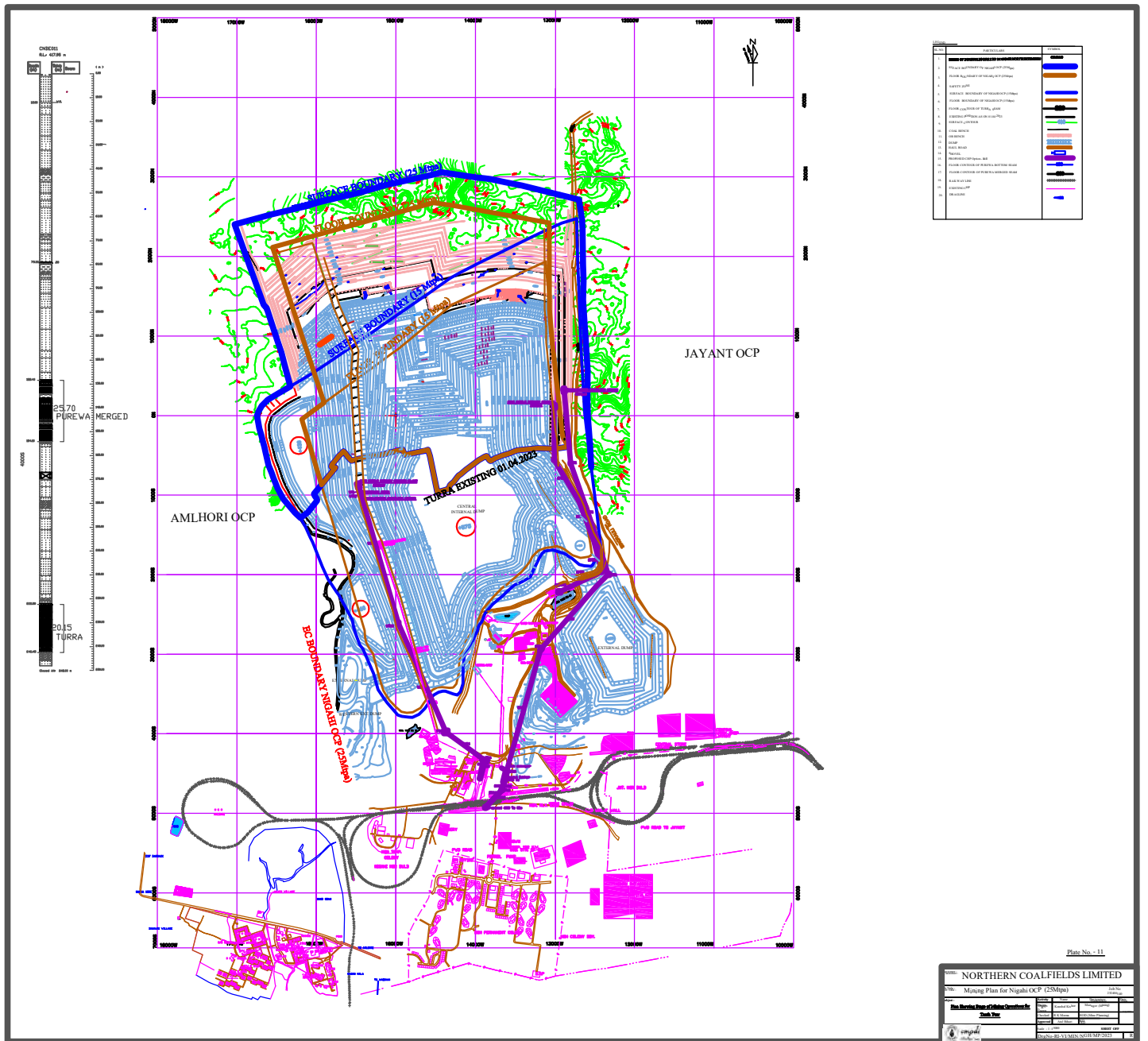


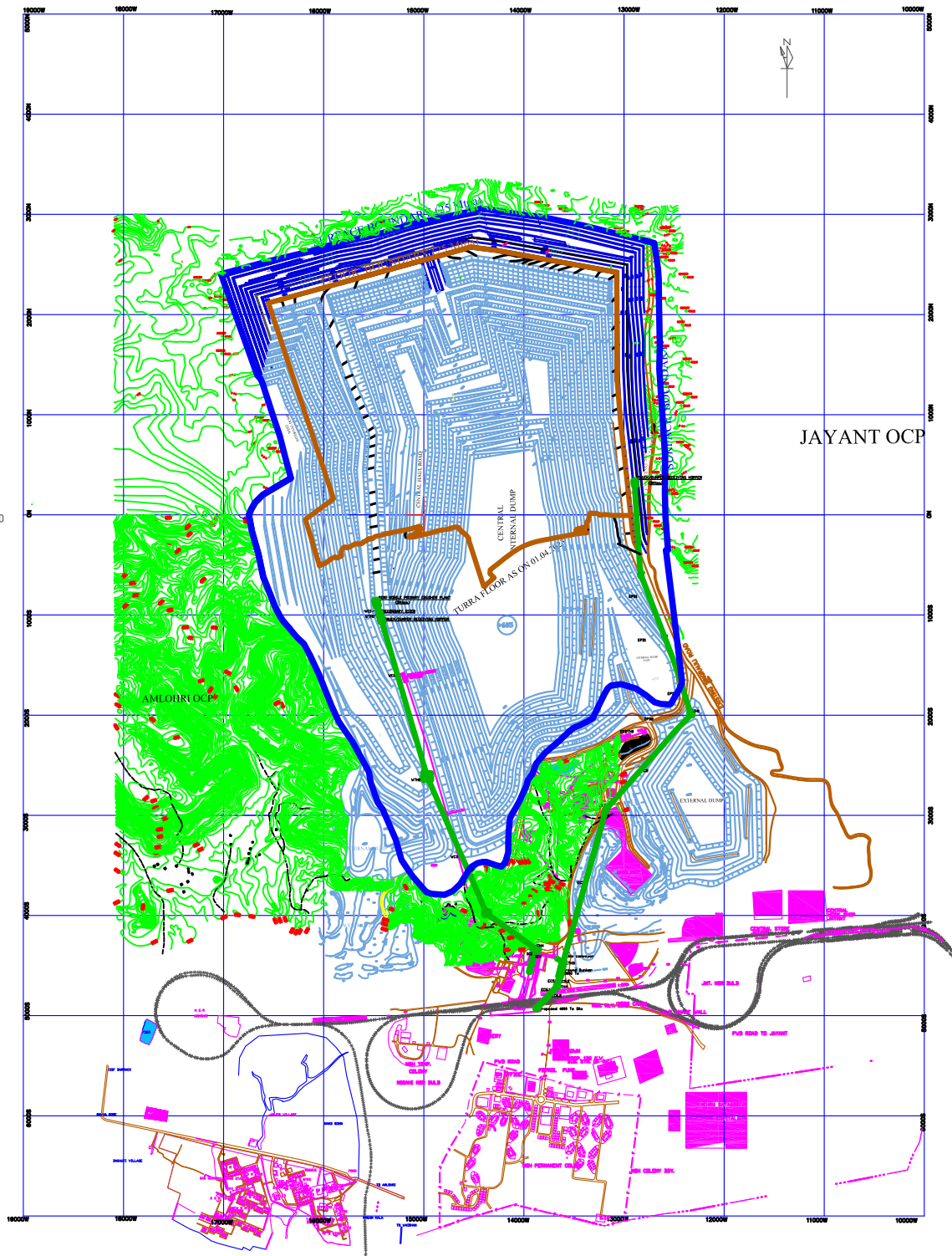
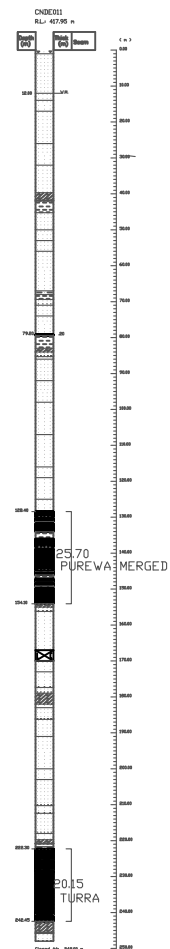
LEGEND

SL.NO.	PARTICULARS	SYMBOL
1.	SERIES OF BOREHOLES DRILLED IN NIGAH NORTH EXTENSION	⊕ CSNE009
2.	SURFACE BOUNDARY OF NIGAH OCP (25Mtpa)	—
3.	PUREWA MARGED & PUREWA BOTTOM FLOOR BOUNDARY OF NIGAH OCP (25Mtpa)	—
4.	SURFACE BOUNDARY OF NIGAH OCP (15Mtpa)	—
5.	FLOOR BOUNDARY OF NIGAH OCP (15Mtpa)	—
6.	FLOOR CONTOUR OF PUREWA MARGED SEAM	— 320
7.	ISOCHORE LINE OF PUREWA MARGED SEAM	— 20
6.	ISOCHORE LINE OF PUREWA MARGED SEAM	— 4500
7.	EXISTING POSITION AS ON 01.04.2023	—

Plate No. -06

Customer: NORTHERN COALFIELDS LIMITED				
Job Title: Mining Plan for Nigahi OCP (25Mtpa)				
Job No: 232406140				
Subject:	Activity	Name	Designation	Date
Plan Showing The Floor Contour, Isochore & Isograde Line of Purewa Marged Seam	Drawn	Kaushal Kishor	Manager (Mining)	July 2023
	Checked	R.K. Menon	HOD (Mine Planning)	
	Approved	Arul Bhaskar	MD	
Scale: 1:15000		SHEET OFF		
DrgNo-RI-VI/MIN/NGH/MP/2023		R		

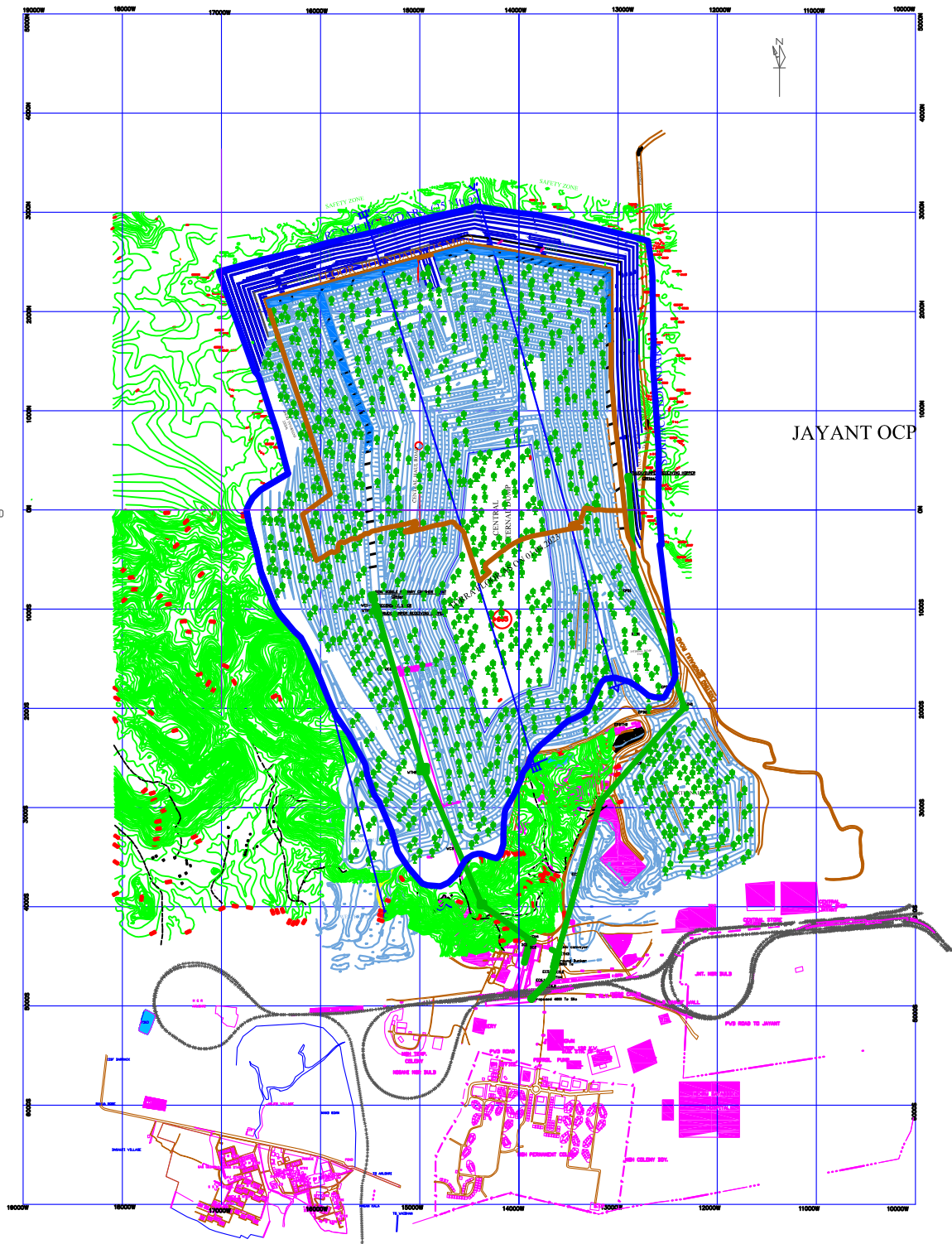




SL. NO.	PARTICULARS	SYMBOL
1.	BOUNDARY OF BOREHOLE DRILLED TO DEEPER SOUTH EXTENSION	Blue line
2.	ACTUAL BOUNDARY OF JAYANT OCP (JAYANT)	Orange line
3.	ACTUAL BOUNDARY OF JAYANT OCP (JAYANT)	Blue line
4.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
5.	TURRA FLOOR (AS ON 01.04.2015)	Blue line
6.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
7.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
8.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
9.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
10.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
11.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
12.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
13.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
14.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
15.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
16.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
17.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line
18.	ACTUAL BOUNDARY OF TURRA FLOOR	Blue line

Plate No. - 12

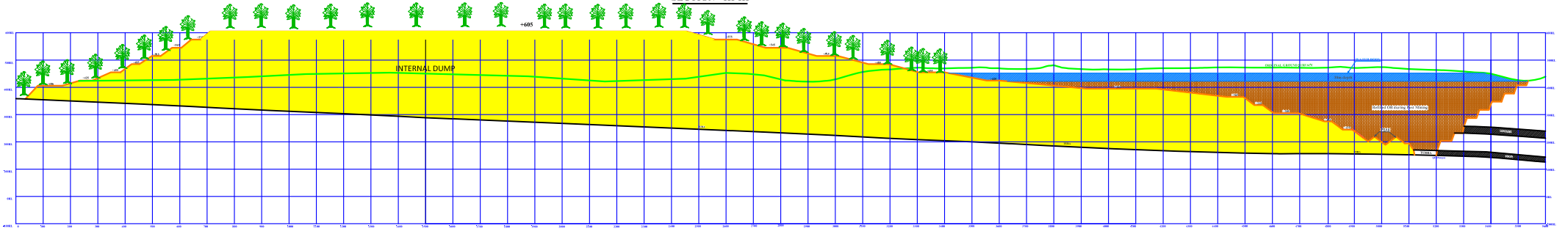
NORTHERN COALFIELDS LIMITED			
NORTHERN COALFIELDS LIMITED			
Project	Final Stage Dump Plan	Scale	1:1000
Drawn by	CHD0011	Checked by	CHD0011
Approved by	CHD0011	Approved by	CHD0011
Date	10/04/2015	Date	10/04/2015
Scale: 1:1000			
Drawn by: CHD0011			
Checked by: CHD0011			
Approved by: CHD0011			
Date: 10/04/2015			



LEGEND		PORTLAND	TYNBERG
1.	ROOF OF HORIZONTAL DRILLED IN SQUARE SHOWN EXTENSION		D CHIRKAO
2.	SLICE THICKNESS OF TRIGED DCP (20mm)		
3.	ROOF BOUNDARY OF TRIGED DCP (20mm)		
4.	SAFETY ZONE		
5.	FLUOR CONTAINER OF TUBES 1A		
6.	TUBES FLUOR 4X 100 X 100 X 302		
7.	SUBJECT CONTAINER		
8.	COIL BENCH		
9.	DR BENCH		
10.	WALL BENCH		
11.	SPLIT LEVEL		
12.	WINDPROOF CAP OPTION - 1		
13.	FLUOR CONTAINER OF PNEUMA BOTTOM SEAM		
14.	FLUOR CONTAINER OF PNEUMA REMEED SEAM		
15.	FLUOR DCP		
16.	ANALYST LINE		
17.	EXISTING CHP		

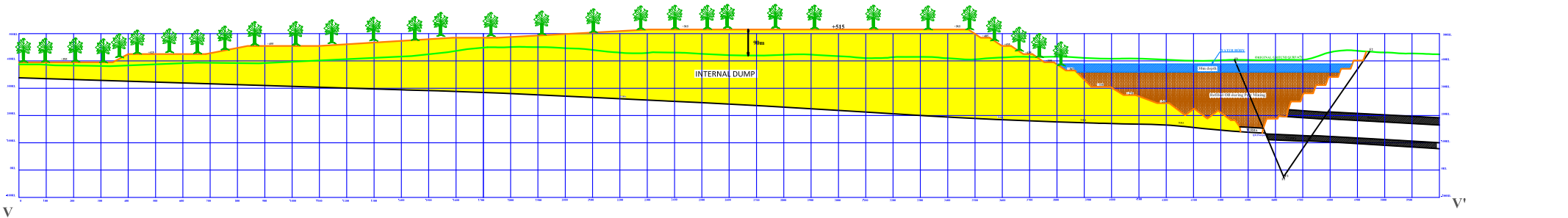
SHOWING DUMP PROFILE AT THE END OF MINING OPERATION

SECTION - III-III'

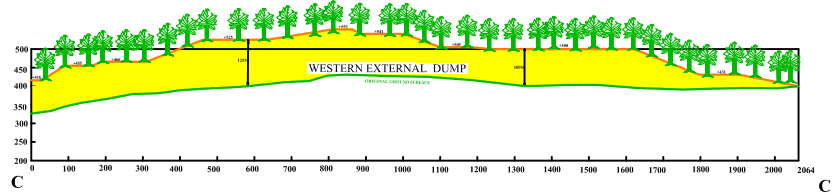


SHOWING DUMP PROFILE AT THE END OF MINING OPERATION

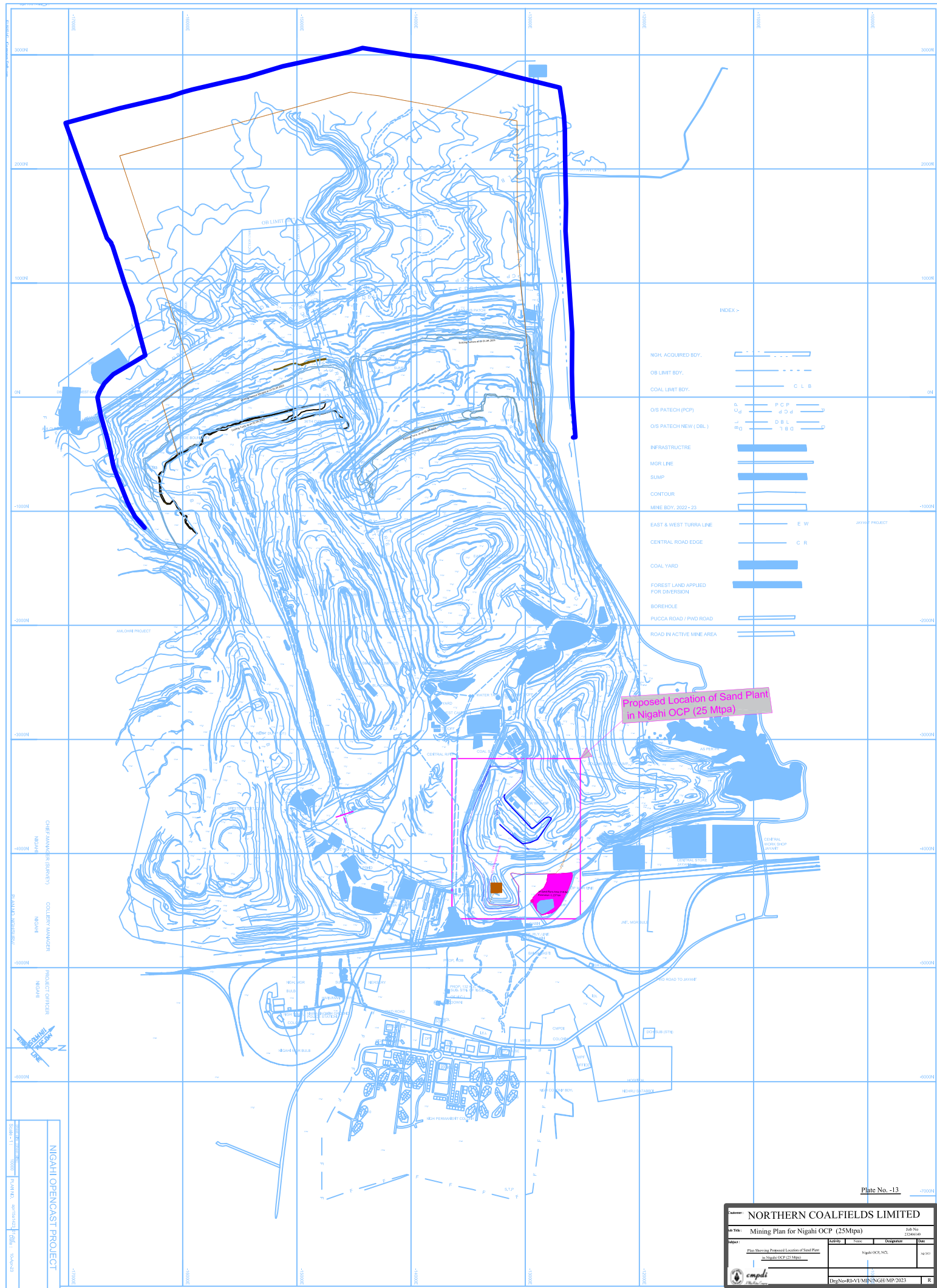
SECTION - V-V'



CROSS-SECTION C-C' SHOWING DUMP PROFILE



Customer : NORTHERN COALFIELDS LIMITED				
Job Title : Mining Plan for Nigahi OCP (25Mtpa)			Job No 232406140	
Subject : Plan Showing post mining dump profile	Activity	Name	Designature	Date
	Design	Kamshad Kasher	Manager (Mining)	30/03/23
	Checkd	R K Meena	HOD (Mine Planning)	
	Approved	Asal Bhatti	RD	
	Scale : 1:15000		SHEET OFF	
DrgNo-RI-VI/MIN/NGH/MP/2023		R		



Proposed Location of Sand Plant
in Nigahi OCP (25 Mtpa)

INDEX

NGH ACQUIRED BOD.		
OB LIMIT BOD.		
COAL LIMIT BOD.		C L B
OIS PATECH (PCP)		P C P
OIS PATECH NEW (DBL)		D B L
INFRASTRUCTURE		
MGR LINE		
SUMP		
CONTOUR		
MINE BOD. 2022-25		
EAST & WEST TURRA LINE		E W
CENTRAL ROAD EDGE		C R
COAL YARD		
FOREST LAND APPLIED FOR DIVERSION		
BOREHOLE		
PUCCA ROAD / PWD ROAD		
ROAD IN ACTIVE MINE AREA		

CHIEF MANAGER (SURVEY)
NIGAH
COLLECTOR MANAGER
NIGAH
PROJECT OFFICER
NIGAH

NIGAH OPENCAST PROJECT

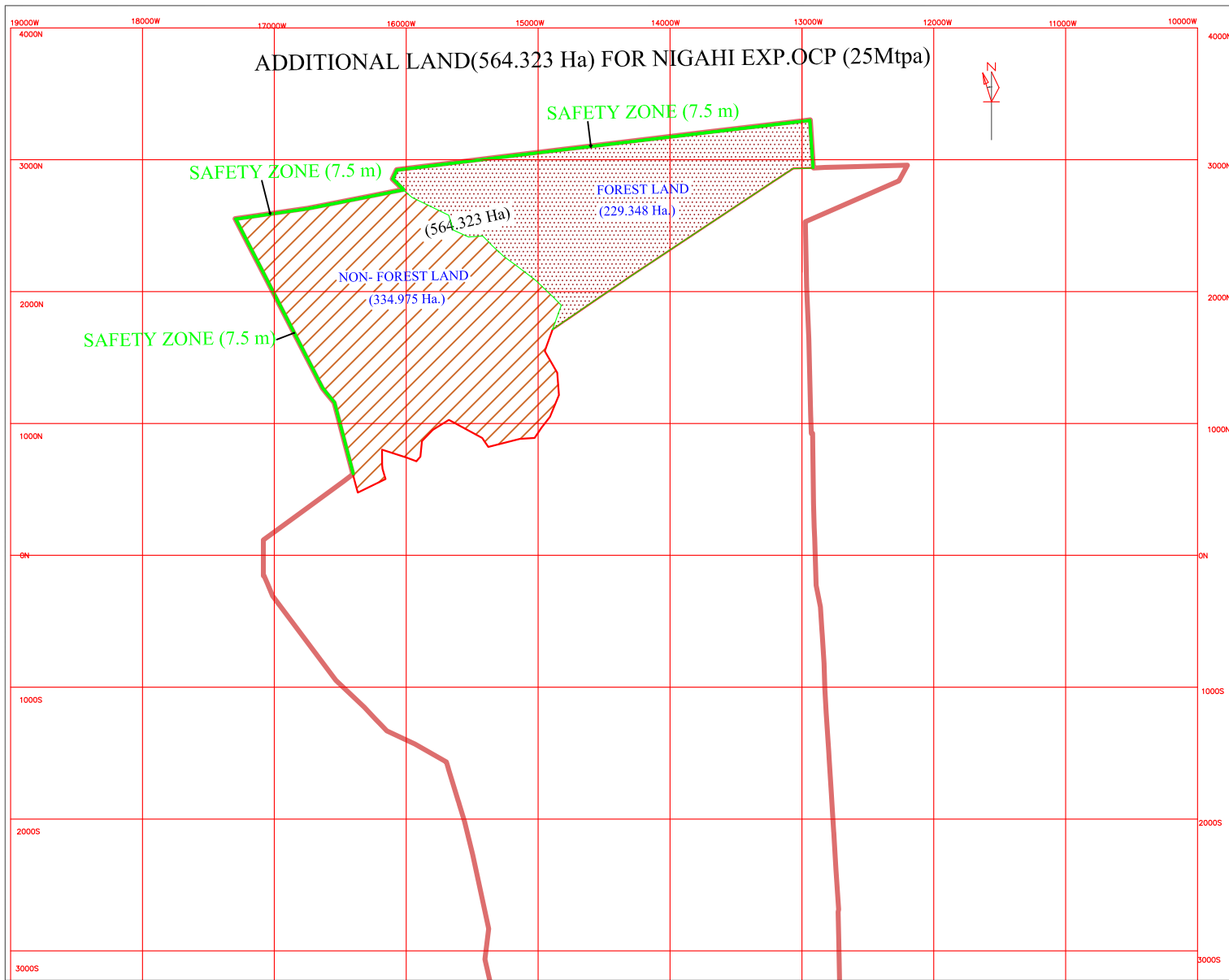
Scale: 1:50,000
Date: 15/01/2023
By: NIGAH

Plate No. -13

NORTHERN COALFIELDS LIMITED			
Job Title: Mining Plan for Nigahi OCP (25Mtpa)			
Project: Plan Showing Proposed Location of Sand Plant in Nigahi OCP (25 Mtpa)		Nigahi OCP, NCS	
Date: 14/01/2023		By: R	
Drawn: R		Checked: R	
Approved: R		Disapproved: R	

empdi

OrgNo-R-VI-MIN/NIGH/MP/2023

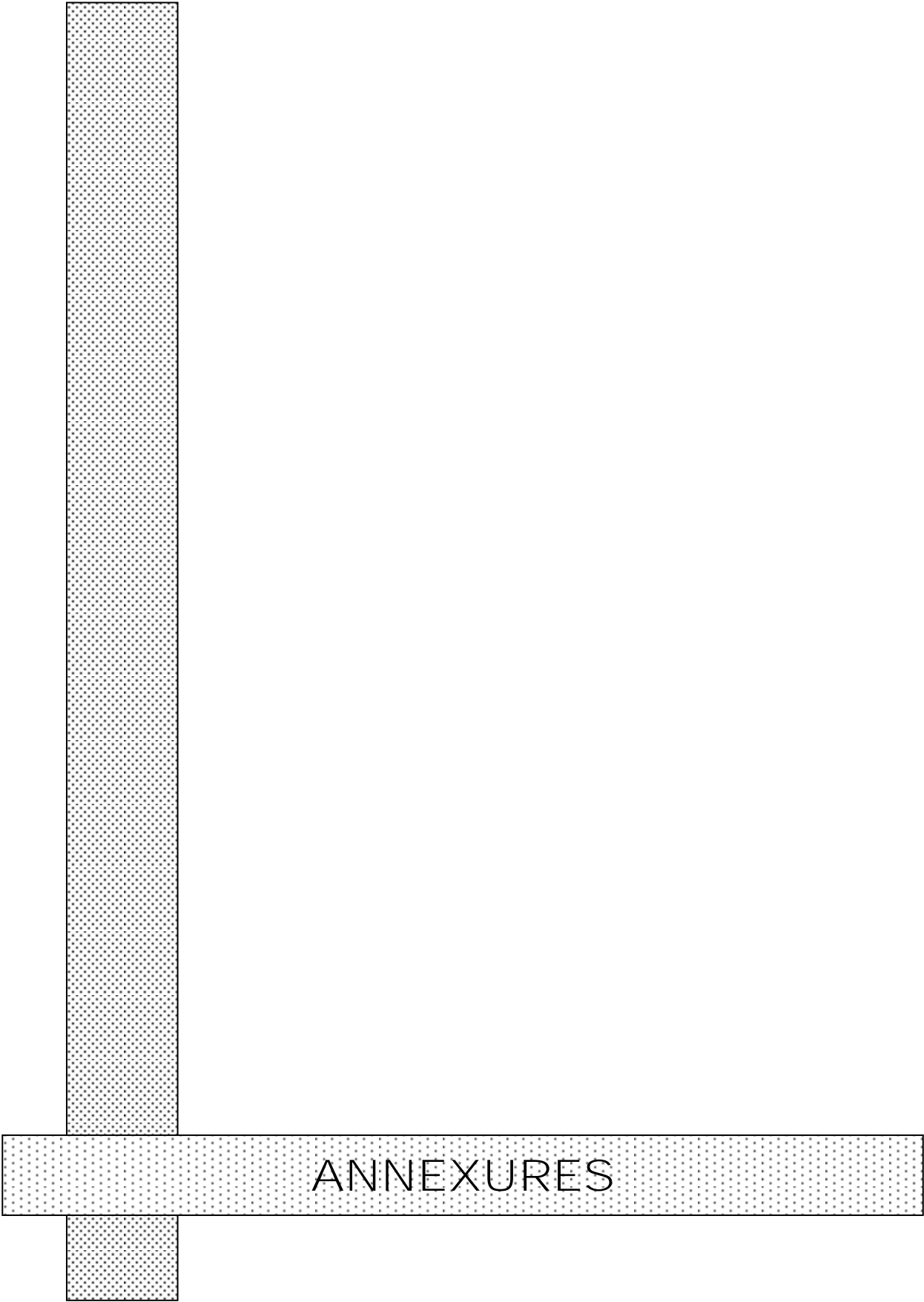


LEGEND

SL.NO.	PARTICULARS	SYMBOL
1.	LEASEHOLD BOUNDARY NIGAHİ Expn. OCP (25Mtpa)	
2.	LAND TO BE AQUIRED (564.323 Ha)FOR (25Mtpa)	
3.	Quarry Area Forest Land	
4.	Quarry Area Non Forest Land	
5.	Safety Zone	

Plate No. - 16

Customer: NORTHERN COALFIELDS LIMITED				
Job Title: Mining Plan for Nigahi Expn. OCP (25Mtpa)				Job No: 23/2024/01
Subject: Plan showing Land Use of Additional Land	Activity: Design	Name: Rashid Kidder	Designation: Manager (Mining)	Date: 14/03/2024
	Checked: R. K. Meena	By: R. K. Meena		For: Manager (Mining)
	Approved: Atul Kumar	By: Atul Kumar		For: MD
Scale: 1:10000		SHEET 001		
DrgNo: RLV/1/MIN/NGH/MP/2023		R		



PLAN /CHART SHOWING SCHEDULE OF IMPLEMENTATION OF MINE CLOSURE

S.N.	TYPE OF ACTIVITY	LIST OF ACTIVITIES	TIME FRAME (YEARS)					
			1st	to	18th	PC1	PC2	PC3
1	PROGRESSIVE CLOSURE	Environmental Monitoring (Air quality, Water quality, Groundwater level and quality, Noise Quality)						
2		Filling of Void- Rehandling of crown dump						
3		Construction and maintenance of Garland Drain around quarry						
4		Construction and Maintenance of soil conservation measures /OB dump & embankment strengthening measure						
5		Operation and Maintenance of Sedimentation Tank and Workshop Effluent Treatment plant in the Project Area						
6		Installation, Operation and Maintenance of dust suppression measures						
7		Landscaping and Plantation in OB Dump ,plain land and on other areas within Project Area						
8		Other Mitigative measures pertaining to Air & Water Pollution control, Soil conservation & mitigation of Land degradation etc.						
9		Entrepreneurship Development						
10	FINAL CLOSURE	Post Closure Environmental Monitoring						
11		Dismantling of Industrial and Residential structures within project Area						
12		Stabilization and Blanketing of OB Dump with Green Cover						
13		Grading of Highwall slopes						
14		Construction and Maintenance of Garland Drain in and around OB Dumps and of other soil conservation measures						
15		Man power cost of supervision (Added with Power Cost)						
16		Entrepreneurship Development						
17		Plantation (On Plain Land, OB Dump, Land obtained after dismantling and other area) and Landscaping						
18		Barbed Wire Fencing around the mine						
19		Construction, Operation and Maintenance of Sedimentation Tank , AMD Treatment Plant in the Project Area						
20		Installation, Operation and Maintenance of dust suppression measures						
21		Other mitigative measures						

ENVIRONMENTAL
CLEARANCE

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive,
and Virtuous Environment Single-Window Hub)

Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

To,

The General Manager
NIGAHİ PROJECT NORTHERN COALFIELDS LIMITED
Office of the General Manager, Nigahi Project, PO- Nigahi, Distt.-
Singrauli, Singrouli, Madhya Pradesh-486884

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity
under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the Ministry vide proposal number IA/MP/CMIN/271744/2022 dated 09 Jul 2022. The particulars of the environmental clearance granted to the project are as below.

- | | |
|--|--|
| 1. EC Identification No. | EC22A042MP180012 |
| 2. File No. | J-11015/79/2013-IA-II(M) |
| 3. Project Type | Expansion7 |
| 4. Category | A |
| 5. Project/Activity including Schedule No. | 1(a) Mining of minerals |
| 6. Name of Project | Nigahi Opencast Project |
| 7. Name of Company/Organization | NIGAHİ PROJECT NORTHERN COALFIELDS LIMITED |
| 8. Location of Project | Madhya Pradesh |
| 9. TOR Date | N/A |

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 26/07/2022

(e-signed)
Lalit Bokolia
Scientist F
IA - (Coal Mining sector)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH. Please quote identification number in all future correspondence.

This is a computer generated cover page.

F. No. J-11015/79/2013-IA-II(M).
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

2nd Floor Vayu Wing,
Indira Paryavaran Bhawan,
Jorbagh Road, N Delhi - 3
Email: lk.bokolia@nic.in Tel: 011-20819417

Dated: 25th July, 2022

To

The General Manager (Nigahi Project),
M/s Northern Coalfields Ltd,
Project, PO- Nigahi, Distt-Singrauli-486884,
Madhya Pradesh
Email: gmenv@ncl.gov.in ; gmenv_ncl@coalindia.in,
nigahi.environment@gmail.com

Sub: Expansion of Nigahi opencast coal mining project for increase in production capacity from 21 MTPA to 22.5 MTPA (increase of 10% w.r.t 1.5 MTPA) in land area of 3018.4 Ha by Northern Coalfields Ltd, located in the village Nigahi, Tehsil Singrauli, District Singrauli (M.P.)- Environmental Clearance under OM vide no. F. No. IA3-22/10/2022-IA.III 07.05.2022- [Availing total 50% relaxation of OM dealing with exemption of public hearing under clause 7 (ii) of EIA notification].

Sir,

This has reference to your online proposal No. IA/MP/CMIN/271744/2022 dated 9th July, 2022 submitted to this Ministry for grant of Environmental Clearance (EC) in terms of the provisions with MoEF & CC's Office Memorandum vide no. F. No. IA3-22/10/2022-IA.III (E 177258) dated 07.05.2022 and as per EIA Notification, 2006) of the Environment Impact Assessment (EIA) Notification, 2006 under the Environment (Protection) Act, 1986 for Expansion of Nigahi opencast coal mining project for increase in production capacity from 21 MTPA to 22.5 MTPA (increase of 10% w.r.t 1.5 MTPA) in land area of 3018 Ha by Northern Coalfields Ltd, located in the village Nigahi, Tehsil Singrauli, District Singrauli (Madhya Pradesh).

2. The proposal was granted EC for production capacity of 15 MTPA in ML area of 3036.4 Ha dated 08.05.2007. Further EC was granted for expansion under Clause 7 (ii) of EIA notification, 2006 on 19.03.2015 as per the O. M. dated 19.12.2012 for 25 % expansion i.e. 18.75 MTPA production capacity in ML area of 2675 Ha and EC was granted on 03.02.2020 as per O.M. dated 15.09.2017 for 12% expansion (total 40%) i.e. 22.5 MTPA in an area of 3018.4 Ha. Presently the proposal is considered by the Ministry at central level in view of the exigency, as per the provisions of O.M. F. No. IA3-22/10/2022-IA.III dated 07.05.2022. Abeyance vide MoEF&CC's OM dated 28.01.2022 on OM no. 22-23/2018-IA.III(Pt.) dated 31.10.2019 on mechanism for consideration of proposal of critically/ severally polluted area. Abeyance on above OM has been lifted vide OM dated 05.07.2022.

3. Based on the submission of Project Proponent, Ministry hereby grants approval to Expansion of Nigahi opencast coal mining project for increase in production capacity from 21 MTPA to 22.5 MTPA (increase of 10% w.r.t 1.5 MTPA) in land area of 3018 Ha by Northern

25

Coalfields Ltd, located in the village Nigahi, Tehsil Singrauli, District Singrauli (Madhya Pradesh) under the provisions of OM vide no. F. No. IA3-22/10/2022-IA.III 07.05.2022, under the Environment Impact Assessment (EIA) Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the following terms & conditions / specific conditions for environmental safeguards as stated below:-

- i. PP shall submit Certified Compliance Report of the EC vide No. F. No. J- J- 11015/79/2013-IA-II(M) dated 19th March, 2015 and 3rd February, 2020 granted for total 40% expansion, along with EIA/EMP report, prepared based on standard ToRs for the additional capacity of 10% on PARIVESH portal within six months of enhancement of production beyond 40%.
- ii. In view of above (i), Ministry shall ascertain the adequacy of the proposed environmental safeguards and stipulate necessary conditions, if required, which shall be monitored as a part of the EC compliance monitoring.
- iii. PP shall obtain necessary prior consent for enhanced capacity from State Pollution Control Board under Air and Water Act.
- iv. Environmental quality parameters arising out of proposed expansion shall be within the prescribed norms and the same shall be maintained as per prescribed norms.
- v. Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent".
- vi. All other terms and conditions as prescribed in Ministry's letter dated 08.05.2007, 19.03.2015 and 03.02.2020 shall remain the same and need to be complied by PP.

Additional Specific conditions as the area falls under Severely Polluted Areas (SPAs)

- (i) Transportation of materials by rail/conveyor belt shall be implemented
- (ii) Encourage use of cleaner fuels for trucks, If the roads required to be widened upto nearest railway siding, the same be constructed to avoid traffic congestion.
- (iii) Increase green belt cover by 40% of the total land area beyond the permissible requirement of 33%, wherever feasible.
- (iv) Greenbelt outside the project premises such as avenue plantation, plantation in vacant areas, social forestry, etc. shall be implemented.
- (v) Assessment of carrying capacity of mine & road transportation shall be done as per the State Plan/instructions.
- (vi) Reuse/recycle of treated wastewater shall be implemented as feasible with latest technology. Zero liquid discharge concept may be adopted.
- (vii) PP to install Continuous monitoring station for ambient air quality and also continuous effluent quality in ETP shall be installed. Data so generated shall be linked with respective SPCB and CPCB websites.

(viii) A detailed water harvesting plan may be prepared by the project proponent for water augmentation and submitted to Regional Office of MoEF&CC.

(x) The project proponent shall install STP for generated domestic wastewater and should meet for discharge standards.

(xi) More stringent norms for management of hazardous waste like oil container, ETP sludge etc shall be adopted. The waste generated should be preferably utilized in co-processing.

(xii) Monitoring of compliance of EC conditions may be submitted with third party audit every year.

(xiii) Fund allocation for Corporate Environment Responsibility (CER) which is atleast 1.5 times as per OM of 1st May, 2018 may now be considered as 1.5 times of fund allocated on commitment made during public consultation process for incorporating in EIA-EMP for deliberation of EAC and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.

This issues with the approval of the competent Authority


(Lalit Bokolia)
Director

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi
2. The APCCF, MOEF&CC, Regional Office(EZ), E-5 Arera Colony, Bhopal - 462 016
3. The Secretary, Department of Environment & Forests, Government of Madhya Pradesh, Secretariat, Bhopal
4. The Member Secretary, Jamnagar House, 18/11, Man Singh Road Area, New Delhi, Delhi 110001
5. The Member Secretary, Madhya Pradesh State Pollution Control Board, Paryavaran Parisar, E-5, Arera Colony, Bhopal - 462 016
6. The District Collector, Singrauli, Government of Madhya Pradesh
8. Monitoring File/Guard File/Record File
9. PARIVESH Portal


(Lalit Bokolia)
Director



Nigahi OCP
Leasehold Area- 3582.723 Ha

Google Earth image showing
Cardinal Points



Safety Zone



Forest Area (229.348 Ha)

Non Forest Area (334.975 Ha)

Annexure III(b)

Morwa Road



1 km

**File No. CPAM-34011128/2019-CPAM
Government of India
Ministry of Coal**

**Room No, 622.A. Shasta Shawan.
New Delhi. dated 9th September, 2020**

To,

**The Chairman,
CIL, Kolkata**

Subject Approving Authority for mining plan for projects of CIL and its subsidiary companies . reg.

I am directed to refer to your letter No. CILCI-1:1307 dated 31.08.2020 on tne Subject cited above and to convey that there Is no change in the existing provisions of approving authority of Mining Plan of CIL and its subsidiary companies which was issued vide this Ministry's letter No. 340121(9y2012-CPAIA dated 31.05.2012.

This has the approval of competent aulhonty.

Yours Sinc rely.

**(Millar Singh)
Under Secretary to the Govt. of India
E-mail Id: hitlar.singhB5t\$ñIc.in**

Qlileg'O go qt cpf wo "

Uwdlgev<I wlf g'lp'gu'ht 'Rt gr ct c'kqp.'Hqt o w'v'kqp.'Uwdo k'ukqp.'Rt qegukpi .'Uet w'k'p'f.'
Crr t qxcn'c'pf 'T g'x'k'k'qp'q'h'O l'p'k'pi 't'nc'p'ht 'v'j g'è'q'c'n'c'pf 'f'i p'k'g'd'm'em'f'"

Undersigned is directed to state that the guidelines for formulation of Mining plan and Mine Closure Plan has been amended. It has been decided by the Government that all coal (including lignite) mining operations in India shall henceforth be governed as per modified guidelines enumerated below.

- 30 **O l'p'k'pi 'R'nc'p'** All coal (including Lignite) mining operation in India shall henceforth be governed as per these modified guidelines listed below and henceforth, the Mine Closure Plan and Final Mine Closure Plan shall be integral part of Mining Plan. Separate approval of Mine Closure Plan/ Final Closure Plan has been done away with. The Guideline/format for formulation of Mining plan is enumerated at **Crr g'p'f k'z'ò 'k'o**
- 300' **k'o r'igo gp'w'v'k'qp'q'h'v'j g'è'r r t q'x'g'f 'O l'p'k'pi 'R'nc'p'u't'ij c'n'd'g't'q'ng't'g'ur qp'uk'd'k'k'w'f 'q'h'v'j g'b' k'p'g q'y p'g't'0** Mining operations shall be undertaken in accordance with the duly approved mining plan. The mining plan once approved shall be valid for the balance life of the Mine, provided that any modification(s) of the mining plan is approved by the competent authority and such approval of the modified mining plan shall remain valid for the estimate balance life of the mining plan. Modification of the approved mining plan during the operation of a mining lease also requires prior approval.
- 1.2. The mining plan shall cover prescription for different phases of life of the mine as stage plan. The Stage plan for 1st year, 3rd year, 5th year, year of achieving rated capacity of the mine, Final year (i.e. at the end of mine life) and post closure shall be submitted at the time of initial submission of mining plan. The project proponent shall submit a **t'gr'qt'v'k'p'ht'o c'v'k'qp'** consisting **c'0** compliance status with respect to approval condition of mining plan and grounds specified at para 1.3A; **d'0** stage plan for next five years; c. revised balance life of the mine; and **f'0** revised calculation of ESCROW amount with respect to revised balance life, to Coal Controller, CCO, Kolkata with a copy of the same to Administrative Section dealing with the allocation/allotment **q'h'v'j g'd'm'em'c'p'f 't'g'ev'k'qp'f' g'c'n'p'i 'y' k'ij 'è'r r t q'x'c'n'q'h'ò l'p'k'pi 't'nc'p'è'v'O q'E'EE'Q.'t'qt 't'p'ht'o c'v'k'qp'0'** Such report/information must be submitted at least 180(one hundred eighty) days before the expiry of 5 (five) year, starting from the commencement of the Mineral Concession (Amendment) Rules, 2020 or the date of execution of the duly executed mining lease deed, whichever is later. Information desired above must bear certificate of **S'w'c'n'd'k'g'f 'R'gt'u'qp'f' C'et'g'f' k'g'f 'O l'p'k'pi 'R'nc'p' r't'g'r'c't'k'pi 'C'i'g'p'e'f** and have approval of the respective company board. Non submission of such information during the stipulated time may result in withdrawal of mine opening permission or cancellation of the approved mining **r'nc'p'.**è'u' may be decided by CCO.
- The Mining Plan approved prior to issue of this Guideline will qualify for submission of such report/information at least 180(one hundred eighty) days prior to expiry of 5 (five) year from the date of notification of the Mineral Concession Amendment Rules 2020.
- 1.3.(A) The mining plan may be modified for **c'0** for change in method of mining; **d'0** for facilitating increase in sanctioned peak capacity that is in excess of one hundred **c'p'f** 'fifty per cent of the

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3060' Vj g'O lplpi 'Rēp'wdo kǵgf 'hqt 'ērr t qxcnqhi' cni'j cxg'r t kqt 'ērr t qxcnqhi'vj g'ēqpegt pgf 'Dqctf 'qhi'vj g'
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3070' Vj g'dcug'f cvg'qhi'vj g'O lplpi 'Rēp'lj qwf 'dg'vengp'ēu'ēw/qhi'f cvg'hp'y j kǵ 'vj g'gzvcevcdig'
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3080' Vj g'r t q r qugf 'igcugf 'ētgc'lp'vj g'O lplpi 'Rēp'lj cni'penf g'vj g'ētgc'ur geklǵ 'lp'vj g'b lplpi 'igcug'
 y kǵ lp'y j kǵ 'b lplpi 'qr gt cvkpū'ēcp' dg'wpf gt vengp'ēpf 'lpenf gu'vj g'pqp/o lpgt cnk gf 'ētgc'
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3090' Rtg/o lplpi 'ēpf 'qy pgt vj k'ēpf 'v{ r g'hwtpkǵ gf 'lp'vj g'b lplpi 'rēp'y kni'dg'qhi'lpf kcvǵg'lp'pēwt g'
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30 0' Vj g'gzecxvkp'fō lplpi 'ētgc'gpxkci gu'lp'vj g'b lplpi 'rēp'b wu'dg't gum kēgf 'y kǵ lp'vj g'
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 egt vllēcvg'ur geklǵ lpi '*c+'lpvǵp'qhi'vj g'Ucvǵ'I qxgt po gpv'ht 'i tēpv'qhi'igcug'dg{ qpf 'vj g'xgūgf "
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 i gqmi kēcnēd qwpf ct { lgzkmp' 'o lplpi 'igcug'vq't wǵg'qww'vj g'kūwǵ'qhi'gpet qēē o gpv0'Vj g'
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 kūwǵf 'd{ 'vj g'O lpgu'ēpf 'I gqmi { 'F gr ct wō gpv'qhi'vj g'ēqpegt pgf 'Ucvǵ'I qxgt po gpv'b wu'dg'ēwēj gf "
 lp'vj g'O lplpi 'Rēp0'

30820' lē'ēcug'qhi'ēnwǵf kēwēkpgf 'ēqcnili plǵg'ēnqēē'vj g'b lplpi 'rēp'b c{ 'dg't g xkūgf 'hqt 'gzvcevkvq'qhi'
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Rt qxl gf 'vj cv'vj g'b lplpi 'rēp'lj cni'dg't g xkūgf 'hqt 'gzvcevkvq'qhi'gu'ēqcnlǵf { gct 'hp' { gct 'dēuk0'hp'
 wpf gt 'hūny lpi 'ēkēwō ucpegu'ē0hij g't go clplpi 'gzvcevcdig't gugt xg'qhi'vj g'ēqcnb lpg'kū'gu'vj cp"

3(three) times of the rated Capacity of the current Approved Mining Plan; b. Change in method of mining from Opencast to Underground necessitated due to change in geo-mining conditions. However, revision of Mining Plan for extraction of less coal would be subject to prior approval of the Nominated Authority.

- 1.11. The approval of the revised Mining Plan shall not result in changes in the terms and conditions or efficiency parameters mentioned in the CMDPA/Allotment Agreement signed at the time of allotment/vesting for the auctioned/allotted blocks without prior approval of the nominated authority or Central Government, as the case may be. However, efficiency parameters mentioned in the CMDPA/Allotment Agreement shall be linked to the rated capacity of the mine.
- 1.12. The project proponent shall envisage the action plan for exploration and liquidation of the balance reserve yet to be projectised.
- 1.13. The project proponent shall take all necessary precautions regarding safety of mine workings and persons deployed therein and shall adhere to all the statutory clearances with regards to safety.
- 1.14. Proposed project area envisaged in the mining plan shall not encroach into any other adjacent coal block unless permitted to do so by the Ministry of Coal in writing.
- 1.15. The approval of the Mining Plan is without prejudice to the requirement of approvals from competent /prescribed authority under the relevant rules/ regulations etc.
- 1.16. The project proponent shall submit an undertaking that the mine shall be operated as per the Environment Clearance (EC) & Forestry Clearance (FC) for the project.
- 1.17. **Ucwwqt { 'Qdñi c v k p p < V j g'** legal obligations, if any, which the lessee is bound to implement, like special conditions imposed while execution of lease deed, approval of Mining Plan, conditions imposed by the Ministry of Environment, Forest and Climate Change (MoEF&CC), Central Pollution Control Board (CPCB), State Pollution Control Board (SPCB), Directorate General of Mines Safety (DGMS) or any other organizations describing the nature of conditions and compliance positions thereof, should be indicated in the Mining Plan.

40' O k p g ' e n q u w t g ' R m p u < Mine Closure Plans will have two components viz. i) Progressive or "Concurrent Mine Closure Plan, and ii) Final Mine Closure Plan. Progressive Mine Closure Plan would include various land use activities to be done continuously and sequentially during the entire period of the mining operations, whereas the Final Mine Closure activities would start towards the end of mine life, and may continue even after the reserves are exhausted and/or mining is discontinued till the mining area is restored to an acceptable level. The Mine closure details of the Mining Plan should be oriented towards the restoration of land back to its original as far as practicable or further improved condition.

- 2.1. Mining is to be carried out in a phased manner along with reclamation and afforestation work in the mined-out area.

Progressive mine closure plan shall be prepared for a period of every five years from the beginning of the mining operations. These plans would be examined periodically in every five years period and to be subjected to third party monitoring by the agencies approved by the Central Government, like Central Mine Planning and Design Institute Ltd. (CMPDIL), National Environmental Engineering Research Institute (NEERI), Indian Institute of Technology (IIT-ISM) or any other institutes/ organizations/ agencies specified from time to time for the purpose.

- 2.3. Various project specific activities viz. mined-out land details & their technical and biological restoration plan, water quality management, infrastructure to be retained and demolished, disposal of mining machinery, etc. shall be furnished in the relevant paras. Where the backfilling of the mine void is being carried out as part of regular mining operation, it shall not be included in the list of progressive mine closure activities. However, in case, where the backfilling of mine void is to be carried out specifically for closure of the mine, quantum of such overburden and the mine closure fund earmarked for the purpose must be included in the list of activities to be taken up for mine closure in the mining plan at the time of submission itself.

- 2.4. The Government may at any time before the closure of mine require certain activities to be included in the mine closure plans, which it may consider necessary for the safety and conservation of environment, or in compliance with any modification/ amendment in the relevant legislation.
- 2.5. **Cdepf qpo gpv'eqw<**The total cost for carrying out such activities shall be estimated for assessment of abandonment cost of the mine involving progressive and final mine closure activities such as barbed wire fencing all around the working area, dismantling of structures/demolition and cleaning of sites, rehabilitation of mining machinery, plantation, physical/biological reclamation, landscaping, biological reclamation of left-out overburden dump, filling up of de-coaled void, post environmental monitoring, supervision charges, power cost, protective and rehabilitation measures including their maintenance and monitoring, miscellaneous charges etc. for the specified post closure period.
- 2.6. **Guetqy 'Ceeqwpv'Ecrewv'kqp<**In August 2009 it was estimated that typically closure cost for an opencast mine was around rupees six lakhs per hectare of the total project area and rupees one lakh per hectare for underground project area at the-then price level. Accordingly vide letter dated 7th January 2013 a guideline for mine closure was issued which needed modification in these rates based on the wholesale price index ***Y RK'**as notified by Government of India from time to time while preparing the Mining plan and Mine Closure Plan. The escalated rate (based on the current base year i.e. 01.04.2019) is Rupees Nine Lakh per hectare in opencast and Rupees one lakh fifty thousand per hectare for underground Mine. These rates will be considered as Base Rate to be applicable from 01.04.2019, which may change as specified from time to time by the Government of India.
- [Exemplary Calculation: [(Rs 6 lakhs x 1.561 linking factor for base year 2004-05 x WPI 121.1 as on April 2019) / (WPI as on August 2009)] = Rupees 8.75 lakh, rounded to Rupees 9 (nine) lakhs per hectare in case of Opencast project].*
- Henceforth, these rates will stand modified based on the wholesale price index (WPI) as notified by Government of India from time to time. Annual closure cost is to be computed considering the total project area of the mine multiplied by escalated rate (at the above mentioned rates) and dividing the same by the balance life of the mine in years. An amount equal to the annual cost is to be deposited each year throughout the mine life compounded @5% annually.
- [For example if the annual cost works out to Rs 100, then in the first year the amount to be deposited will be Rs 100, in the second year $100 \times (1 + 5\%)^1$, in the third year $100 \times (1 + 5\%)^2$ and so on.]*
- Further, in case of the mine, where escrow account is already open, the annual closure cost is to be computed considering the total project area at the above mentioned rates minus the amount already deposited and dividing the same by the balance life of the mine in years and annual cost as arrived should be compounded @5% annually.
- 2.7. **HpcpelcnCuwt cpeg<**The Mining Company/ Mine Owner as a part of Financial Assurance will open a Fixed Deposit Escrow account, with the Coal Controller Organization (on behalf of the Central Government) as exclusive beneficiary prior to commencement of any activities on the land/project area of the mine and shall submit the same to Coal Controller Organization (CCO) before the permission is given for opening the mine. The mining company shall cause the payment to be deposited at the rate computed as indicated at Para 2.6. The owner of the company may select the Schedule Bank where the Escrow account is to be opened and inform the same to the Coal Controller, CCO, Kolkata.
- 2.8. Coal Controller, Kolkata shall get the WPI (used for escalation of closure cost at the time of formulation of Mining plan) updated, at the time of opening of Escrow account. The mine owner/ company including all public/ private sector companies shall deposit the yearly amount in a Schedule Bank in accordance with Para 2.6. Coal Controller, **Mqmcv'tj cnt'nuq'l gy'vj g**

information, submitted under to para 1.2, verified and get the yearly closure cost modified in respect of the said information. 2.6.

- 2.9. Final Mine Closure: The details of the Mining Plan (covering Final Mine Closure Plan envisaging the details of the updated cost estimates for various mine closure activities and the Escrow Account already set up, shall be submitted to the approving authority for approval at least five years before the intended final closure of the mine.
- 2.10. Final Mine Closure would be considered to be completed only after acceptance of the third-party audit report by the Coal Controller on the compliance of all provisions of Mine Closure Plan. Any Institute/ Organization/Agency as may be specified by the Government for this purpose may be engaged for Third Party audit to create a self-sustained ecosystem. Failure of restoration within the specified period may result in forfeiture of Escrow Account created as per Para 2.6 & 2.7. The details of the Final Mine Closure Plan along with the details of the updated cost estimate for various mine closure activities and escrow account already set up shall be submitted at the time of approval of final mine closure plan.
- 2.11. **Vlo g'Scheduling for cdcpf qpo gpv<**The Action plan for carrying out all abandonment operations (progressive and final mine closure) should be furnished in the form of bar chart for a period of life of the mine plus post closure period. Post closure period shall be taken as 3 (three) years for Underground mines and Opencast mines having stripping ratio lesser than 6 (six) MM³/Te & 5 (five) years for mines having stripping ratio more than 6 (six) MM³/Te.
- 2.12. **Ko rigo gpwvqp'qhv'j g'errtqxgf 'O lpg'Enqumt g'Rcp'tj cndg'bpq't gur qpukdkw' 'qhv'j g'b lpg qy pgt** Mining is to be carried out in a phased manner i.e. continuation of mining activities from one phase to other indicating the sequence of operations depending on the geo-mining conditions of the mine. Up to 50% of the total deposited amount including interest accrued in the ESCROW account may be released after every five years in line with the periodic examination of the Closure Plan as per Para 2.2. The amount released should be equal to expenditure incurred on the progressive mine closure in past five years or 50% whichever is less. The balance amount shall be released to mine owner/leaseholder at the end of the final Mine Closure on compliance of all provisions of Closure Plan. This compliance report should **dg'f w' 'li pgf** 'by the lessee and certify that said closure of mine complied all statutory rules, regulations, orders made by the Central or State Government, statutory organisations, court **gve'cpf 'egt vllgf** 'by the Coal Controller."
- 2.13. **Tgur qpukdkw' 'bf vj g'mine qy pgt<K'**Is the responsibility of the mine owner to ensure that the protective measures contained in the mine closure **r'cp'lpemf lpi 'tgeno c'vqp'cpf** 'rehabilitation works have been carried out in accordance with the approved mine closure plan and final mine closure plan.
- 2.14. The owner shall submit to the Coal Controller a yearly report before 1st July of every year setting forth the extent of protective and rehabilitative works carried out as envisaged in the approved mine closure plans (Progressive and Final Closure Plans).
- 2.15. The money to be provided per hectare of total Project Area for the purpose is to be deposited every year on commencement of any development activity on the land for the mine after opening a Fixed Deposit Escrow Account prior to obtaining mine opening permission from Coal Controller. Mining company/owners including all Public Sector Undertakings shall deposit the yearly amount in a Scheduled Bank. If the Mine owners fail to deposit the required annual amount in accordance with Para 2.6, 2.7 & 2.8, the Government can withdraw the mining permission.
- 2.16. The funds so generated are towards the security to cover the cost of closure in case the mine owner fails to complete the relevant closure activities. The prime responsibility of mine closure shall always lie with the mine owner, and in case these funds are found to be insufficient to cover the cost of **lpcnb lpg'equmt g'lpemf lpi 'vj g'et gcu'** covered in Para 2.3 2.6, 2.7, 2.8 & 2.9 above. The mine owner shall undertake to provide the additional fund equivalent to the gap in

funding before five years of Mine Closure failing which it may be recovered by such other methods as the competent authority may deem fit in this regard.

- 2.17. **HlpcrlEnqumt g'Egt vllcvg<**The Mine owner shall be required to obtain a mine closure certificate from Coal Controller to the effect the protective, reclamation, and rehabilitation work in accordance with the approved Mining plan covering final mine closure provisions/activities have been carried out by the mine owner for surrendering the reclaimed land to the State Government.
- 2.18. The balance amount at the end of the final Mine Closure shall be released to mine owner on compliance of all provisions of Closure Plan duly signed by the mine owner to the effect that said closure of mine complied with all statutory rules, regulations, orders made by the Central or State Government, statutory organizations, court etc. and duly certified by the Coal Controller. This should also indicate the estimated extractable coal reserves and coal actually mined out.
- 2.19. If the Coal Controller has reasonable grounds for believing that the protective, reclamation and rehabilitation measures as envisaged in the approved mine closure plan in respect of which financial assurance was given has not been or will not be carried out in accordance with mine closure plan, either fully or partially, the Coal controller shall give the mine owner a written notice of his intention to issue the orders for forfeiting the sum assured at least thirty days prior to the date of the order to be issued after giving an opportunity to be heard.

50 **Hqt o wrvklqp'qh'O kplpi 'Rrcp'd{ 'S wrllhgf 'Rgt uqp'*S R+'qt 'Ceet gf kvgf 'O kplpi Rrcp'Rt gr ct lpi 'Ci gpe{ '*O RRC<**

- 3.1. System of granting Recognition to a person for preparation of mining plan u/s 22C of MCR 1960 & preparation of mining plan only by RQP u/s 228 of MCR 1960 shall be done away with, after commencement of the Mineral Concessions (Amendment) Rules, 2020.
- 3.2. After commencement of Mineral Concession (Amendment) Rule 2020, no mining plan shall be accepted unless it is prepared by Qualified Person (QP) or Accredited Mining Plan Preparing Agency (MPPA).
- 3.3. Quality Council of India (QCI) or National Accreditation Board for Education and Training (NABET) shall be engaged for accrediting following entities:
 - (i) Accredited Prospecting Agency (APA) for undertaking prospecting operations and preparation of geological reports for Coal and Lignite Mines, and
 - (ii) Mining Plan Preparing Agency (MPPA) for preparation of mining plan (for Coal, Lignite Mines and Sand for Stowing)
- 3.4. The Quality Council of India (QCI) or National Accreditation Board for Education and Training (NABET) shall grant accreditation in accordance with such standards and procedures as specified in schedule VI of Mineral Concession (Amendment) Rule 2020.
- 3.5. Qualified Agency (QP) or Mining Plan Preparing Agency (MPPA) who prepares mining plan for a block/mine, shall have recognition from the concerned company board that the qualification of the QP or accreditation of the MPPA has been duly verified and is in line with the relevant provision of the MCR 1960.

6" **Uwdo kulkqp.'Rt qegulkpi 't'pf 'Uet wlp{ 'qh'O kplpi 'Rrcp''**

- 4.1 **Op't'pf 'lt qo 'vj g'f cvg'qh'r wdlc vlp'qh'qt f gt 't'pf 'wr vq'vj g'b kp)'qh'r gt kqf 'qh'plkg'b qpvj u'lt qo 'vj g'eqo o gpego gpv'qh'vj g'O kpgt crlEqpegulkqp'*Co gpf o gpv+'Twgu'4242.** every mining plan submitted for approval/modification shall be accompanied with a non-refundable application fee specified from time to time in this regard, for the project area specified in the mining plan. "
- 4.2 **Op't'pf 'lt qo 'vj g'expiry qh'r gt kqf 'qh'plkg'b qpvj u'lt qo 'vj g'eqo o gpego gpv'qh'vj g'O kpgt crlEqpegulkqp'*Co gpf o gpv+'Twgu'4242.** every mining plan submitted for approval/modification "

shall be accompanied with a non-refundable application fee specified from time to time in this regard, for the project area specified in the mining plan and peer/expert review done by any accredited mining plan preparing or reviewing agency at their (applicant's) own cost. During examination of the Mining Plan by the internal committee of MoC, if it is felt that a review by expert or by specialized agency is required, the committee may recommend referring the mining plan to such expert/agency with the approval of the MP approving authority. Charges for the expert review shall be borne by the applicant.

- 4.3 All pages (including cover page, plates and Annexures) shall bear the signature & stamp furnishing details of the QP/Accredited Mining Plan preparing Agency (MPPA) in physical mode of submission and e-signature/digital signature during the online system of submission.
- 4.4 Ministry of Coal is in process of development of on-line portal for submission and approval of mining plan. system of acceptance of Physical copy shall be continued till the development/operationalization of online portal for submission and approval of mining plan.

606B" Uwdlo kulkqp'vq'Rj { ulecnEqr { 'O lplpi 'Rrcp'vq'O lplmt { 'qhEqcn'

606B08"The project proponent shall submit one soft copy and four hard copies of Mining Plan (draft)-one each to the concerned Administrative Section of the Ministry of Coal for the concerned block, Section of MoC/CCO dealing with approval of Mining plan, Coal Controller, CMPDIL/ Extended office of CCO & the dispatch receipt of the speed post (confirming that the draft Mining Plan has been sent).The contact details and correspondence address of the section dealing with the approval of Mining plan, administrative section for the mine, members of the committee etc. shall be updated time to time, on the website of the Ministry of Coal/Coal Controller Organisation. "

4.4.1.2 The project proponent shall incorporate the observation (if any) and submit the mining plan (after incorporating the compliance to the observation) to section of MoC/CCO dealing with approval of Mining plan, concerned administrative section of the Ministry of Coal, Coal Controller and CMPDIL/ Extended office of CCO.

4.4.1.3 **Uwdlo kulkqp'qh'O lplpi 'Rrcp'chgt 'lpeqrqtclpi 'eqo rrlcpeg+ 'vq'O lplmt { 'qhEqcn'**The project proponent shall submit 04 (Four) hard copies & 01 (one) soft copy of modified Mining Plan and the compliance to the observations along with copy of the dispatch receipt of the Speed Post (confirming that the modified Mining Plan has been sent to section of MoC/ CCO dealing with approval of Mining Plan, concerned administrative section of the Ministry of Coal, Coal Controller, and CMPDIL/ Extended office of CCO).

4.4.1.4 The procedure of submission at Para 4.3.1 will be replaced by process of submission at para 4.3.2 on development of portal for online submission and approval of Mining Plan.

4.4.2 **Qprlpg'U{ uwgo 'qh'Uwdlo kulkqp'qh'O lplpi 'Rrcp'hgt 'Cr r t qxcn**

4.4.2.1 Project proponent shall register online, using registered official mail ID.

4.4.2.2 For the purpose of preparation of Mining plan through a QP or MPPA, project proponent shall share a temporary login with QP/MPPA. This temporary login shall be valid till the preparation and approval of mining plan only.

4.4.2.3 The QP/MPPA shall upload the Mining plan through the temporary login and submit it to the project proponent; QP/MPPA once submits the mining plan to the project proponent, he shall not be able to modify.

4.4.2.4 The Project Proponent shall make payment of processing charges/fees online as specified from time to time by Ministry of Coal;

4.4.2.5 The Project Proponent shall after incorporating relevant company board approvals submit the mining plan to the Approving Authority; The mining plan submitted to approving authority shall become visible to Administrative Section for the respective block, section of MoC/CCO dealing

606048'Qdugtxcvkuu'qhi'ij g'Ego o kvvg'O go dgtu'tij cmi'dg'wr mcf gf 'qpndpg'cpf 'ij g'r't qlgev'tt qr qpdpv'tij cmi'
cnuq'bwdo kv'O klp'i R'exp.'chgt 'kpeqrqt cvkpi 'eqo r kdp'eg.'qpndpg'

7080" Vj g'ewt t g p v l f u g o ' q h l g w l p i ' v j g ' b l p l p i ' t r e p ' t e t w l p k g f ' v j t q w i j ' E O R F K T c p e j K l i j c m l e q p v l p w g 0 ' O l p k m t { ' q h E q c n k l p ' r t q e g u l q h l e t g c v l p i ' e p ' g z v g p f g f ' q h l e g ' q h E q c n E q p v t q n g t ' Q t i c p k c v k p p ' e v ' F g n j K y j k e j ' t j c m l d g ' f g n i c v g f ' y k j ' v j g ' y q t n l q h l r t q e g u l p i ' e p f ' t e t w l p i { ' q h l b l p l p i ' R r e p 0 C ' t g w g t ' ' v q ' v j k u g h g e v t j c m l d g ' k u w g f ' t g r e t c v g n l 0 ' }

7086" Cf o l'p'k'm c'v'k'g'U'g'ev'k'p'q'h'i'v' g'O l'p'k'm { 'q'h'E'q'c'n'f' g'c'n'p'i 'y' k'j 'v'j' g'd'm'e'm'-'t'j' c'm'h'e't' w'k'p'k' g'v'j' g'b' l'p'k'i " r'ie'p'y' k'j 't'g'u'g'ev'v'q'X'g'u'p'i 'q't'f' g't'f'c'm'p'o' g'p'v'q't'f' g't'c'p'f' 'E'O'F'R'C'-'t'i' p'g'f' 'y' k'j 'c'm'p'y'w'g'g'c'v'v'j' g'v'k'o' g'q'h'i' c'm'p'o' g'p'v'c'p'f' 'u'w'd'o' k'v'q'd'u'g't'x'c'v'k'p'u'v'q'-'t'g'ev'k'p'q'h'i'O' q'E'IEE'Q'f' g'c'n'p'i 'y' k'j 'c'r'r't'q'x'c'n'q'h'i'O' l'p'k'i 'r'ie'p'-'v'k'n'i' v'j' g'f' g'x'g'u'r'o' g'p'v'q'h'i'f' q't'v'e'n'h'q't' 'O' l'p'k'i 'r'ie'p'c'r'r't'q'x'c'n'-'y' k'j' l'p'-'H'h'g'g'p'-'37+'f' c' { 'u'q'h'i't'g'g'e'k'r'v'q'h'i'v'j' g'O' l'p'k'i " R'ie'p'O'P' q'p'/u'w'd'o' k'u'k'q'p'q'h'i'e'q'o' o' g'p'w'f'y' k'j' l'p'v'j' g'v'k'r' w'v'w'g'f' 'v'k'o' g'b' c' { 'd'g'r't'g'u'w'o' g'f' 'c'u'\$'p'q'-'e'q'o' o' g'p'v'\$'t'f' q'o' " v'j' g'c'f' o' l'p'k'm c'v'k'g'-'t'g'ev'k'p'-'

7080'' Ugevkqp'qhlO qEIEEQ'f gcnpi 'y kj 'crrtqxcnqlhO klpki 'rnp'ij cmleqo o wplecv'vj g'qdugtxcvkp''hl'
cp{+'vq''vj g'rtqlgev'rtqrqpqpvn''hqt''eqo rncpeg''vkn''vj g'fgxgnro gpv''qhl''qpnlpg''u'wgo ''hqt''
uwdo kukp.'rtqegukpi.'cpf 'crrtqxcnqlhO klpki 'rnp0'

8" Vko gng'g'ht 'uwo kukp'qh'Ego r nkpeg<

9" Cr r t q x k p i 'C w j q t k { <"

- 7.1 On and from the date of publication of order and up to the expiry of period of nine months from the commencement of the Mineral Concession (Amendment) Rules, 2020, the powers to approve mining plan for all categories of coal and lignite mines and sand for stowing shall be exercisable by Project Adviser, Ministry of Coal.
- 7.2 On and from the expiry of period of nine months from the commencement of the Mineral Concession (Amendment) Rules, 2020, the power to approve mining plan for all categories of coal and lignite mines including sand for stowing shall be exercisable by the Coal Controller, CCO, Kolkata, a subordinate office of Government of India in the Ministry of Coal.
- 7.3 The person delegated to approval of Mining Plan under sub-section (1) of section 26 read with clause (b) of sub-section (2) of section 5 of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957) (hereinafter, the 'Act') may seek help of an Internal committee constituted for the purpose.
- 7.4 The approving authority shall dispose of the application for approval of the Mining Plans within a period of 30 days from the date of receiving of such application (The Mining Plan received on or before 30th of Current Month will be considered in the ensuing meeting). Provided that the aforesaid period of 30 days shall be applicable only if the Mining Plan is complete in all respect, and in case of any modifications subsequently suggested after the initial submission of the Mining Plan for approval, the said period shall be applicable from the date on which modified mining plan is re-submitted.

: " K p v g t p c n 'E q o o k v g g 'h q t 'U e t w l k p { 'q h 'O k p k p i 'R n c p <"

- 8.1 Members of the Internal Committee shall examine the mining plan from Technical and administrative angle based on the observations of the Administrative Section dealing with the respective block & CMPDIL/ Extended office of CCO.
- 8.2 The internal committee shall recommend the mining plan for "Approval" or "Rejection". In case of recommendation for Rejection, the committee shall record the reason for Rejection.
- 8.3 Till the opening of CCO office at Delhi, the internal committee shall consist of:
1. Director (Technical), MoC, Member Secretary
 2. Director/ Deputy Secretary. MoC of the section dealing with the allocation/allotment of the respective block, Member
 3. Coal Controller or his representative, Member
 4. Director level officer of CMPDIL, Member

70 F k g e v q t I f g r w f 'U g e t g v c t { . P q o k p c v g f 'C w j q t k { . 'O g o d g t

- 8.4 After opening of CCO office at Delhi, the internal committee shall consist of:
1. Director level officer of CCO having relevant working experience., Member
 2. Director/ Deputy Secretary of the section dealing with the respective block, Member
 3. Head of Regional Coal Controller Office (having relevant working experience in mine planning), CCO Regional Office New Delhi, Member Secretary
 4. Any other technical person having working experience of not less than 15 (fifteen) years in mine planning, Member

; " E q o o w p l e c v k p p 'q h 'C r r t q x c n <"

- ; B" In case of allotted/auctioned mine, section dealing with approval of Mining Plan shall " communicate the decision of the approving authority within a period of 5 (five) working days in form of a letter confirming "in-principle approval" of the Mining Plan to the project proponent

with a copy of the same to the Nominated Authority, Govt. of India. Final approval of **vj g'O lplpi "**
Rcp'lp'wej 'cases shall be communicated by the section dealing with approval of Mining **Rcp.'qprf "**
qp't geglv'bf cr rlecdig'rc{ o gpv'cpf 'lu'eqplto cvlqp'lt qo 'vj g'Nominated Authority, Govt. of
 India.

9.2 While for mines other than auctioned/allotted mines, section dealing with approval of Mining Plan shall communicate the decision of the approving authority within a period of 5 working days.

32" Tgxklqp<"

10.1 Any person aggrieved by any order made or direction issued in respect of mining plan by an officer competent to approval mining plans shall within 30 days of the communication **qh'**such order or direction, apply to the Secretary (Coal), Ministry of Coal for a revision of such order or direction thereon.

10.2 On receipt of any application for revision the authority shall give the aggrieved person a reasonable opportunity of being heard and may within 30 days confirm, modify or set aside the order or direction and his decision thereon shall be final.

33" Vj lu'I wlf gnlpg'supersedes the previous orders and are without any prejudice to any other "
t gxcvp't wgu'cpf "t gi wvklpu."wej "cu'vj qug"luwgf "by the State Governments, Ministry of Environment, Forest and Climate Change, Ministry of Labour and Employment, etc."



***J kmt 'Ulpi j +"**

Under Secretary to the Government of India

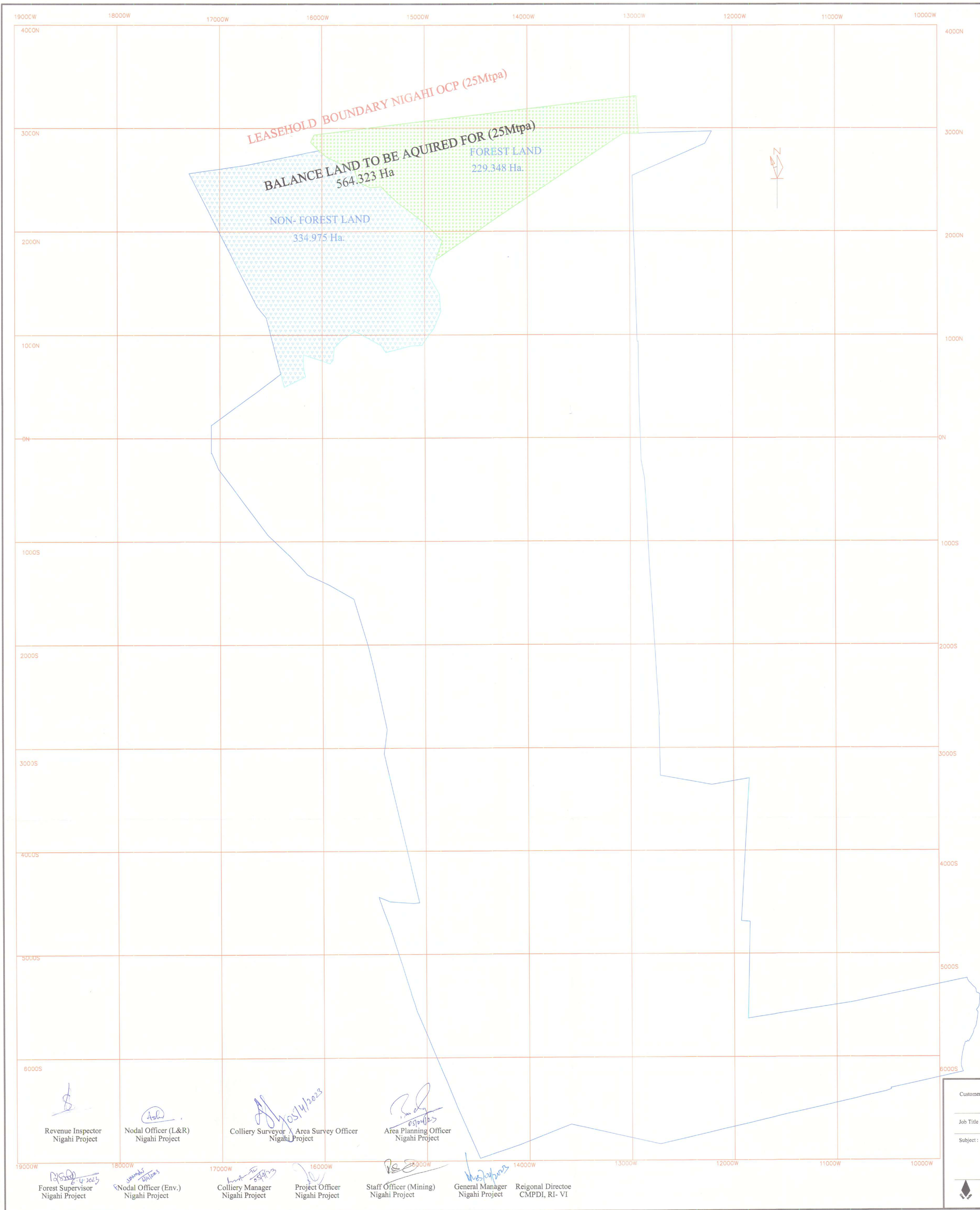
Vq."

Cnlvj g'gzklpi 'Eqcrlcpf 'Nli plkg'dmqenlcmqecvgu'

Copy to: -"

1. All Joint Secretaries, MoC.
2. Coal Controller, Coal Controller's Office, 1- Council House Street, Kolkata.
3. CMD, CIL, Newtown, Rajarhat, Kolkata-700156, W.B
4. CMD, NLCIL, Cuddlore, Distt. Neyveli- **829: 23'*Vco hiNadu**).
5. CMD, Singareni Collieries Company Limited (SCCL), Kothagudem Collieries, Khammam Distt.(A.P).
6. Tech. Director (NIC) - with the request to place it to Website of the Ministry of Coal.

Annexure-VI



LEGEND

SL.NO	PARTICULARS	SYMBOL
1.	LEASEHOLD BOUNDARY NIGAH OCP (25Mtpa)	
2.	564.323 Ha LAND TO BE AQUIRED FOR (25Mtpa)	
3.	FOREST LAND	
4.	NON- FOREST LAND	
5.		

Land Requirement

Type of Land	Total Requirement (25Mtpa) Ha.	Acquired as on (31.03.2020) Ha.	Balance to be acquired (Ha.)
Forest	1471.494	1242.146	229.348
Revenue Forest	38.517	38.517	
Total (Forest)	1510.011	1280.663	229.348
Government	355.829	208.854	146.975
Tenancy	1716.883	1528.883	188.000
Total(Non-forest)	2072.712	1737.737	334.975
Total	3582.723	3018.400	564.323

Plate No. 4

Revenue Inspector
Nigahi Project

Nodal Officer (L&R)
Nigahi Project

Colliery Surveyor
Nigahi Project

Area Survey Officer
Nigahi Project

Area Planning Officer
Nigahi Project

Staff Officer (Mining)
Nigahi Project

General Manager
Nigahi Project

Regional Director
CMPDI, RI- VI

Forest Supervisor
Nigahi Project

Nodal Officer (Env.)
Nigahi Project

Colliery Manager
Nigahi Project

Project Officer
Nigahi Project


Customer : **NORTHERN COALFIELDS LIMITED**

Job Title : **PFR FOR NIGAH OCP (25Mtpa)**

Job No
222306126

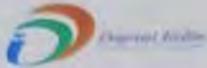
Subject : **Land Requirement Plan**

नॉदर्न कोलफील्ड्स लिमिटेड
(मिनिरेट्ना कंपनी)
(कोल इंडिया लिमिटेड की बचुधारी कंपनी)

 **NCL**

Northern Coalfields Limited
(A Mini Ratna Company)
(A subsidiary of Coal India Limited)

Office of the General Manager,
Nigahi Project

 *Corporate Seal*

CIN: U10103MP1995GOI003160
An ISO: 9001, ISO: 14001 & OHSAS: 18001 Certified Company
पोस्ट-पश्चिमोत्तराखण्ड, सिंगरावली, म. प्र., पिन 486884 Post: Nigahi Project, Distt: Singrauli, M.P. PIN-486884
Phone: 07885- 276040, (FAX) 276306 email: gm@ncl.in, gm@ncl.in, www.ncl.in

Date: 11.03.2023

Ref. No. NCL/NGH/GM/2022-23/175

To,
The District Magistrate Singrauli,
Madhya Pradesh

Subject: Permission for selling of M-sand obtained through Processing of Overburden materials generated from Nigahi Project, NCL.

Sir,

Keeping in view of huge requirement of sand in the Singrauli and nearby district, Northern Coalfields Limited (NCL), a subsidiary of Coal India Limited has taken a new Sustainable Initiative towards producing M-sand by processing the overburden materials removed during the extraction of coal. This initiative has been taken under the directives of the Ministry of Mines (Copy enclosed as Annexure-1) and Ministry of Coal, Under the Sustainable Development Cell (SDC), Ministry of Coal has a continuous thrust on ensuring alternative usage of overburden materials by all the coal companies. As per the DO letter vide ref no. SDC/50/2020-SDC did, 28th May 2021 received from Secretary (Coal), NCL has been asked to expedite its efforts regarding utilization of Overburden materials (Copy enclosed as Annexure-2).

The Overburden materials generated from the mines consists mainly of Sandstones and Shales. Among these two, sandstones predominate. Sandstone is the rock formed by cementing of sands composed of largely of quartz and silicate minerals. IIT Kharagpur undertook study on characterization of OB material and its alternate application; the study found that on an average 89.70% SiO₂ and a minimum of 83% sand equivalent was present in the sandstone sample of adjacent mines (having similar stata) (Relevant portion of the study enclosed as Annexure 3). It may further be noted that utilization of OB material has also been mentioned in the conditions under CTE/CTO granted from MoEF & CC for 22.5MTPA coal production for Nigahi OCP. (Copy of concent letters attached as Annexure-4).

Scope at NCL:-

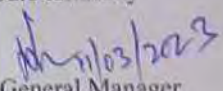
As on date, NCL has already produced more than 123 MT of coal and removed in excess of 430 Meum of Overburden with a stripping ratio of more than 3 in the FY 2022-23. Further with the increase in coal production at NCL, the overburden removal will also increase, hence this alternative utilization of Overburden into sand will not only pave the way restoring natural resources but it will also help in generation of additional space for dump accommodation in internal dumps and may address the issue of shortage of space for dumping which is of grave concern particularly at Nigahi OCP.

Utilization of M-sand:

Construction activities: M-Sand will adhere to IS-383 specifications and can be used in Manufacturing of Cement Concrete, Cement Mortar for brickwork and plaster.

In view of the above, you are hereby requested for giving permission for selling of M-Sand obtained through processing of Overburden materials generated from Nigahi OCP.

Encl:- 1. As above
2. Revenue plan showing location of the site earmarked for OB to sand plant installation, attached as Annexure-5.

Yours faithfully

Area General Manager
Nigahi Area

Copy for kind information to:

(मिनिरल कंपनी)
(कोल इण्डिया लिमिटेड की अनुबंधी कंपनी)



Northern Coalfields Limited
(A Mini Ratna Company)
(A subsidiary of Coal India Limited)

**Office of the General Manager,
Nigahi Project**



CIN- U10102MP1985GOI003160

Aa ISO: 9001, ISO: 14001 & OHSAS: 18001 Certified Company

पोस्ट-परिचयनजिला- सिंगरौली, म. प्र., पिन 486884/ Post- Nigahi Project, Distt- Singrauli, M.P. PIN-486884

Phone: 07805- 276040, (FAX) 276306 email: cgmngh@ncl.gov.in website: www.ncl.co.in

1. Director (Tech/Opm.), NCL HQ
2. Director (Tech/P&P), NCL HQ
3. Chief Manager (Min)/TS to CMD, NCL HQ
4. General Manager (R&D/NI), NCL HQ