

## **MCDR INSPECTION REPORT**

### **General**

<b>S.N.</b>	<b>Particulars</b>	<b>Details</b>
1	Name of the Mine Date of Inspection: Name of Inspecting Officer	Dalli Mechanised & Jharandalli Iron Ore Mine (Rajhara Hill Lease) 01/05/2018 & 02/05/2018 Shri R. K Das (Sr. ACOM) & Rudra N. Mishra (SMG)
2	Total Lease Area (Ha) with breakup of Non-forest and forest land	Non- forest : 436.00 hect. Forest Land : 283.60 hect. Total Land : 719.60 hect.
3	Mine code	30MPR13002
4	IBM Registration Number under rule 45 of MCDR,2017	IBM/5662/2011
5	Name of the Lease, Address, Phone, email and fax number	Bhilai Steel Plant ,Steel Authority of India,Ispat Bhawan, Lodhi Road,New Delhi. Email: raman.sail@sailex.com Phone 011- 24367105 & 24363358
6	Village	Kondekasa
7	Taluka/Mandal	Dalli- Rajhara
8	District	Balod
9	Pin code	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	04-11-1962
15	Date of Execution	30-04-1963
16	Date of opening of Mine	05-11-1962
17	Date of First Renewal, if applicable and its period & expiry	First Renewal: 1988 (Period 01.06.88 to 31.05.98)
18	Date of Second Renewal, if applicable and its period & expiry	Second Renewal: 1998 (Period 01.06.98 to 31.05.2003) Third Renewal: 01-06-2003 Period : 20years Expiry : 31-05-2023
19	Date of submission of renewal application if Mining Operations are continuing under deemed extension	No. Durg/Iron/Mining-8/Nag/5-Raipur/255 dated 03-08- 2016 Validity- 31-03-2018
20	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Shri Raman, Director (Technical), Ispat Bhawan, Lodhi Road, New Delhi Phone 011- 24367105 and 24363358 Email: - raman.sail@sailex.com Date of apponitment : 28/02/2018
21	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Shri Samir Swarup, DGM Cum Agent, Dalli Mechanised Mine & Dalli Iron Ore Mine (Manual) Dalli -Rajhara,PO - Kondekasa, Balod CG-491228, Mobile No.9407983585,

		<p>email: sswaroop@sailbhilaisteel.com  Date of Appointment: 01/08/2013  Shri N.K. Mandal,  DGM (Jharandalli, Mahamaya, Dulki),  Mines Office,IOC Rajhara.  Email: nkmandal@sail-bhilaisteel.com  Phone : 9407983588  Date of Appointment: 18/08/2015</p>
22	Name of the Mine Manager with Address, phone, email, fax number and date of appointment in mines	<p>Shri Srikant Chintala  Dalli Mechanised Mine, Dalli Rajhara,  Po- Kondekasa, Balod CG-491228,  Mobile No.-9407982915,  Email: schintala@sail-bhilaisteel.com  Date of appointment: 20/07/2012</p> <p>Shri Rakesh Singh (Jharandalli Mech.Mine)  Add-Room no-49, Administrative Building, IOC,  Rajhara Post- Dalli Rajhara, Dist- Balod, Pin-  491228(C.G)  Ph- 9407982855  Email- rakeshsingh@sail-bhilaisteel.com  Date of appointment- 09/09/2017</p>
23	Name of the Mining Engineer, Qualification and total experience with address, phone, email, fax number and date of appointment in the mine	<p>Shri Satyendra Kumar, Dalli Mech.Mine,AMIE  (Mining) 1st Class Mines Manager, 20yrs experience.  Address: Room No 49,Adminstrative Building,IOC,  Rajhara, Post : Dalli- Rajhara,Dist- Balod,491228 (CG)  Email:satyendrakumar@sail-bhilaisteel.com,  Date of Appointment: 01/08/2013, ph.9407982903</p> <p>Shri Vagish Tiwari (Jharandalli Mech Mine)  Mining Engineer, 10 years experience  Address: Room No 49,Adminstrative Building,IOC,  Rajhara, Post : Dalli- Rajhara,Dist- Balod,491228 (CG)  Email:vagishtiwari@sail-bhilaisteel.com,  Date of Appointment: 26/11/2012, ph.9407983629</p>
24	Whether Geologist and Mining Engineer appointment in mines satisfy the rule 42 & carrying out their duties as per rule 43 & 44.	<p>Geologist is appointed,  Geologist : Shri Shamshad Raza  M.Tech. (Applied Geology)</p>
25	Date of Approval of Mine Plan/Modified Mine Plan with five-year period and specific condition in approval letter, if any.	<p>Mining Plan : 15/12/2005  Modified Mining Plan : 23/01/2007</p>
26	Date of Approval of Scheme of Mining/Modified Scheme of Mining with five- year period and specific condition in approval letter, if any.	<p>Review of Mining Plan -03/08/2016  (2013-14 to 2017-18), No. Durg/Iron/Mining-8/Nag/5-  Raipur/255 dated 03-08-2016</p>
27	Mineral(s) granted in lease and approved for Mining	<p>Iron Ore ( Hematite)</p>

28	Method of Mining (Opencast, Underground)	Opencast
29	Category (Fully Mechanised, Others or Manual)	Fully Mechanised
30	Captive/Non-Captive	Captive mine
31	Environmental Clearance	14.00 Million tonnes

### Exploration

S.N.	Item	Proposals (2017-18)	Actual Work (2017-18)	Remarks
1a	Backlog of previous year	Nil	Nil	50 number of Borehole proposed in 2018-19 & 2019-20. To convert entire lease area in G1 Category.
1b	Exploration over lease area for Geological axis 1 or 2.	Proposal not given	Nil	
1c	Exploration Agency & Expenditure in Lakh Rupees during the year	Nil	M/S Mineral Exploration Corporation Limited, Nagpur.	
1d	Balance area to be explored to bring Geological axis in 1 or 2.	Nil	Nil	
1e	Balance reserves as on 01.04.18	DMM-22.48 MT, JMM-11.81 MT Total – 34.29 MT (G1 Category)		
1f	General remarks of Inspecting officer on geology, exploration etc.	Iron Ore deposit of Dalli Rajhara range are associated with BIF (Banded Iron Formations) of Chilpi formation belonging to the Iron ore series of Dharwarian system of Pre-cambrian or Archean age. Lithology comprises dominantly para metamorphic rocks namely BHQ, Phyllite, Mica Schist iron ore and Chlorite schist. Grade of Iron from 62 to 68% Fe. Trend of the formations of the Ore body is E-W with northerly dip of about 40° to 45°. Two set of faults inferred, one pushing iron ore 450 meters up towards east and another one pushing iron ore 50 meters up towards west. The lower most formations exposed are Phyllites and Schists with quartz veins and the basement is not clearly discernable.		

### Development

S. N.	Item	Proposals (2017-18)	Actual Work (2017-18)	Remarks
2a	Location of Development w.r.t. lease area	Between 610 to 470 Bench level (DMM) Between 530 to 445 Bench level (JMM)	Same as proposal	DMM- Dalli Mech. Mine  JM: Jharandali Mech. Mine
2b	Separate benches in topsoil overburden and mineral (Rule 15)	Yes	Yes	
2c	Stripping ratio or ore to OB ratio	DMM-1: 1.07 JMM- 1: 0.40	DMM-1: 0.31 JMM- 1: 0.77	

2d	Quantity of topsoil generation in m <sup>3</sup>	NIL	NIL	
2e	Quantity of overburden generation in m <sup>3</sup>	4000000 Ton (DMM), 800000 Ton (JMM), Total-4800000 Tonne	DMM – 965330 Tonne, JMM- 1540398 Tonne, Total- 2505728 Ton	
2f	General remarks of Inspecting officer on development of pit w.r.t type of deposit etc.	Development is in order.		

### Exploitation

S.N	Item	Proposals (2017-18)	Actual Work (2017-18)	Remarks
3a	Number of pits proposed for production	1 (DMM) 1 (JMM) Total - 2	1 (DMM) 1 (JMM) Total - 2	
3b	Quantity of ROM mineral production proposed (2017-18)	DMM- 3750000 T JMM- 2000000 T	DMM- 3109960 T JMM- 1999984 T	
3c	Recovery of Salable/usable mineral from ROM production	3075000 T 1820000 T (18 -20% Loss after Washing)	DMM-2684714.15 t, JMM- 1897964.50 t	
3d	Quantity of mineral reject generation	DMM -675000 T JMM- Nil	DMM- 446985.81T JMM- Nil	
3e	Grade of mineral reject generation and threshold value declared	< 45% Fe	< 45% Fe	
3f	Quantity of sub-grade mineral generation	DMM-262000 T JMM-84000 T TOTAL-346000T	Sub grade blended and utilised.	
3g	Grade of sub-grade mineral generation	Proposed (Fe 45 - 55%)	Fe - 49.88%	
3h	Manual/Mechanized method adopted for segregation from ROM	Mechanised	Mechanised	
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	Being carried out on regular basis	Being carried out on regular basis	
3j	Provision of drilling & blasting in mineral benches	Blast hole drilling using idm-30 and ICM-260 drill machines.	Blast hole drilling using idm-30 and ICM-260 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	129.30ha	129.30ha	
3n	Ore to OB ratio for the pit/mine during the year	DMM-1: 1.07	DMM- 1: 0.31	

		JMM- 1:0.40	JMM - 1: 0.77	
3o	Total area put in use under different heads at the end of year	439.90 Ha.	439.90 Ha.	
3p	Production of ROM in Tonnes mineral during last five-years period, as Applicable	2013-14	5214000	5045641
		2014-15	4715000	4676009
		2015-16	4603000	4458174.5
		2016-17	5750000	4532933.8
		2017-18	5750000	5109944.00
3q	General remarks of inspecting officer on method of mining etc	Method of mining is Open cast mechanized mining with shovel dumper combination.		

### **Solid Waste Management-Dumping**

S.N.	Item	Proposals (2017-18)	Actual Work (2017-18)	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 32,33)	Nil	Nil	
4b	Location of topsoil, OB & mineral reject dumps	DMM-OB/Back filling (01) East- 503357 North- 2274312 OB (02) East-505568 North- 2273964 JM-OB (03)- East- 505528 North-2274242 (OB)-4 East 506080 North: 2274348	DMM-OB/Back filling (01) East- 503357 North- 2274312 OB (02) East-505568 North- 2273964 JM-OB (03)- East- 505528 North-2274242 (OB)-4 East 506080 North: 2274348	DMM- Dalli Mech. Mine  JM: Jharandali Mech. Mine
4c	Number of Dumps within lease area and outside lease area	With Lease-04 Nos Outside- Nil	With Lease-04 Nos Outside- Nil	
4d	Location of Dumps w.r.t. ultimate pit limit (Rule 16)	Outside UPL	Outside UPL	
4e	Number of Active & Alive dumps	03	03	
4f	Number of deed dumps	JM -02 DMM- Nil	JM -02 DMM- Nil	
4g	Number of dumps established	JM -02 DMM- Nil	JM -02 DMM- Nil	
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	Retaining wall- 200mts	Retaining wall- 200mts	

		Garland drain-1500mts	Garland drain-1500mts	
4j	Number of settling ponds	Not Proposed	15 nos	
4k	Specific commends of inspecting officer on waste dump management	Mine is in operation since 1962. There is no top soil encountered. Waste is being dump at designated place as per approved documents.		

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

S.N.	Item	Proposals (2017-18)	Actual Work (2017-18)	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Terracing of active dump at 500mRL between 7200-7300N and 5000-5500E to accommodate 3.0 million cu.m of broken rock which will also help in reclaiming upper terrace at 540mRL and stabilisation of present dump.	Being done	
5b	Area under backfilling of mined out area	7.6ha	7.6ha	
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 32)	Not Proposed	will be used after complete stabilization of dump.	No area matured for Reclamation
5d	Total area fully reclaimed & rehabilitated	Nil	NA	
5e	General remarks of inspecting officer on backfilling, reclamation etc	No area is so far matured for Reclamation. 7.6 ha area is backfilling of mined out area.		

### **Progressive Mine Closer Plan**

S. N.	Item	Proposals (2017-18)	Actual Work (2017-18)	Remarks
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	Yes	
6b	Management of worked/mined out benches			

	Area available for rehabilitation (Ha)			
	Afforestation done (ha)	Not Proposed	Nil	
	No.of saplings planted during the year			
	Cumulative no. of plants			
	Any other specific method of rehabilitation			
	Cost incurred on watch & care during the year			
6c	Compliance on reclamation and rehabilitation by backfilling  i) Voids available for backfilling (L*B*D) ii) Void filled by waste/tailings iii) Afforestation on the backfilling iv) Rehabilitation by making water reservoir v) Any other specific means	330X175X42 backfill -ii (RE-2)  2.5MT Nil Nil  Nil	Nil  2.5MT Nil Nil  Nil	
6d	Compliance of Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitation iii) Method of rehabilitation	Nil	Nil	
6e	Compliance of Environment monitoring (core zone & buffer zone)	Proposed	Being done	
6f	General remarks of inspecting officer on PMCP compliance & progressive closer operations	PMCP proposal are implemented		

### Mineral Conservation

S.N.	Item	Proposals (2017-18)	Actual Work (2017-18)	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 sort out at mine	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	Wet Screening is being done to separate clayey-soil & silica in iron ore.		

### Environment

S.N.	Item	Proposals (2017-18)	Actual Work (2017-18)	Remarks
8a	Separate removal and utilization of topsoil (Rule32)	Not applicable	Present Topsoil is not encountered, already in developed stage.	Mine is in operation since 1962. There is no top soil encountered.
8b	Concurrent use or storage of topsoil	Nil	Nil	
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	Being Proposed	In -Pit dumping of waste rock for reclamation and rehabilitation of mined out area.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Proposed	will be commenced shortly	
8f	Baseline information on existence of plantation & additional plantation done (Rule 41)		DMM within ML = 86.5ha. Outside ML= 115ha. Total= 201.5ha JM: Within ML=47.75ha. Outside ML =1.0ha Total=48.75ha	
8g	Survival rate		90%	
8h	Water sprinkling on roads to control airborne dust	Proposed	Being done	
8i	General remarks of inspecting officer on aesthetic beauty in and around mine area	EMP parameters are regularly being monitored. Well developed thick plantation within and outside the lease area. Due to plantation around the mining area aesthetic beauty increased.		

### Compliance of Rule 45

S. N.	Item	Comments	Remarks
9a	Status of submission of monthly and Annual returns	M.R. Submitted upto-May -2018	
		A.R. submitted upto- 2017-18	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Yes	



9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area Under Pit: 148.240ha Reclaimed area: 09.00ha Use for waste disposal: 59.350ha Occupied by plant, building residential, welfare building and roads:61.230ha Other purpose (Mineral Storage): 3.960ha		Area for which surface rights are held :354.90 ha.
9d	Scrutiny of Annual return on afforestation	249 numbers of trees planted during the yr. within lease area. 90% Survival rate.		
9e	Scrutiny of Annual return on mineral reject generation (Grade & Quantity)	598507T, Fe 50.10%, SiO <sub>2</sub> - 17.89%, Al <sub>2</sub> O <sub>3</sub> : 7.07%		
9f	Scrutiny of Annual return on ROM stock and/or grade ore	Opening Stock: 83231.500T ROM: 5109944.300T Closing Stock: 11990.100T Fines and lumps : 60% to below 62% of Fe content.		
9g	Scrutiny of Annual return on sale value, Ex.Mine price & production costs	Rs. 951.15 per tonne ex-mine price for fines. Rs. 956.30 per tonne for Lumps.		
9i	Scrutiny of Annual return on Fixed assets	Value of Fixed Assets: Rs 562850134.00		
9k	Scrutiny of Annual return on mining Machineries	Type of Machinery	Nos. of Unit	Capacity
Scrutiny of Annual return on mining Machineries		Shovel (Hydraulic)	4	5.500CUM
		Shovel (Hydraulic)	3	2.300CUM
		Shovel (Hydraulic)	2	1.570CUM
		Shovel (Hydraulic)	1	1.200CUM
		Shovel (Mechanical)	2	4.600CUM
		Backhoe	3	5.000CUM
		Dumper	8	50.00 Tonne
		Dumper	3	60.00 Tonne
		Truck	41	18.00 Tonne
		Truck	16	10.00 Tonne
		Dozer	5	350.00HP
		Front End Loader	1	5.500 CUM
		Front End Loader	2	1.400CUM
		Blast Hole Drill (Elect)	1	165.00CUM
		Blast Hole Drill	3	165.00CUM
Blast Hole Drill	2	115.00MM		
Motor Grader	2	212.00HP		

	Motor Grader	1	145.00HP
	Water Tanker	2	28000Lt
	Water Tanker	5	10000Lt
	Explosive Van	1	10.00 Tonne
	Locomotive (Elect)	3	70.00Tonne
	Crusher	1	2100.00T/H
	Crusher	2	900.00T/H
	Crusher	1	750.00T/H
	Crane	1	5.00T
	Crane	2	12.00T

Details of Violations observed during current Mining Plan inspection: - No Serious Violation observed.

Last Inspection Details: Shri Rudra N. Mishra (Senior Mining Geologist) held on dated 07/09/2017.

Violations pointed out during last inspections have been complied.

Date: 2/07/2018

Name & Designation: Shri R. K Das (Sr. ACOM) &

Shri R. N Mishra (SMG)