INDIAN BUREAU OF MINES MINERALS DEVELOPMENT AND REGULATION DIVISION

MCDR INSPECTION REPORT

Mine code : 300RI08059

Bhubaneshwar regional office

Mine file No : ORI/IRON/KJR/MCDR-35/BBS

(i) Name of the Inspecting : K013) KEWAL KRISHAN Officer and ID No. (ii) Designation : Regional Mining Geologist (iii) Accompaning mine : S. Shekhar Agent, Manish kumar Mines Manager Official with Designation (iv) Date of Inspection : 23/06/2021 (v) Prev.inspection date : 08/02/2020 PART-I : GENERAL INFORMATION 1. (a) Mine Name : KHONDBOND (b) Registration NO. : 4376/300RI08059 : A Mechanised (C) Category (d) Type of Working : Opencast Postal address (e) : ORISSA State District : KEONJHAR : KHONDBOND Village Taluka : CHAMPUA Post office : BICHAKUNDI Pin Code : FAX No. : 0676772239 E-mail : md.office@tatasteel.com Phone : 06767 72239 (f) Police Station : Bamebari : 17/01/1983 (g) First opening date Weekly day of rest (h) : SUN Address for : VILL:KHANDBOND& GURDA 2 correspondance PO:BICHAKUNDI P.S.JODA, DIST: KEONJHAR, ORISSA, PIN: 758034 Lease Number 3. (a) : ORI0108 (b) Lease area **:** 978 (c) Period of lease : (d) Date of Expiry : 31/03/2030 Mineral worked 4. : MANGANESE ORE Associated IRON ORE Main

5. Name and Address of the Lessee :	TISCO Bombay House 24, Homy Mody Street Mumbai MUMBAI (SUBURBAN) MAHARASHTRA Phone: FAX :	
Owner :	T V NARENDRAN TATA STEEL LIMITED JAMSHEDPUR, POST-BISTUPUR SINGBHUM EAST, JHARKHAND SINGHBHUM (EAST) JHARKHAND Phone: 06572431818 FAX : 0657-2431818	
Agent :	SHIRISH SHEKHAR KHONDBOND IRON AND MN MINES KEONJHAR ODISHA KEONJHAR ORISSA Phone: 7209003547 FAX : 0676772239	
Mining Engineer		
Name :	Manish Kumar,Full Time	
Qualification :	B.E. Mining	
Appointment/ : Termination date	24/06/2018	
Geologist		
Name :	KANISHKA DATTA,Full Time	
Qualification :	MSC TECH (APPLIED GEOLOGY)	
Appointment/ :	01/07/2013	
Termination date		
Manager		
Name :	Manish Kumar	
Qualification :	B.E. Mining	
Appointment/ : Termination date	24/09/2018	
6. Date of approval of Mini Plan/Scheme of Mining	ng : Renewal under rule 22 MCR1960 Modif.of approved Mining Plan Modif.of approved Mining Plan FMCP under 23C(1) Mining Scheme rule 12 MCDR1988 Mining Scheme rule 12 MCDR1988 Modif.approved Mining Scheme Modif.approved Mining Scheme MP review under 17(1) MCR 2016 Modif.approved Mining Scheme	11/12/2001 11/06/2004 09/03/2009 09/03/2009 31/03/2009 19/06/2013 19/01/2016 24/08/2016 09/11/2017 12/03/2020

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
la	Backlog of previous year	During the year 2020-21, 205 nos of boreholes proposed	08 nos of borholes driiled as per proposal	The last Modification of Reveiw of mining plan approved on 12/3/2020 for the year 2020-21 to 2022-23 . Hence no backlog , how ever as per the present document approved , leessee has not carried out exploration as per the proposal , hence violation issued unde rule 11(1) of MCDR 2017.
1b	Exploration over lease area for geological axis 1 or 2	In the year 2020-21, it was proposed to drill 205 boreholes in 50x50 and 100x100	no boreholehave been drilled, 395 ha area has been already explored under potential mineral area under G1 & G2	Out of the total area ,Mineralised zone is 524.6 ha under G1,G2,G3 and G4 and Non-Mineralised area is 453.5ha
lc	Exploration Agencies and Expenditure in lakh rupees during the year	Tata Steel Limited	Tata Steel Limited	
1d	Balance area to be explored to bring Geological axis in 1 or 2	Out of 524 hectares of mineralised area, 236.6 ha. explored in G2, G3 & G4 level, which needs to be explored further to bring into Geological axis G1 level	Out of 524 hectares of mineralised area, 236.6 ha. explored in G2, G3 & G4 level, which needs to be explored further to bring into Geological axis G1 level	

1e Balance reserve as on 01/04/20 as per the modification as per the of mining plan approved modification of on 12.3.2020, mining plan the reserves /resouces approved on area as on 1/1/2020 are 12.3.2020, the reserves under Iron Ore Mn /resoouces area as 111 84.47 MT, on 1/1/2020 are 0.874 MT under Iron Ore 121 51.43 MT Mn 84.47 MT, 111 0 122 14.83 MT 0.009MT 0.874 MT 211 56.32 MT 121 51.43 MT 0 0 221 9.57 MT 122 14.83 MT 0 .692MT 222 14.89MT 0.102MT 0.009MT 333 0.64 MT 211 56.32 MT 0 0 221 9.57 MT 0 .692MT 222 14.89MT 0.102MT 333 0.64 MT 0

1f General remarks of inspecting officers on geology, exploration etc

The rock formations of the area belong to the Iron ore group of Upper Dharwar age. In south Singhbhum, Bonai & Keonjhar district Manganese oredeposits are associated with Shales, Laterite, Chert & Quartzite of the Iron Ore Group& are distributed within the Horse shoe shaped synclinorium, plunging towards NNE , over-folded towards SW. The shale formation occurs as a core of the synclinorium. along Jamda-Koira valley overlying the Banded Iron Formation.

Development :

Propasals

Actual work

Remarks

2a Location of Pit 1 (Iron Pit 1 (Iron Ore) N-Mining operation 13781 to14350 development Ore) N:has been partially w.r.t.lease area 13780-14350 suspended in N E:-10600-E-10604 to 10920 quarry/ N ore body 10920 (within pit2) Pit 2 (Iron Pit 2 (Iron Ore) vide file no Ore) N:quarry partially ORI/IRON/KJR/MCDR-12380-13185 35/BBS/2312 dared suspended 13/2/2020. Pit 3 (Iron Ore) N E:-9920-10920 10070 to 10540 Pit 3 (Iron E 9215 to 9523 Ore) N:-10070-10540 OZ-XII (Mn pit) E:-9215-9575 N:14008-14300 OZ-XII (Mn E:8911- 9365 pit) N:14008-14316 E:8856-9376 2b Separate benches seperate seperate benches in top benches in top soil, overbuden and in topsoil, overburden and soil, overbuden minerals minerals (Rule and minerals 15) 2c Stripping ratio For Iron Ore For Iron ore 5.79 Violation u/r 9.58 11(1) of MCDR 2017 or ore to OB Mn ratio 1:13.53 Mn 1:10.25 2d Quantity of no such as per proposal topsoil proposal generation in m3 For Iron For Iron 765960 2e Quantity of overburden 910000 Mn 301826 generation in m3 Mn 410000 2f General remarks The development of inspecting activites are officers on carried out in development of four nos of pits. pit w.r.t. type Seperate benches of deposit etc in oberbuden and in ore are maintained as per proposal.

Exploitation:

l.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Iron Part Pit Name Pit-1,Pit- 2,Pit-3 Manganese part Pit Name OZXII	Iron Part Pit Name Pit-1,Pit-2,Pit-3 Manganese part Pit Name OZXII	
3b	Quantity of ROM mineral production proposed	Iron:- 8.71 MTPA Manganese:- 100000(Tons)	Iron:- 4.437MTPA Manganese:- 55,768(Tons	issued violation under rule 11(1) of MCDR 2017
3с	Recovery of sailable/usable mineral from ROM production	100%	as per proposal almost	
3d	Quantity of mineral reject generation	Iron:- 1.04 MT Manganese:- 15000(tons)	Iron:0.62MT Manganese:- 8364.600 (Tons)	issued violation under rule 11(1) of MCDR 2017
3е	Grade of mineral rejects generation and threshold value declared.	Iron:- ?45% to <58% Manganese:- >10% to < 25%	Iron:- ?45% to <58% Manganese:- >10% to < 25%	
3f	Quantity of sub grade mineral generation.	Iron:- 1.04 MT Manganese:- 15000(tons)	Iron:0.62MT Manganese:- 8364.600 (Tons)	
3g	Grade of sub grade mineral generation	Iron:- ?45% to <58% Manganese:- >10% to < 25%	Iron:- ?45% to <58% Manganese:- >10% to < 25%	
3h	Manual / Mechanised method adopted for segregating from ROM	Iron:- Mechanized Manganese:- Manual	Iron:- Mechanized Manganese:- Manual	

Any analysis or Iron Ore beneficiation Presently no study proposed upgradation and carried out ROM is done

for sub grade mineral and rejects.

3i

Iron Ore -Presently no Presently no upgradation upgradation of of ROM is done and ROM is done feedable ore (Fe>58%) is and feedable fed to the ore (Fe>58%) present existing plant is fed to the and mobile crushing and present screening plant. existing plant Presently two and mobile mobile crushing and rushing and screening plant located screening at P ore body. In the plant. present scenario Presently two subgrade from the mines mobile is stacked in the subgrade stacks in the crushing and screening earmarked places. plant located However, it is proposed at P ore body. that after the In the present beneficiation plant is scenario commissioned from FY'21 subgrade from onwards subgrade ore (Fe- 45-58%) will be the mines is stacked in the beneficiated. subgrade stacks in the earmarked places. However, it is proposed that after the beneficiation plant is commissioned from FY'21 onwards subgrade ore (Fe- 45-58%) will be beneficiated.

Iron Ore -Presently no upgradation of ROM is done and feedable ore (Fe>58%) is fed to the present existing plant and mobile crushing and screening plant. Presently two mobile crushing and screening plant located at P ore body. In the present scenario subgrade from the mines is stacked in the subgrade stacks in the earmarked places. However, it is proposed that after the beneficiation plant is commissioned from FY'21 onwards subgrade ore (Fe- 45-58%) will be beneficiated.

3j	Provision of drilling and blasting in mineral benches	Drilling and blasting	drilling and blasting	<pre>Iron Dia:- 150 mm Depth:- 12 m Spacing:- 4 Burden:-3.2 Explosive used:- SME Manganese Dia:- 100 mm Depth:- 6.6 m Spacing:-3 Burden:-2.5 Explosive used: - slurry Explosive (cartridges)</pre>
3k	Provision of mining machineries in mineral benches	Dumper100MT 8 nos,Excavators 5.9 Cu M 02 nos,Water Tanker 1 no,Pay loader 9 Cu M 1 no,Drill 100mm,300 CFM 1 no, Drill 165mm, 1000CFM 1 no,Explosive Van 3.9 MT 1 no, Mobile Crane Mobile Crane 1 no etc	Dumper100MT 8 nos,Excavators 5.9 Cu M 02 nos,Water Tanker 1 no,Pay loader 9 Cu M 1 no,Drill 100mm,300 CFM 1 no, Drill 165mm, 1000CFM 1 no,Explosive Van 3.9 MT 1 no, Mobile Crane Mobile Crane 1 no etc	
31	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Ore pits height 10m &	maintained as per proposal	
3m	Total area covered under excavation/pits	An area of 268.946 ha has been proposed during the plan peroid.	An area of 218.605 has has been covered under pits	

3n	Ore to OB ratio for the pit/mine during the year.	<pre>Iron: 9.58(T/cum) Mn: 1:10.25(Cum: Cum)</pre>	Iron: 5.79(T/cum) Mn: 1:13.53(Cum: Cum)	issued violation under rule 11(1) of MCDR 2017
30	Total area put in use under different heads at the end of year		area under pits 218.605ha, dumps 56.232ha,plant7residenta il building 62.367ha, other purpose 37.516 ha	
3р	Production of ROM mineral during the last five year period as applicable	8.29 MT Fe 2017-18: 50000 Tons Mn 11.394 MT Fe 2018-19:	3.49MT Fe 2020-21:	
3q	General remarks of inspecting officers on method of mining etc.			The menthod of mining is A category and is fully mechanised .The ROM production is carried out by opencast mining methods in the pit 1, Pit 2 ,pit 3and in Mn pit as proposed in the document.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks

4a	Separate dumping	seperate	seperate dumping for
	of topsoil, OB	dumping for	oberbuden and mineral
	and mineral	oberbuden and	reject /subgrade
	rejects (Rule	mineral reject	envisaged
	32,33)	/subgrade	
		envisaged	

4b Location of Waste Dump no. C topsoil, OB and N 13905 to 14100 mineral reject Waste Dump no. E-10327 to 10477dumps С N:-13809 to Waste Dump-5A 14119 N-11235 to 11977 E:-10157 to E-9579 to 9956 10477 Waste Dump-5b Waste Dump-5A N:-12138 to 12532 E:-9720 to 9893 N:-11226 to 12009 E:-9579 to Mineral Reject-3 9956 N:12194 to 12493N E: 9190 to 9363 Waste Dump-5b N:-12138 to Mineral Reject1A & 2A 12532 N:-10880 to 10532 E:-9713 to E:-9147 to 9206 9893 Temporary Backfilling over OZ-X - 13840N to Mineral 14090N & 8744E to 9004E Reject-3 N:-12493 to12168 E:-9186 to 9363 Mineral Reject1A & 2A N:-10880 to 10532 E:-9147 to 9206 Temporary Backfilling over OZ-X - 13831N to 14090N & 8735E to 9006E 2. Dump No. 3 - 13605N to 14105N & 8418E to 9035E 3. Dump No. 4 - 14121N to 14411N & 9177E to 9446E

4c Number of dumps Waste Dump no. Waste Dump no. C all the dumps are within lease С N:-13809 to 14119 with in the lease area and outside N:-13809 to E:-10157 to 10477 area only. of lease area 14119 E:-10157 to Waste Dump-5A 10477 N:-11226 to 12009 E:-9579 to 9956 Waste Dump-5A N:-11226 to Waste Dump-5b 12009 N:-12138 to 12532 E:-9713 to 9893 E:-9579 to 9956 Mineral Reject-3 Waste Dump-5b N:-12493 to12168 N:-12138 to E:-9186 to 9363 12532 E:-9713 to 9893 Mineral Reject1A & 2A N:-10880 to 10532 E:-9147 to 9206 Mineral Reject-3 N:-12493 Temporary Backfilling to12168 over E:-9186 to OZ-X - 13831N to 14090N & 8735E to 9006E 9363 Dump No. 3 - 13605N to Mineral 14105N & 8418E to 9035E Reject1A & 2A Dump No. 4 - 14121N to N:-10880 to 10532 14411N & 9177E to 9446E E:-9147 to 9206 Temporary Backfilling over OZ-X - 13831N to 14090N & 8735E to 9006E 2. Dump No. 3 - 13605N to 14105N & 8418E to 9035E 3. Dump No. 4 - 14121N to 14411N & 9177E to 9446E

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	outside the UPL	outside the UPL	
4e	Number of active and alive dumps.	9 nos	6 nos	dump no 3,dump no 4 and dump MR-1 could not br created because of forest issue.
4f	Number of dead dumps.	no such proposal	no such proposal	
4g	Number of dumps established.	no such proposal during the year	no such proposal during the year	
4h	Whether Retaining wall or garland drain all along dumps are there.	garland drain and retaining wall proposed around the dumps and converor 2079m.	1150m constructed against the proposals.	Issued violation under rule 11(1) of MCDR 2017
4i	Length of Retaining wall or garland drain all along dumps	1679m around the dumps 400 m along the conveyor corridor	750m around the dumps 400m along the conveyor corridor	
4j	Number of settling ponds	01 no of settling pond	01 no of settling pond	
4k	Specific comments of inspecting officer on waste dump management			The subgrade dumps and overbuden have been dumped systematically. On the slopes of the dumps plantation have been carried out. around the dumps retaining wall have been also constructed.

Solid Waste Management - Backfilling:

Sl.No. Item Propasals Actual work Remarks	rk Remarks
---	------------

5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	after exhaustion of mineable ore from northern side of Mn.Pit 1 it will be subsequently backfilled	not done due to non- exhaustion of mineral.	
5b	Area under backfilling of mined out area	1.61 ha area proposed for backfilling	Backfilling not done	issued violation under rule 11(1) of MCDR 2017
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	no such proposal	no such proposal	
5d	Total area fully reclaimed and rehabilitated	no such proposal	no such proposal	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			The lessee has proposed the reclaimation of mined out area of 1.61 ha by backfilling during the year ,but the same has not been done. Violation letter issued regarding the non- compliance of proposal.

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
ба	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	sumbitted before Ist july	submitted	submitted on 26/6/2021
6b	Area available for rehabilitation (ha) .	no such proposal	no such proposal	

6c	afforestation done (ha).	5.2 ha	5.4 ha	
6d	No. of saplings planted during the year	13500nos	13522 nos	species like karanja, amalatas, kachnnar, ficus etc.
бе	Cumulative no .of plants	353428 nos	366194 nos	
6f	Any other method of rehabilitation	no such proposal	no such proposal	
бg	Cost incurred on watch and care during the year	37.80lakhs	45.29 lakhs	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	after exhaustion of mineable ore from northern side of Mn.Pit 1 it will be subsequently backfilled.	not carried out	mineral not exhausted because of less development.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	1.16 ha area proposed during the year 2020-21,	not carried out as per the proposal .	issued violation under rule 11(1) of MCDR 2017.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area	no such proposal	no such proposal	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	no such proposal	no such proposal	

61	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	no such proposal	no such proposal	
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	no such proposal	no such proposal	
бn	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	no such proposal	no such proposal	
60	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	no such proposal	no such proposal	
бр	Compliance of environmental monitoring (core zone and buffer zone)	periodical monitoring of environmental parameters are proposed	carried out as per the proposal	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			The lessee has not carried out the compliance as proposed on reclamation and rehabalitation by backfilling of 1.16ha area. Hence violation issued under rule 11(1) of MCDR 2017.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks	
7a	ROM Mineral dispatch or grade-wise sorting within lease area	grade-wise sorting	grade wise sorting is being practiced		

76	Mathad of and	Machanizad for	Maghanigod for There are	
7b	Method of grade- wise mineral sorting i.e. manual or mechanical.	Mechanised for Iron ore and mannual for Mn ore	Mechanised for Iron ore and mannual for Mn ore	
7c	Different grade of mineral sorted out at mines.	Iron ore having grade 45 to 58% and > 58% Fe Manganese having 10 to 25% Mn and >25% Mn	Manganese having 10 to 25% Mn , 25% to 35% ,	
7d	Any beneficiation process at mines	-	carried out . The proposed benificiation plants have not been	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			At present only grade wise sorting is being carried out . The company has propsed 8MTPA wet beneficiation plant from 2020-21 and further 2MTPA wet beneficiation plant from 2022- 2023. But both are yet to be commenced.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)		no such proposal	
d8	Concurrent use or storage of topsoil	no such proposal	no such proposal	

8c Separate dumps provision for provision for seperate for overburden, seperate duming of waste rock, duming of overbuden,waste rejects and overbuden, wast rock, subgrade/reject is fines (Rule 33) envisaged е rock, subgrade/ reject is envisaged 8d Use of no such no such proposal overburden, proposal waste rock, rejects and fines dumps for restoring the land to its original use 8e Phased plantation carriedout as proposed. proposed at restoration, reclamation and waste dumps rehabilitation of lands affected by mining operations (Pits, dumps etc) 8f Baseline 13500 nos of 13682 nos of sapling information on sapling were are planted during the existence of proposed year 2020-2021 plantation and during the additional year 2020-21 plantation done (Rule 41) 8q Survival rate 81% 81% 8h Water sprinkling Mobile water Mobile water sprinkler & Water mist canon on roads to sprinkler & Fixed type water is being used for control airborne Fixed type sprinkler dust suppression dust water sprinkler 8i General remarks Aesthetic beauty of inspecting in and around the officer on mine is good aesthetic beauty because of in and around plantation mines area carriedout and by regular sprinkling of water on mine road to control the dust.

Compliance	of	Rule	45:
------------	----	------	-----

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	as per MCDR 2017, the monthly return are to be submitted before 10th day of every month in respect of the proceding month and AR shall be submitted before the 1st day of July each year for the proceding finincial year.	submitted	In the monthly return submitted for the month of june 2021 ,the ex mine price in case of Mn ore is not furnished correctly. issued violation under rule 45(7) of MCDR 2017.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	The annual return for the year 2020-21 was not due for submission as on date of inspection, which has to be submitted on or before Ist july of 2021.	The secrutiny of annual return for the year 2020-21 during the inspection doesnot arise.	nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	year 2020-21 was not due for submission	The secrutiny of annual return for the year 2020-21 during the inspection doesnot arise.	nil

9d Scrutiny of The annual The secrutiny of annual Annual return on return for the return for the year afforestation year 2020-21 2020-21 during the was not due inspection doesnot for submission arise. as on date of inspection, which has to be submitted on or before Ist july of 2021. 9e Scrutiny of The annual The secrutiny of annual nil Annual return on return for the return for the year mineral reject year 2020-21 2020-21 during the generation was not due inspection doesnot (Grade and for submission arise. quantity) as on date of inspection, which has to be submitted on or before Ist july of 2021. 9f Scrutiny of The annual The secrutiny of annual nil Annual return on return for the return for the year ROM stock and/or year 2020-21 2020-21 during the graded ore inspection doesnot was not due for submission arise. as on date of inspection, which has to be submitted on or before Ist july of 2021. 9g Scrutiny of The annual The secrutiny of annual nil Annual return on return for the return for the year year 2020-21 2020-21 during the sale value, Ex. Mine price and was not due inspection doesnot production cost for submission arise. as on date of inspection, which has to be submitted on or before Ist july of 2021.

9h	Scrutiny of Annual return on fixed assets	··· ·	nil
9k	Scrutiny of Annual return on mining machineries	The secrutiny of annual return for the year 2020-21 during the inspection doesnot arise.	nil

Details of violations observed during current inspection and compliance position of violation pointed out				
Violation	n observed	Show couse position		
Rule NO.	Issued on Compliance o	n Rule NO.	Issued on Compliance on	
MCDR17 Rule 11(1)	20/07/2021			

Date :

(KEWAL KRISHAN)

Indian Bureau of Mines