

## MCDR INSPECTION REPORT

### 1.0 GENERAL

SN	Particulars	Details
1	Name of the Mine	DALLI MECHANISED MINE
2	Total Lease Area (Ha) with breakup of Non-forest and forest land	Total Lease Area - 719.60 Ha. (Part) Non Forest - 436.00 Ha. Forest - 283.60 Ha.
3	Mine code	30 MPR 13006
4	IBM Registration Number under rule 45 of MCDR, 1988	5662/2011/IBM
5	Name of the lessee, Address, phone, email and fax number	Bhilai Steel Plant, Steel Authority of India Ltd. Shri Kalyan Maity (Director R-M&L) Ispat Bhawan, Lodhi Road, New Delhi Ph- 01124366219, Fax- 01124369355 Email- kalyan.maity@sailex.com
5a	Date of Inspection	7-12-2016
6	Village	KONDEKASA
7	Taluka/Mandal	Taluka - DALLI-RAJHARA
8	District	BALOD
9	Pincode	491228
10	State	CHHATTISGARH
11	Post office	DALLI RAJHARA
12	Nearest police station	DALLI RAJHARA
13	Nearest Railway station	DALLI RAJHARA
14	Date of Grant of Mining Lease	05.11.1962
15	Date of Execution	30.4.1963
16	Date of opening of Mine	05.11.1962
17	Date of first Renewal, if applicable and its period & expiry	NA
18	Date of second Renewal, if applicable and its period & expiry	Second Renewal- 01.06.2003 Period & Expiry – 20 years, 31.05.2023
19	Date of submission of renewal application if Mining Operations are continuing under deemed extension	NA

20	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	SHRI KALYAN MAITY, Dir (Raw Material & Logistics), Ispat Bhawan, Lodhi Road, New Delhi
21	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Shri Samir Swarup, DGM cum Agent(DMM & DMNL), Off Address: Dalli Administrative Building,
22	Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines	Shri C.Srikant, Mine Manager, 07882851804(Off), 9407982915
23	Name of the Mining Engineer, Qualification and total experience with Address, phone, email, fax number and date of appointment in mine	Shri Satyendra Kumar, AMIE(Mining), 15 yrs exp in various mines.
24	Whether Geologist and Mining Engineer appointed in mines satisfy the rule 42 & carrying out their duties as per rule 43 & 44.	YES
25	Date of Approval of Mining Plan/Modified Mining Plan with five-year period and specific condition in approval letter, if any.	1. Mining Plan – 15.12.2005 2. Modified Mining Plan – 23.01.2007
26	Date of Approval of Scheme of Mining/Modified Scheme of Mining with five-year period and specific condition in approval letter, if any.	Review Of Mining Plan – 03.08.2016 (2013-14 to 2017-18)
27	Mineral(s) granted in lease and proved for mining	HEMATITE (IRON ORE)
28	Method of Mining(Open cast, Underground)	OPENCAST
29	Category (Fully Mechanised, Others or Manual)	FULLY MECHANISED
30	Captive/Non Captive	CAPTIVE

Scientific Mining: Compliance of proposals of approved mining plan/scheme of mining. –

### Exploration

SN	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	NIL	3	
1b	Exploration over lease area for Geological axis 1 or 2.	G1	G1	

1c	Exploration Agency & Expenditure in lakh Rupees during the year	NIL	Mineral Exploration Corporation Ltd. Nagpur, 39.19 lakh rupees	
1d	Balance area to be explored to bring Geological axis in 1 or 2	NIL	NIL	
1e	Balance reserves as on 01.04.2016	NA	38.14 mt	
1f	General remarks of inspecting officer on geology, exploration etc.	The area has been explored as per the proposals of the mining plan.		

## 2.0 Development

SN	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	Dalli: Between 610 to 470 Bench level Jharandalli: Between 530 to 445 Bench level	Actual work is as per the proposals.	
2b	Separate benches in topsoil, overburden and mineral (Rule 15)	Dalli: Ore: 16, OB/waste: 13, Jharandalli: ore: 18, waste: 21 Kokan East: one each in ore and waste	Dalli: OB/Waste: 02/8 (intercalated waste, Ore: 10 Jharandalli: OB/waste: 09, Ore: 16	
2c	Stripping ratio or ore to OB ratio	Dalli: 1 : 1.07 Jharandalli: 1: 0.50	Dalli: 1:0.72 Jharandalli: 1:0.82	
2d	Quantity of topsoil generation in m3	NIL	NIL	
2e	Quantity of overburden generation in m3	Dalli: 4000000 t Jharandalli: 1000000 t	Dalli: 1848398 t Jharandalli: 985545 t	30.11.2016
2f	General remarks of inspecting officer on development of pit w.r.t. type of deposit etc.	The development of the pit is adequate to the type of deposit.		

	Item	Proposals	Actual work	Remarks
3a	Number of pits proposed for production	1	1	
3b	Quantity of ROM mineral production proposed	Dalli: 3750000 t Jharandalli: 2000000 t	Dalli: 1793358 t Jharandalli: 1193794 t	Up to 30.11.2016
3c	Recovery of salable /usable mineral from ROM production	Dalli: 3075000 t (18% Loss after Washing) Jharandalli: 1162500 T	Dalli: 2309816 t (LUMP+FINES) Jharandalli: 1095535t(LUMP+FINES) Slime Loss- 98259 T (Loss after Washing)	Up to 30.11.2016
3d	Quantity of mineral reject generation	Nil	Nil	
3e	Grade of mineral reject generation and threshold value declared	Nil	Nil	
3f	Quantity of sub-grade mineral generation	Dalli: 384000 T Jharandalli: 249000 T	Dalli: 507032.6 T Jharandalli: 98259 T	
3g	Grade of sub-grade mineral generation	Fe- 45-55%	(Fe-49.88%, SiO <sub>2</sub> -17.77%, Al <sub>2</sub> O <sub>3</sub> -7.45%)	
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised (Dalli crushing, screening & washing Plant)	Mechanised (Dalli crushing, screening & washing Plant)	
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	No	No	
3j	Provision of drilling & blasting in mineral benches	Blast hole drilling using idm-30 drill machines.	Blast hole drilling using idm-30 drill machines.	
3k	Provision of mining machineries in mineral benches	Hydraulic excavators, dumpers, dozers	Hydraulic excavators, dumpers, dozers	

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	YES	YES																																													
3m	Total area covered under excavation/pits	Dalli: 129.30 Ha. Jharandalli: 63.54 Ha	Dalli: 126.45 Ha. Jharandalli: 63.54 Ha																																													
3n	Ore to OB ratio for the pit/mine during the year	Dalli: 0.94:1 Jharandalli:1:0.50	Dalli: 1:1.38 Jharandalli: 1:0.69																																													
3o	Total area put in use under different heads at the end of year	Nil	Dalli: 439.90 Ha Jharandalli: 36.14 Ha																																													
3p	Production of ROM mineral during last five-year period, as applicable (2011-2016)	<table border="1"> <tr><td>2011-12</td><td>4100000</td></tr> <tr><td>2012-13</td><td>2500000</td></tr> <tr><td>2013-14</td><td>3473000</td></tr> <tr><td>2014-15</td><td>3267000</td></tr> <tr><td>2015-16</td><td>2887000</td></tr> <tr><td colspan="2">Jharandalli:</td></tr> <tr><td>2011-12</td><td>1267079</td></tr> <tr><td>2012-13</td><td>1578704</td></tr> <tr><td>2013-14</td><td>1740641</td></tr> <tr><td>2014-15</td><td>1448129</td></tr> <tr><td>2015-16</td><td>1193794</td></tr> </table>	2011-12	4100000	2012-13	2500000	2013-14	3473000	2014-15	3267000	2015-16	2887000	Jharandalli:		2011-12	1267079	2012-13	1578704	2013-14	1740641	2014-15	1448129	2015-16	1193794	<table border="1"> <tr><td>2011-12</td><td>4020400</td></tr> <tr><td>2012-13</td><td>3918514</td></tr> <tr><td>2013-14</td><td>3472520</td></tr> <tr><td>2014-15</td><td>3267480</td></tr> <tr><td>2015-16</td><td>2887126</td></tr> <tr><td colspan="2">Jharandalli:</td></tr> <tr><td>2011-12</td><td>1267079</td></tr> <tr><td>2012-13</td><td>1578704</td></tr> <tr><td>2013-14</td><td>1740641</td></tr> <tr><td>2014-15</td><td>1448129</td></tr> <tr><td>2015-16</td><td>1193794</td></tr> </table>	2011-12	4020400	2012-13	3918514	2013-14	3472520	2014-15	3267480	2015-16	2887126	Jharandalli:		2011-12	1267079	2012-13	1578704	2013-14	1740641	2014-15	1448129	2015-16	1193794	Figures for the year 2015-16 up to Nov. 2016 only.
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3q	General remarks of inspecting officer on method of mining etc.	The method of mining is appropriate to the type of deposit.																																														

#### 4.0 Solid Waste Management-Dumping

SN	Item	Proposals	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 32, 33)	No top soil.	Being done	
b	Location of topsoil, OB & mineral reject dumps	Dalli: Active dump in North-East. Backfilling in western part of the pit Jharandalli: in the southern side of the Dalli & Jharandalli common mine control boundary.	Actual work is as per the proposals.	
4c	Number of dumps within lease area and outside lease area	Dalli: Within LA – 1 Jharandalli: Within LA - 4	Dalli: Within LA – 1 Jharandalli: Within LA - 4	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside the ultimate pit limit	Outside the ultimate pit limit	
4e	Number of active & alive	Dalli: 1 Jharandalli: 2	Dalli: 1 Jharandalli: 2	

	dumps			
4f	Number of dead dumps	Dalli: Nil Jharandalli: 2	Dalli:Nil Jharandalli: 2	
4g	Number of dumps stabilised	Dalli: Nil Jharandalli: 2	Dalli: Nil Jharandalli: 2	
4h	Whether Retaining wall or garland drain all along dumps are there	Yes	Yes	
4i	Length of Retaining wall or garland drain all along dump	Nil	Dalli: 200 m Jharandalli: 1.2 km	
4j	Number of settling ponds	Not Proposed (old ones constructed since long)	15 Constructed since long	
4k	Specific comments of inspecting officer	Overall waste disposal is in accordance with the approved review of mining plan.		

### **5.0 Solid Waste Management-Backfilling**

SN	Item	Proposals	Actual work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Terracing of active Dump at 500 mRL between 7200-7500N and 5000-5500E	Being done	
5b	Area under backfilling of mined out area	7.6 Ha	7.6 Ha	
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 32)	Not proposed	Work under progress	
5d	Total area fully reclaimed & rehabilitated	Nil	NA	No area matured for reclamation
5e	General remarks of inspecting officer on backfilling, reclamation etc	The efforts towards backfilling and reclamation are satisfactory.		

### **6.0 Progressive Mine Closure Plan**

SN	Item	Proposals	Actual work	Remarks
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6a	Whether Annual report on PMCP submitted on time and correctly - Rule 23E(2). Details should be given in the format as given in Annexure-20.	Yes	No	Violation issued
6b	<p>Management of worked/mined out benches</p> <p>i) Area available for rehabilitation (ha)</p> <p>ii) Afforestation done (ha)</p> <p>iii) No. of saplings planted during the year</p> <p>iv) Cumulative no. of plants</p> <p>v) Any other specific method of rehabilitation</p> <p>vi) Cost incurred on watch &amp; care during the year</p>	Not Proposed	NA	
6c	<p>Compliance on reclamation and rehabilitation by backfilling</p> <p>i) Voids available for backfilling (L X B X D)</p> <p>ii) Void filled by waste/tailings</p> <p>iii) Afforestation on the backfilled area</p> <p>iv) Rehabilitation by making water reservoir</p> <p>v) Any other specific means</p>	<p>330X175X42 Backfill-ii (RE-2)</p> <p>2.5 MT</p> <p>NIL</p> <p>NIL</p>	<p>Not commenced</p> <p>NIL</p> <p>NIL</p> <p>NIL</p>	

6d	Compliance of Rehabilitation of waste land within lease  i) Afforestation  ii) Area rehabilitated (ha)  iii) Method of rehabilitation	NIL  NIL  NIL	Nil	
6e	Compliance of Environmental monitoring (core zone & buffer zone)	Proposed	Being done	
6f	General remarks of inspecting officer on PMCP compliance & progressive	Satisfactory.		

### **7.0 Mineral Conservation**

SN	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Proposed	Being Done	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Mechanical screening & washing	Mechanical screening & washing	
7c	Different grade of mineral sorted out at mines	Lumps, Fines & Slime	Lumps, Fines & Slime	
7d	Any beneficiation process at mines	Fluidised Bed Classifier	Fluidised Bed Classifier	
7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	Overall efforts towards mineral conservation and beneficiation are satisfactory.		

### **8.0 Environment**

SN	Item	Proposals	Actual work	Remarks
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8a	Separate removal and utilization of topsoil (Rule 32)	Not applicable	At present top soil is not encountered.	
8b	Concurrent use or storage of topsoil	NA	NA	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Proposed	Being maintained.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Proposed	Dalli: In-pit dumping of waste rock for reclamation & rehabilitation of mined out area. Jharandalli: Rehabilitation of old waste dump of 2 ha is in progress	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Proposed	Not yet commenced	
8f	Baseline information on existence of plantation & additional plantation done (Rule 41)		Dalli: Within ML =86.5 Ha. Outside ML =115 Ha. Total= 201.5 Ha. Jharandalli: Within ML =47.75 Ha. Outside ML =1.0Ha. Total = 48.75 Ha.	
8g	Survival rate	NA	Survival rate =88%	
8h	Water sprinkling on roads to control airborne dust	Proposed	Being done	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines are	Overall efforts towards aesthetic beauty in and around mines are satisfactory.		

## 9.0 Compliance of Rule 45

S.N	Item	COMMENTS	Remarks
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	Status of submission of Monthly and Annual returns	MR and ARs submitted in physically. AR for 2015-16 not submitted online.	Violation issued

S.N	Item	Details given in A.R.	Observation of I/Officer	Remarks
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Appointed	Appointed	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Abandoned Pits: 9.0 ha Current Workings: 147.62 ha Reclaimed: 9.0 ha Waste disposal: 18.42 ha Plant, buildings, etc.: 52.64 ha Subgrade dumps: 8.23 ha	In order	
9d	Scrutiny of Annual return on afforestation	Nil	State forest deptt. Is authorised to carry out afforestation, after payment of charges.	
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	Nil	Mineral rejects are slime which is stored in Hitkasa Dam. Av. quality of slime is 49.63% Fe	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Dalli: ROM: 2887126 T Jharandalli: ROM: 1715785 T	In order	2015-16
9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Ex-mine price:Lumps (62-65%Fe): Rs 1247.63/MT Fines (60-62%Fe): Rs 775.13 T COP, Dalli: Rs 1150.98/MT Jharandalli: Rs 621.6/MT	In order	
9i	Scrutiny of Annual return on fixed assets	Total EMV: Rs 389473793.6	In order	Estimated Market Value
9k	Scrutiny of Annual return on mining machineries	Excavators: 19 Dumpers, Tippers: 62 Dozers: 6 Pay Loader: 3 Drills: 7 Water Tankers: 7	In order	

10- Details of violations observed during current inspection and compliance position of earlier violation pointed out:-

No outstanding violation. During the present inspection violation of Rule 23E(2), 45 (5)(b), and 46 were observed and pointed out to the lessee on 17.1.2017.

(J.S. Hada)  
Assistant Mining Geologist