



**WEST BENGAL MINERAL DEVELOPMENT &
TRADING CORPORATION LTD.**

(A Govt. of West Bengal Undertaking)

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Memo No : MDTC/PM-5/144(F)(Pt.1)/ 886

Date : 18.04.2022

To

The Additional PCCF and Nodal Officer (FCA)
Government of West Bengal
Aranya Bhawan, Block - LA/10A, Salt Lake City,
Sector - III, Kolkata - 700 106

Subject: Clarifications to the observations made by the Forest Advisory Committee in its meeting held on 31st March, 2022 in connection with FC Proposal of Gourangdih ABC Coal Mine.

Ref: File No. 8-03/2019FC dated 08.04.2022

Madam,

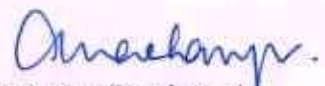
Kindly find attached the clarifications and compliance report in respect of the above referred observations of FAC, MoEFCC in connection with diversion of 109.459 ha of forest land for Open Cast Mining Project at Gourangdih ABC coal mine.

You may also kindly like to give WBMDTCL, being the User Agency, an opportunity to present the clarifications/ compliance report before the Sub-Committee of the FAC so that further/ other observations of the Sub-Committee, if any, may be clarified by us.

Thanking you,

Yours faithfully,

Encl: As stated above


General Manager (Projects)

Clarifications to the observations made by the Forest Advisory Committee in its meeting held on 31st March, 2022 in connection with FC Proposal of Gourangdih ABC Coal Mine.

Ref: File No. 8-03/2019FC dated 08.04.2022

Observation (i):

Schedule-I species like Porcupine, Rock Python, Spectacled Cobra, etc. have been reported in the area. Comments of the Chief Wildlife Warden of the State on the likely impact of the project on wildlife and mitigating measures, if any, required to be taken for the conservation and development of the wildlife be obtained and intimated to the Ministry.

Clarification (i):

Vide Memo No. 896/WL/2M-33(Pt-II)/2021 dated 13.04.2021 of Principal Chief Conservator of Forests, Wildlife and Chief Wildlife Warden, West Bengal it has been clarified as follows;

1. There is no direct evidence of existence of Schedule -I species in the project and buffer area but it is learnt that regular rescue of Rock Python within 10 Km of the project site exists.
2. There is no Wildlife Sanctuary / National Park within 10 km area of the project site.

Copy of the said report of PCCF & CWLW is given at **Enclosure - 1** for reference.

Observation (ii):

Detailed purpose wise breakup of the forest land as well as non-forest land in commensuration with the land use proposed in the approved mining plan needs to be informed by the State.

Clarification (ii):

Details of Land usage:

Land Pattern	Total Area (ha)	Within Mining Lease Area (ha)	Outside Mining Lease Area (ha)
Agricultural Land	48.43	48.43	Nil
Fallow land (Danga)	44.07	44.07	Nil
Degraded land (Old quarry area)	61.316	61.316	Nil
Build up area	60.86	60.86	Nil
Water Body	15.44	15.44	Nil
Forest land (protected & jungle)	109.459*	109.459	Nil
Non agricultural land for colony	5.00	5.00	Nil
Non agricultural land for Rehabilitation	12.00	12.00	Nil
Total	356.575	356.575	Nil

**Note: After the allotment of the Block to WBMDTCL, reconciliation of the land schedule was undertaken. The change in forest area from 92.53 Ha to 109.459 Ha is one of the results of reconciliation. Thus, WBMDTCL has proceeded with the updated land use details and accordingly forest clearance application has been submitted for 109.459 Ha.*

As per Rule 22E (3) (i) of the Mineral Concession (Amendment) Rules, 2020, this change in land type within leased area comes under 'minor changes' in the approved mining plan and does not require fresh approval of the mining plan.

Component wise breakup of proposed land use of mining lease hold area is given as follows;

Sl. No.	Component	Forest Land(ha)	Non-Forest Land (ha)	Total (ha)
1	Quarry Area	91.434	121.83	213.264
2	External Dump	18.025	44.945	62.97
3	Infrastructure	0	9.5	9.5
4	Rehabilitation Colony	0	12	12
5	Workers Colony	0	5	5
6	Road	0	8	8
7	Others Including Safety Zone	0	45.841	45.841
	Total	109.459	247.116	356.575

Observation (iii):

Adequacy of existing road infrastructure to accommodate the increased transportation of coal from the proposed mine and existing mines may be informed by the State supported with scientific and factual inputs.

Clarification (iii):

Detailed report of the traffic density survey both in up and down direction at three locations namely Baradang (0.9 km from the proposed mine in S direction), Majandih (1.6 km from the proposed mine in NE direction) and Dharaspur (3.5 km from the proposed mine in WSW direction) conducted on 03-04/01/2018, 07-08/01/2018 and 10-11/01/2018, respectively is given at **Enclosure 2**. It will appear from the said report that the current road width is sufficient to sustain the present and additional traffic.

Observation (iv):

Railway siding is reported to be located at distance of 20 km from the proposed mine, which is reported to be used by other mines also,

therefore, possibility of evacuation of coal using common closed/piped conveyor corridor should also be explored to reduce pollution loads on the existing road infrastructure.

Clarification (iv):

A detailed study for the Coal Evacuation System was conducted in 2017 through our Transaction Advisor M/s KPMG International. The following railway sidings and railway stations were considered for this study;

Sl. No.	Name	Distance from Coal Block	Type	Present usage and status
1	Barabani	21.20 km	Coal siding & station	ICML coal, active siding
2	Bonjemehari	15.40 km	Coal siding	ECL coal, active siding
3	Charanpur	19.30 km	Coal Siding	Tara East & West coal siding.
4	Chinchuria	15.20 km	Railway halt station	Only railway station, no siding

In this study, long distance conveyor system has been considered but ruled out due to the following points:

- a. Annual peak rated capacity of the mine is only 2.5 Mtpa.
- b. Conveyor length will be from 15 km to 20 km depending upon the siding.
- c. Tentative cost of the conveyor system CHP will be as follows:

Sl. No.	Name	Distance from Coal Block	Unit cost per meter	Expected cost (INR crores)
1	Barabani	21.20 km	4 lakh	848.00
2	Bonjemehari	15.40 km	4 lakh	616.00
3	Charanpur	19.30 km	4 lakh	772.00
4	Chinchuria	15.20 km	4 lakh	768.01

- d. The cost of the long distance conveyor system appears to be very high compared to total coal production and it will more than double the initial investment requirement for the project.

Observation (v):

As per detailed provided online, total area involved in the project is 356.575 ha, comprising of 247.116 ha of non-forest land and 109.459 ha of forest land. Corresponding detail of area mentioned in the

approved Mining Plan are different wherein total area has been mentioned as 370 ha comprising of 92.53 ha of forest land and 277.47 ha of non-forest land. Discrepancy in the area needs to be rectified by the State and exact detail may be provided to the Ministry.

Clarification (v):

370 Ha is the area of the coal block allocated by the Ministry of Coal, Government of India for Gourangdih ABC Coal Mine. Out of this allocated area, some portion (78.52 Ha) in the middle (Block-B) was excluded from the mining plan as this area is heavily built up. Additionally 65.09 Ha was taken outside the allocated Block Area for OB, infrastructure etc and thus the total Project Area envisaged in the Mining Plan is $(370 - 78.52 + 65.09) = 356.57$ Ha. Mining Lease application for 356.57 Ha has been processed by the State Government and the Mining Lease will be executed after Forest and Environmental Clearances are granted.

Details are given in the table as follows:

<i>All dimensions in Hectare</i>					
Sub blocks	Block Area Allocated by MoC, GoI	Deduction for built up area areas [not taken for mine planning]	Area taken for Planning	Area taken outside allocated block boundary for OB, infrastructure etc.	Area applied for Mining Lease (=Project Area as per Mining Plan)
(1)	(2)	(3)	(4) = (2) - (3)	(5)	(6) = (4) OR (5)
Area in Block-A	127.53	0	127.53		127.53
Area in Block-B	90.83	78.52	12.31		12.31
Area in Block-C	151.64	0	151.64		151.64
Area taken out side of block				65.09	65.09
Total	370	78.52	291.48	65.09	356.57

Observation (vi):

Areas of Mining Plan and Mining lease are not same. Ministry's guidelines stipulated that area of safety zone should be inside the mining lease while the same has been kept outside the lease area in the extant case. Similarly, area of external dumps and infrastructure have also been kept outside the lease. Rationale for not including 143.305 ha of area outside the lease containing vital project components like safety zone, external dumps, infrastructure, etc. may be intimated by the State.

Clarification (vi):

The Mining Plan was prepared by the Prior Allottee of the coal block and approved by the Ministry of Coal in 2011. Table 1.3 of the approved Mining Plan is reproduced below;

Sl No	Particulars of utilization	Total land Required (Ha)	Type of Land (Ha)	
			Non-Forest	Forest
1	Quarry area	214.00	121.47	92.53
2	External dump	62.97	62.97	0.00
3	Infrastructure	9.5	9.5	0.00
4	Rehabilitation Colony	12.00	12.00	0.00
5	Workers Colony	5.00	5.00	0.00
6	Road	8.00	8.00	0.00
7	Others including safety zone	45.2	45.2	0.00
	Total	356.67	264.14	92.53

However, the Prior Allottee of the Coal Block did not take mining lease from the State Government till cancelation of the allotment of the Coal Block by Ministry of Coal.

After the block was reallocated to WBMDTCL in 2016, WBMDTCL carried out reconciliation with Land Revenue Records and it was found that the actual forest land as per Revenue Records was actually 109.459 Ha. Plot wise breakup of the Forest Land is given in **Enclosure-3** for reference. Accordingly, forest clearance application has been submitted for 109.459 Ha.

Also, the Mining Plan envisaged Mining Lease for only the quarry area of ~214 Ha (refer to 'Summarised Data'- C(h) Pg. xix of Mining Plan), keeping the external dump etc, outside the ML area which is not permitted. Hence, after reallocation of the Coal Block, WBMDTCL has applied for Mining Lease for the entire project area of 356.57 Ha including the 143.305 Ha which was kept outside ML in the Mining Plan. The Mining Lease will be executed after obtaining Forest and Environment Clearances for the Project and prior to commencement of mining.

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Government of West Bengal
DIRECTORATE OF FORESTS
Office of the Principal Chief Conservator of Forests
& Head of Forest Force, West Bengal
Aranya Bhawan, Block LA-10A, Sector-III,
Salt Lake City, Kolkata-700 106.



No. 3167/L</2M-1334/17

Dt. 27.08.2021

→ To : The Chairman & Managing Director,
West Bengal Mineral Development & Trading Corporation Ltd.
WBIDC Building, 3rd Floor,
DJ-10, DJ Block, Sector -II,
Salt Lake City, Kolkata- 700091

Sub: Certificate regarding the absence of Schedule-I species & non-existence of any Wildlife /
National Sanctuary within 10 Km. of the project area of Gourangdih ABC Coal Mines as
required by the EAC, MoEF & CC, New Delhi

Ref : Your office letter no. i) MDTC/PM-5/144/Env/742 dated. 25.11.2020 &
ii) MDTC/PM-5/144/Env/589 dated. 18.08.2021

Sir,

With reference to above, it has been certified by the PCCF & CWLW vide his letter No. 896/WL/2M-
33(Pt.-II)/2021 dated. 13.04.2021(copy enclosed) which states that there is no direct evidence of Schedule-I
species and there is no Wildlife Sanctuary/National Park within 10 Km. of the project site.

Yours faithfully,

(K. Talukdar)

27/8/21
Addl. Principal Chief Conservator of Forests,
FCA & Nodal Officer.

Encl.: As stated above

No. 3170/L</2M-1334/17

Dt. 27.08.2021

I Copy forwarded for information and necessary actions to, Principal Chief Conservator of Forests,
Wildlife & CWLW, West Bengal.

(S. Mukherjee)

Principal Chief Conservator of Forests
& Head of Forest Force, West Bengal



GOVERNMENT OF WEST BENGAL
DIRECTORATE OF FORESTS

Office of the Principal Chief Conservator of Forests (Wildlife)
& Chief Wildlife Warden, West Bengal

Bilkash Bhawan, North Block, Third Floor, Saltlake City, Kolkata - 700 091.

Tel No. 2334-6900/2358-3208, Fax. 91-033-2334-5946

e-mail: peefwl-wb@nic.in/peefwloffice.fd-wb@bangla.gov.in, Visit us at www.wildbengal.com

Memo No.: 896 / WL / 2M-33(Pt-II) / 2021

Date: 13 / 04 / 2021

To: The Principal Chief Conservator of Forests
& Head of Forest Force, West Bengal.

Attention: Addl. Principal Chief Conservator of Forests
and Nodal Officer, Forest Conservation Act, 1980

Sub: Proposal for diversion 109.459 ha.s of Forest Land for opencast Mining Project at Gourangdih ABC
Coal Mine in favour of WBMDTC under Durgapur Forest Division- Reg.

- Ref:
1. WBMDTCL's letter no. MDTC/PM-5/144/Env/18 dated 05/01/2021.
 2. DFO/ Durgapur Division's memo no. 3720/26 dated 04/01/2021.
 3. APCCF & CCF/ South-East Circle's letter no. 541/SEC/2M-10 dated 19/02/2021.
 4. WBMDTCL's letter no. MDTC/PM-5/144/Env/267 dated 22/03/2021.

With reference to the subject under reference, please find enclosed the report submitted by the
Divisional Forest Officer, Durgapur Division and field verified by the APCCF and CCF, South- East Circle.
Both the officers have informed that :-

1. There is no direct evidence of existence of Schedule-I species in the project and buffer area but it is
learnt that regular rescue of Rock Python within 10 km of the project site exists.
2. There is no Wildlife Sanctuary / National Park within 10 km area of the project site.

This is for your information and taking needful action from your end.

Encl: as stated

(V.K. Yadav)

Principal Chief Conservator of Forests, Wildlife
& Chief Wildlife Warden, West Bengal

Memo No.: 896(3) / WL / 2M-33(Pt-II) / 2021

Date: 13 / 04 / 2021

Copy forwarded for information to :-

1. Addl. Chief Secretary, Forest Department, West Bengal.
2. The Chief Conservator of Forests, South-East Circle, West Bengal.
3. The Divisional Forest Officer, Durgapur Division.

(V.K. Yadav)

Principal Chief Conservator of Forests, Wildlife
& Chief Wildlife Warden, West Bengal

1. BASELINE STATUS OF TRAFFIC DENSITY

1.1 Monitoring location

The traffic density survey was conducted both in up and down direction at three locations namely Baradang (0.9 km from the proposed mine in S direction), Majandih (1.6 km from the proposed mine in NE direction) and Dharaspur (3.5 km from the proposed mine in WSW direction) on 03-04/01/2018, 07-08/01/2018 and 10-11/01/2018, respectively. The locations are shown in Fig 1.

1.2 Methodology

Traffic density was recorded continuously for 24 hours during the monitoring days by visual observation and counting of vehicles under six categories, viz., heavy motor vehicles (buses & truck), light motor vehicles, cycles, motor cycles & scooters, animal drawn vehicles and others. As traffic density on the road is low, one skilled person was deployed during each shift. At the end of each hour, fresh counting and recording was undertaken. Thus, total numbers of vehicles per hour under each category was determined. Report of the study is given at **Annexure -1**

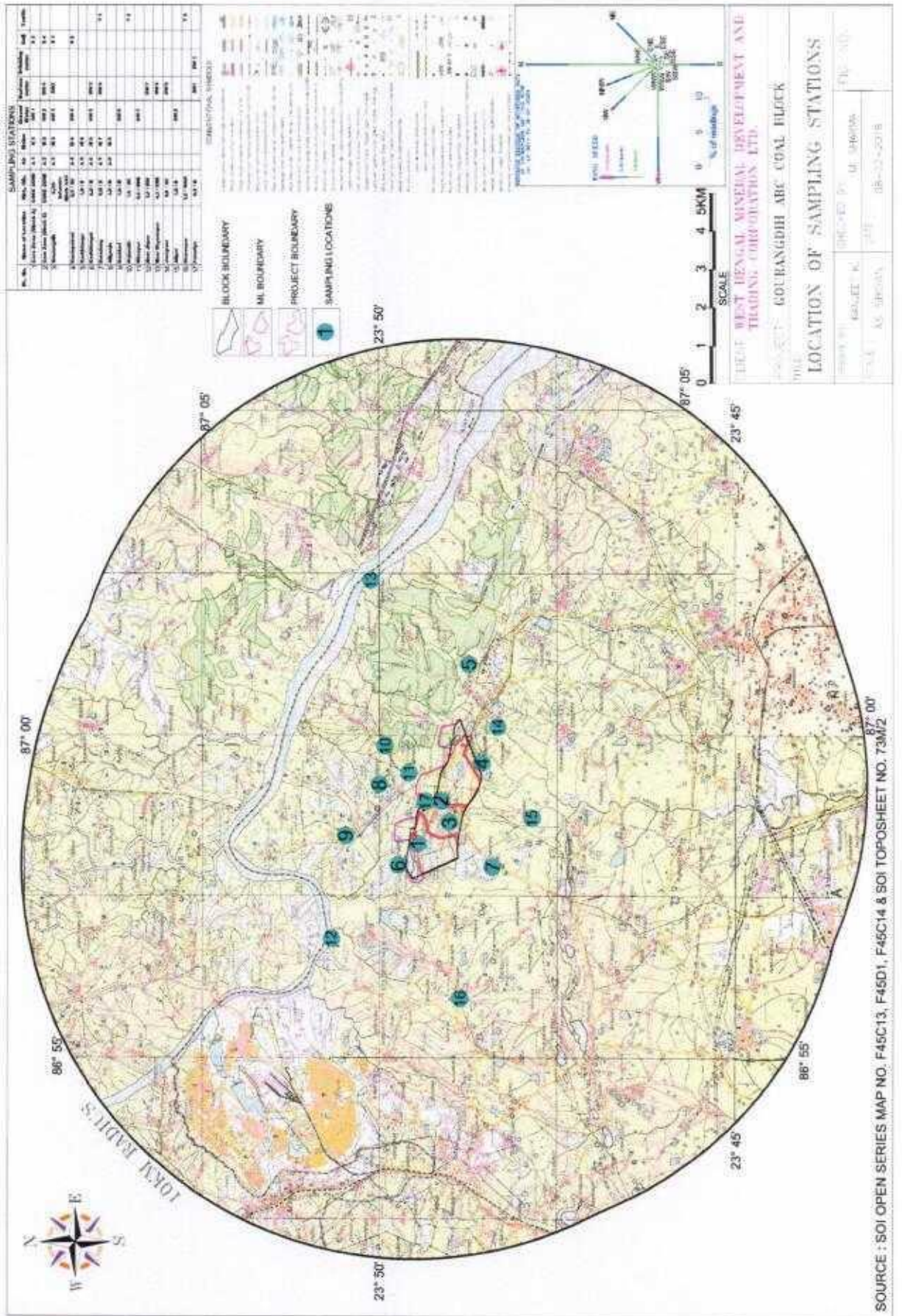
The result of presence of slow moving vehicles in traffic stream is that it affects the free flow of traffic. A way of accounting for the interaction of various kind of vehicles is to express the capacity of roads in terms of common unit. Therefore, the number of vehicles have been converted into "passenger car units" (PCUs) using the equivalency factor as per Table 1 of IRC: 64-1990 and the volume of traffic on the three routes are summarised in **Table 1**.

TABLE 1
TRAFFIC DENSITY

Code	T1		T2		T3	
	Baradang		Majandih		Dharaspur	
Location	Observed count (up+down)	Equivalent PCU	Observed count (up+down)	Equivalent PCU	Observed count (up+down)	Equivalent PCU
Cycles (E.F: 0.5)	857	429	1697	848.5	1350	675
Motor Cycles & Scooters (E.F: 0.5)	2606	1303	1716	858	1615	807.5
LMV (E.F: 1)	812	812	530	530	249	249
Buses (E.F: 3)	205	615	116	348	0	0
Trucks (E.F: 3)	557	1671	378	1134	71	213
Animal Drawn Vehicles (E.F: 8)	0	0	0	0	4	32
Others (E.F: 1.5)	218	327	151	226.5	175	262.5
Total	5255	5157	4588	3945	3464	2239
Width of Road	5.8 m		6.5 m		3 m	
DSV*(Table 3, 4, 5 and section 10.3 as per IRC:64-1990) in PCU/DAY	6000		6000		2000	
Maximum Capacity as per In PCU/day	12000		12000		4000	
IRC 64-1990, section 6.1= %Utilization	43.0		32.9		56.0	
DSV*0.5 % Utilisation						

* **DSV(Design Service Volume):** it is defined as the maximum hourly volume (Vehicles per hour) at which vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under the prevailing roadway, traffic and control conditions while maintaining a designated level of service.

Fig - 1



The condition of the road at Baradang and Majandih is good and it is well maintained. Whereas the road near Dharaspur is having road width only 3 m, which needs widening and maintenance. From the perusal of Table 3.16, it is found that at Baradang, current utilisation is 43.0% of maximum capacity of the road, at Majandih the current utilization is 32.9% of maximum capacity of the road and at Dharaspur, the current utilization is 56.0% of maximum capacity of the road.

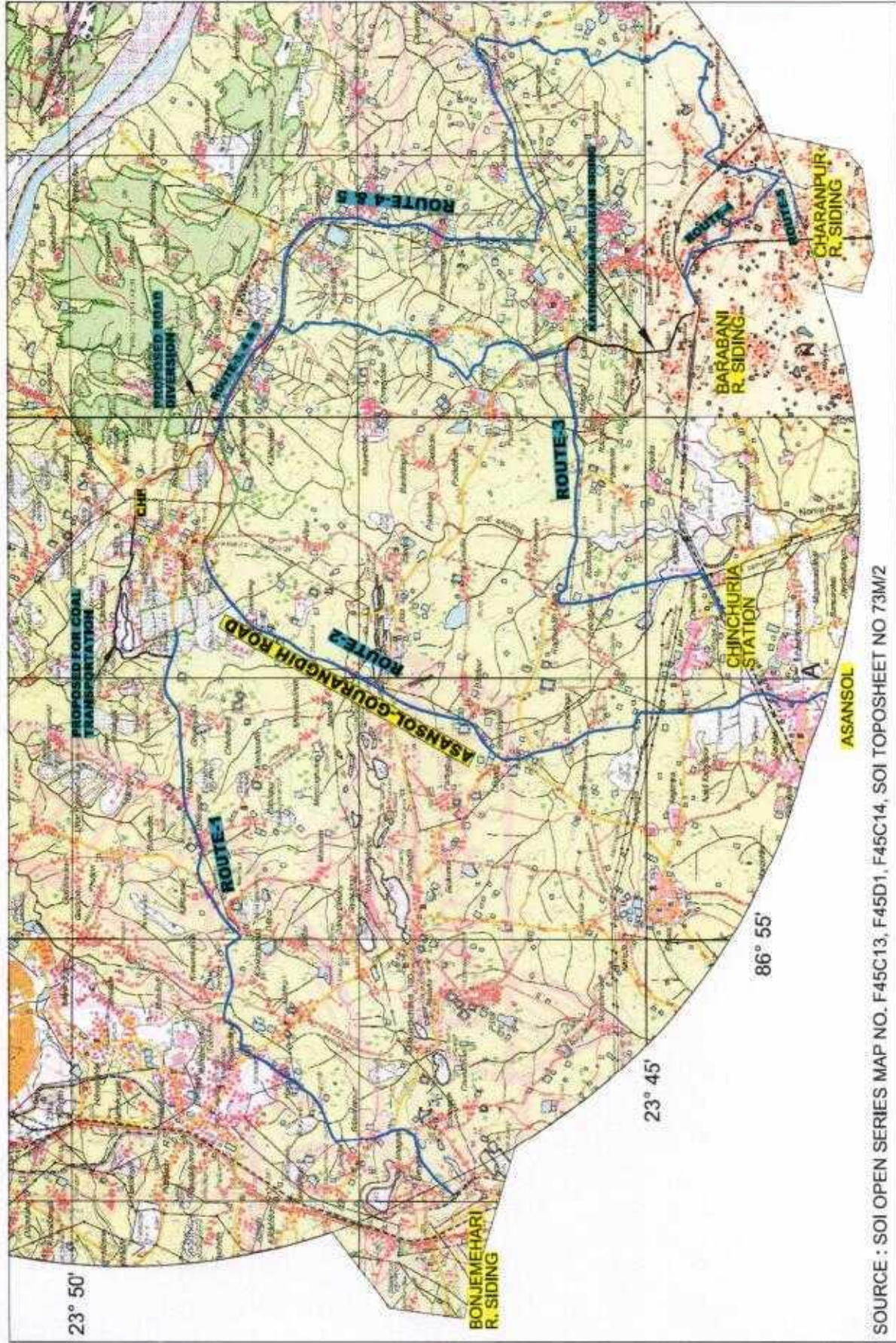
2. ANTICIPATED IMPACT DUE TO TRAFFIC AND MITIGATION MEASURES

There is only one outgoing material, which is coal. The transportation shall be carried out through road either directly to end user or till railway siding by tipping trucks/ dumper having capacity 25 T. Total material to be transported is estimated around 7576 TPD (assuming total working days as 330 and production 2.5 MT of coal in a year). Since the end users will be various industries across the different states, hence the direction of movement of trucks cannot be exactly identified. Certain assumptions have been made with respect to the routes shown in **Fig 2**. The assumptions made are as follows:

- (i) Transport of coal directly till end user by road via Asansol-Gourangdih road. 1 MTPA coal shall be transported through this road. Approximately 244 trucks (to and fro) will move through this road. This route has been called as "Route-2" in **Fig 2**.
- (ii) Transportation of coal via road to any of the four railway sidings, namely, Bonjemehari, Barabani, Charanpur or Chinchuria railway siding. Approximately 1.5 MTPA will be moved to consumers through this road-rail combination. Approximately 364 trucks will move on these routes called as Route 1, Route 3, Route 4 and Route 5 of **Fig 2**.

The traffic survey was conducted as per IRC: 9-1972 at three locations namely Baradang, Majandih and Dharaspur in the up and down directions. Baradang location falls on Gourangdih-Asansol road (Route-2) and Dharaspur location falls on Rupnarayanpur-Gourangdih road i.e connecting road (Route-1) to Bonjemehari railway siding through which coal transportation is proposed. There will be an impact on carrying capacity of these two roads due to additional traffic load. Therefore, the adequacy of the road to support the additional traffic, its maximum capacity and the percentage utilization of the maximum capacity has been calculated. This has been done with respect to existing and future traffic load and the increment in utilization of maximum capacity has been calculated in **Table 2**

FIG 2: THE PROPOSED RAILWAY SIDING AND CONNECTING ROADS TO BE USED FOR TRANSPORTATION OF COAL



SOURCE : SOI OPEN SERIES MAP NO. F45C13, F45D1, F45C14, SOI TOPOSHEET NO 73M/2

Gourangain ABC Coal Mine, WBMDIC Ltd

TABLE 2
OBSERVED EXISTING, ADDITIONAL TRAFFIC AND THEIR % UTILISATION

Code	Location	Existing Traffic (PCU/Day) in January, 2018	Additional traffic proposed (PCU/Day)	Resultant traffic (PCU/Day)	Width of road	DSV# PCU/day	Maximum capacity (MC)##			
							in PCU/day	% Utilization		
								Current in January, 2018	Resultant future	Increment
a	b	c	d	e=b+c	f	g	h	i w.r.t c	j w.r.t e	k=j-i
T1	Baradang	5157	732	5889	5.8 m	6000	12000	42.975	49.1	6.1
T3	Dharaspur	2239	1092	3331	3 m	2000	4000	55.9	83.8	27.3

Note-

Design Service Volume (DSV) in PCU/day as per Table 3&4 of IRC:64-1990

Maximum capacity as per IRC 64-1990, section 6.1 = DSV/0.5, in PCU/day

It can be seen in the above table that the resultant traffic load on Asansol-Gourangdih road (Route-2) at Baradang location will be 49.1 % of the Maximum capacity of the road. Where as on Rupnarayanpur-Gourangdih road (Route-1) at Dharaspur location, the resultant traffic load will be 83.8 % of Maximum capacity the roads. Thus it can be said that the current road width of both the location is sufficient to sustain the present and additional traffic.

2.2 Road diversion

There are two existing road passing through the core zone namely,

- (i) Road-1: **Asansol-Gourangdih road connecting Runakura ghat via Jamgram** is having width of about 7 m (PWD road), passing through the eastern part of proposed Gourangdih C quarry.
- (ii) Road-2: **Rupnarayanpur-Gourangdih road** is having width of about 3 m (Village road), connecting Gourangdih and Rupnarayanpur, passing through the western portion of Gourangdih-A quarry.

These two roads will get excavated during mining operation. Hence, for uninterrupted traffic flow, diversion of these roads is necessary which shall be as follows:

- (i) Road-1: Asansol-Gourangdih road, connecting Asansol to Runakuraghat via Jamgram village is proposed to be diverted towards further east of the Gourangdih quarry-C.

- (i) Road-2: The Rupnarayanpur-Gourangdih road is proposed to be diverted towards further west of the Gourangdih quarry-A and will be connected to Asansol-Gourangdih road.

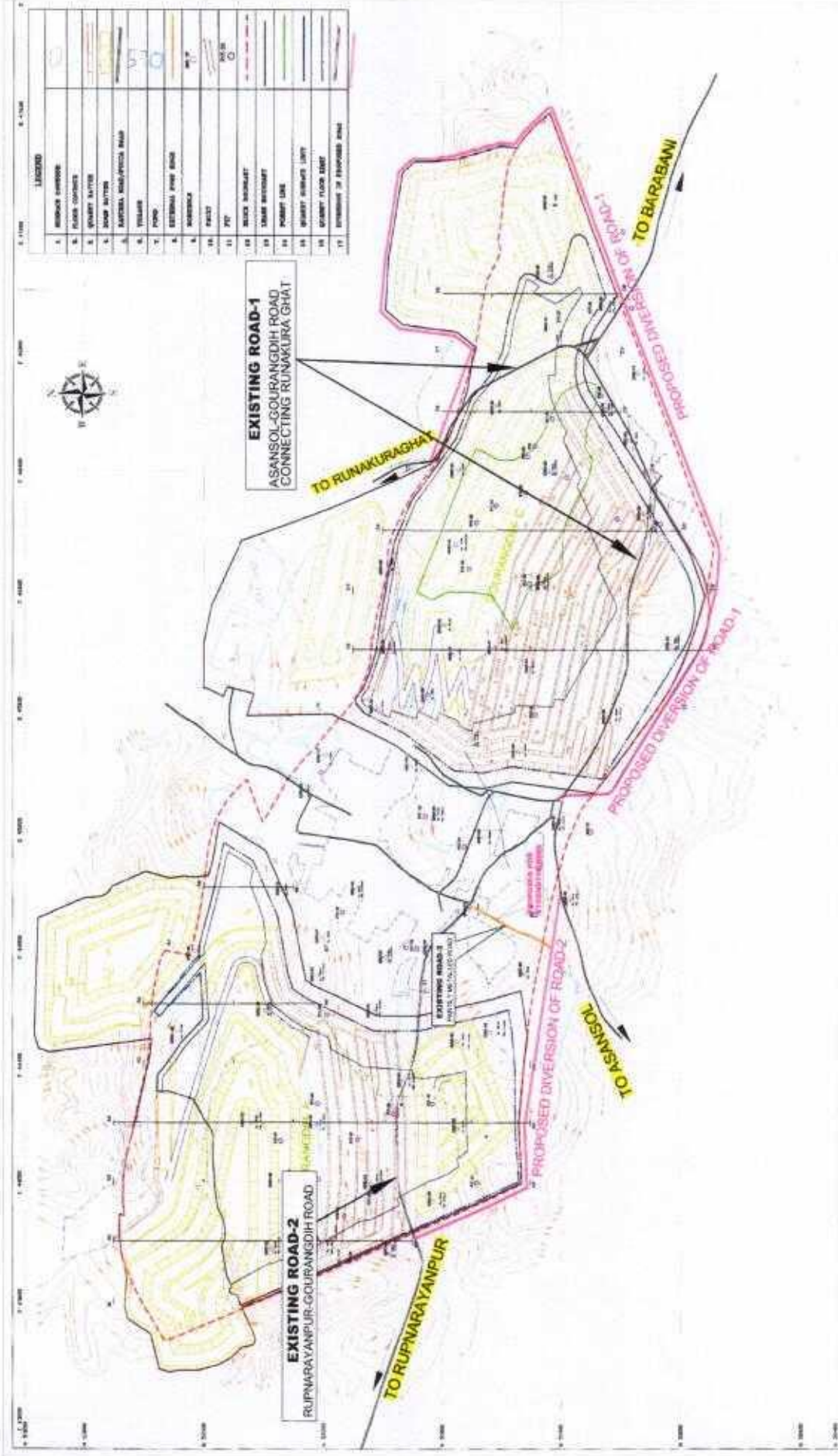
Both the roads will be reconstructed after diversion to a road width equivalent to their existing width.

Apart from the road diversion, road from Gourangdih village to proposed diversion of Rupnarayanpur-Gourangdih road (about 300 m in length), is also proposed to be made black topped/CC road (Road 3). Partly metalled road already exists on the road, which will have to be further strengthened.

The proposed diversion of Road-1 and 2 and strengthening of Road 3 are shown in 15th year stage plan given in **Fig 3**.

The impact will be there only on the path of the road due to alignment change but there will not be any adverse impact. Tree plantation is proposed along both the sides of the diverted road routes, which will act as an absorber of dust and noise pollution and also will improve the aesthetic view of the area.

FIG 3: 15TH YEAR STAGE PLAN SHOWING EXISTING ROADS (NO. 1&2) PASSING THROUGH ML AREA AND THE PROPOSED DIVERSION OF THESE ROADS AS WELL AS THE ROAD (NO. 3) TO BE STRENGTHENED



TRAFFIC DENSITY

GOURANGDIH ABC COAL MINE
 Date of monitoring : 03-04/01/2018
 Location : Barasing Village (Mine to Bardang)

Annexure - 1

N: 25°48'30.5"
 E: 86°55'5.5"

Hours	UP						Down						Total											
	Cycle	Motor cycles and scooters	LMV (car, jeep, van, three wheelers etc.)	Buses	Trucks	Animal drawn vehicles	Others	Total	Cycle	Motor cycles and scooters	LMV (car, jeep, van, three wheelers etc.)	Buses	Trucks	Animal drawn vehicles	Others	Total	Cycle	Motor cycles and scooters	LMV (car, jeep, van, three wheelers etc.)	Buses	Trucks	Animal drawn vehicles	Others	Total
7:00-8:00	30	45	12	7	8	0	12	114	38	36	15	6	8	0	10	114	68	81	27	13	17	0	22	228
8:00-9:00	40	74	14	8	21	0	7	164	22	58	17	8	6	0	11	132	62	132	31	16	27	0	18	286
9:00-10:00	25	50	26	8	24	0	9	176	33	84	24	9	14	0	12	186	62	174	50	17	38	0	21	362
10:00-11:00	32	114	31	8	10	0	8	203	90	101	28	8	20	0	6	283	122	215	58	16	30	0	14	466
11:00-12:00	47	124	30	7	16	0	7	233	32	111	23	8	12	0	8	185	79	235	53	15	30	0	16	428
12:00-13:00	43	98	22	6	5	0	7	183	19	93	21	8	6	0	6	153	82	191	43	16	11	0	13	336
13:00-14:00	26	74	23	8	6	0	6	143	26	61	15	8	5	0	7	122	52	135	38	15	11	0	13	255
14:00-15:00	25	60	36	9	11	0	9	170	19	83	31	9	6	0	5	153	44	163	67	18	17	0	14	323
15:00-16:00	30	92	29	8	8	0	11	178	32	67	27	8	9	0	12	165	62	159	96	16	17	0	23	333
16:00-17:00	34	96	33	8	5	0	7	182	35	112	29	8	9	0	10	203	62	207	62	16	14	0	17	386
17:00-18:00	26	98	26	8	16	0	2	176	47	126	28	8	4	0	3	216	69	224	54	16	20	0	5	392
18:00-19:00	19	103	30	4	11	0	3	183	21	108	32	4	15	0	2	182	73	211	62	8	26	0	4	343
19:00-20:00	3	82	18	2	8	0	1	114	8	90	15	2	29	0	3	141	9	172	33	4	33	0	4	265
20:00-21:00	0	51	14	0	16	0	2	83	2	62	21	0	19	0	1	105	0	113	15	0	35	0	3	188
21:00-22:00	0	27	6	0	20	0	0	63	0	30	18	0	22	0	0	78	0	57	24	0	42	0	0	123
22:00-23:00	0	7	10	0	4	0	0	21	0	0	8	0	7	0	1	21	0	12	18	0	11	0	1	42
23:00-24:00	0	2	6	0	11	0	0	19	0	1	4	0	9	0	0	14	0	3	10	0	20	0	0	33
0:00-1:00	0	0	4	0	6	0	0	10	0	0	7	0	16	0	8	23	0	0	11	0	22	0	0	33
1:00-2:00	0	0	3	0	15	0	0	18	0	0	11	0	13	0	0	24	0	0	14	0	28	0	0	42
2:00-3:00	0	2	0	0	18	0	0	20	0	0	3	0	12	0	0	15	0	2	3	0	30	0	0	35
3:00-4:00	0	5	5	0	11	0	0	21	0	5	6	0	15	0	2	28	0	10	11	0	26	0	2	49
4:00-5:00	4	15	8	2	13	0	4	46	3	11	5	2	8	0	1	32	7	28	13	4	23	0	5	78
5:00-6:00	10	23	7	3	5	0	7	65	7	13	9	3	8	0	4	44	17	36	16	6	13	0	11	99
6:00-7:00	13	33	10	4	6	0	6	72	23	15	12	4	10	0	5	69	36	48	22	8	16	0	11	141
TOTAL	482	1324	403	102	276	0	108	2615	466	1282	405	103	261	0	110	2940	857	2606	812	205	557	0	218	5255

TRAFFIC DENSITY

COURANGDRI ABC COAL MINE
 Date of monitoring : 07-08/12/2018
 Location : Majindri Village (Close to Majindri)

Annexure - 1
 contd.

N: 23°49'46.0"
 E: 85°57'39.6"

Hours	Cycle	Motor cycles and scooters	LMV (car, jeep, van, three wheelers etc.)	Up					Total
				Buses	Trucks	Animal drawn vehicles	Others		
7:00 - 8:00	23	21	10	4	8	0	4	20	
8:00 - 9:00	31	37	17	4	4	0	4	98	
9:00 - 10:00	24	46	21	6	2	0	4	102	
10:00 - 11:00	41	79	15	6	6	0	9	166	
11:00 - 12:00	70	61	22	5	3	0	3	184	
12:00 - 13:00	66	67	11	5	4	0	7	160	
13:00 - 14:00	90	58	9	6	4	0	8	175	
14:00 - 15:00	56	59	12	4	4	0	7	144	
15:00 - 16:00	74	56	18	4	7	0	6	161	
16:00 - 17:00	127	69	16	3	1	0	3	218	
17:00 - 18:00	122	67	23	2	6	0	3	245	
18:00 - 19:00	52	50	18	1	12	0	2	145	
19:00 - 20:00	21	51	12	0	15	0	1	100	
20:00 - 21:00	5	33	9	0	10	0	0	57	
21:00 - 22:00	0	12	5	0	18	0	0	35	
22:00 - 23:00	0	4	6	0	7	0	0	17	
23:00 - 24:00	0	2	8	0	12	0	0	22	
0:00 - 1:00	0	0	9	0	10	0	0	19	
1:00 - 2:00	0	0	2	0	4	0	0	6	
2:00 - 3:00	0	0	0	0	5	0	0	5	
3:00 - 4:00	0	0	0	0	10	0	0	10	
4:00 - 5:00	0	5	3	1	12	0	1	28	
5:00 - 6:00	11	7	5	2	5	0	2	32	
6:00 - 7:00	21	17	8	3	3	0	2	54	
TOTAL	640	867	259	56	174	0	64	2240	

Cycle	Motor cycles and scooters	LMV (car, jeep, van, three wheelers etc.)	Down					Total
			Buses	Trucks	Animal drawn vehicles	Others		
10:00	38	14	6	4	0	7	178	
11:00	78	15	6	9	0	8	278	
12:00	80	15	6	11	0	5	222	
13:00	51	16	4	4	0	10	168	
14:00	88	18	5	5	0	6	166	
15:00	42	14	5	6	0	3	111	
16:00	44	5	5	16	0	6	99	
17:00	27	17	4	7	0	3	113	
18:00	69	18	3	3	0	5	138	
19:00	82	10	3	6	0	4	103	
20:00	58	19	2	5	0	4	86	
21:00	41	12	0	10	0	2	79	
22:00	23	14	0	15	0	4	64	
23:00	12	10	0	4	0	0	26	
0:00	4	10	0	15	0	0	29	
1:00	0	12	0	18	0	0	30	
2:00	0	4	0	4	0	0	8	
3:00	0	0	0	13	0	0	13	
4:00	2	0	0	15	0	0	21	
5:00	15	5	1	9	0	2	60	
6:00	30	7	2	5	0	5	91	
7:00	33	8	3	5	0	3	132	
8:00	33	8	3	5	0	3	132	
8:57	869	271	60	204	0	87	2348	

Cycle	Motor cycles and scooters	LMV (car, jeep, van, three wheelers etc.)	Total					Total
			Buses	Trucks	Animal drawn vehicles	Others		
13:00	59	24	10	12	0	11	248	
14:00	115	33	10	13	0	10	323	
15:00	134	36	12	13	0	5	324	
16:00	140	21	10	10	0	19	324	
17:00	149	40	10	8	0	12	350	
18:00	114	25	10	10	0	10	271	
19:00	100	14	11	20	0	14	274	
20:00	102	39	5	9	0	10	251	
21:00	123	35	8	14	0	15	294	
22:00	150	34	6	4	0	9	365	
23:00	143	33	5	13	0	7	348	
0:00	101	37	3	18	0	4	231	
1:00	94	24	0	25	0	5	164	
2:00	26	15	0	22	0	1	109	
3:00	55	23	0	25	0	5	149	
4:00	24	15	0	22	0	0	61	
5:00	8	16	0	22	0	0	46	
6:00	2	9	0	22	0	0	39	
7:00	0	0	0	28	0	0	44	
8:00	0	6	0	16	0	0	14	
9:00	0	0	0	25	0	0	31	
10:00	2	8	2	21	0	3	88	
11:00	20	8	4	10	0	7	123	
12:00	37	12	4	8	0	5	166	
13:00	50	15	6	8	0	5	188	
14:00	1716	530	118	378	0	151	4588	

ENCLOSURE-3

Plot Schedule of Forest Land of Gourangdih ABC Coal Mine

SI No.	Mouza	Plot No.	Forest Area (Acre)
1	Panuria	636	1.122
2		634	4.216
3		632	1.238
4		253P	36.558
5		248P	35.434
6		633	8.221
7		250/2702	5.839
8		2201P	2.318
9		2270P	0.937
10		638	12.409
11		649	0.393
12		647	0.862
13		644	7.171
14		643	4.732
15		592	1.829
16		2209	0.063
17		2208	0.566
18		2207	0.195
19		2218	0.600
20		2268	10.749
21		2276P	16.007
22		2266P	3.109
23		2281P	2.392
24		822P	1.223
25		822P	0.875
26		1371	0.363
27		1373	1.490
28		1757	6.160
29		1366	0.680
30		1367	0.618
31		1366/2729	1.428
32		1362/2728	0.867
33		1357	4.932
Sub Total			175.596

SI No.	Mouza	Plot No.	Forest Area (Acre)	
34	Katapahari	105	2.427	
35		98	6.573	
36		102P	5.214	
37		9	18.288	
38		12P	18.056	
39		13	0.600	
40		7	1.223	
41		6	0.054	
42		1	4.092	
43		4	1.147	
Sub Total			57.674	
44		Jamgram	187P	1.132
45			178P	9.990
46	176P		23.446	
47	219P		2.634	
Sub Total			37.202	
Grand Total in acre			270.472	
Grand Total in Ha			109.459	