

MCDR INSPECTION FORMAT

General Information

Inspection Date- 07.11.2024

SL. No.	Particulars	Details		
1	Name of the Mine	Nuagaon Iron Ore Mines		
i	Date of Inspection	07.11.2024		
ii	Name of Inspection officer:	Shri Rajesh Kumar Das, Deputy controller of Mines		
iii	Name of official accompanying inspection	Shri Ram Shankar Sharma (Agent) & Shri Padmaraja Tumati, QP.		
2	Total Lease Area (Ha) with breakup of Non-forest and forest land	Lease area 776.969 Ha (as per DGPS) 767.284 Ha (as per ROR)	Forest area 641.044 Ha	Non- Forest area 135.925 Ha
3	Mine code	30ORI08118		
4	IBM Registration Number under rule 45 of MCDR, 2017	IBM/432/2011		
5	Name of the lessee, Address, phone, email and fax number	Name of the Lessee Address Phone No Email Fax No	M/S. JSW Steel Limited JSW Centre Bandra Kurla Complex, Bandra (East) District- Mumbai Suburban State- Maharashtra` +91-9829529612 gajraj.rathore@jsw.in 02242863000	
6	Village	Nuagaon, Barapada, Guali, Kolarhudukela, Katesai, Topadihi, Kendudihi, Pandulipasi, Gandhalpada		
7	Taluka/Mandal	Rugudi		
8	District	Keonjhar		
9	Pin-code	758035		
10	State	Odisha		
11	Post office	Barbil Post Office		
12	Nearest police station	Rugudi Police Station		
13	Nearest Railway station	Barbil Railway Station		
14	Date of Grant of Mining Lease	27.06.2020		
15	Date of Execution	27.06.2020		
16	Date of opening of Mine	27.06.2020		
17	Date of expiry	26.06.2070		
18	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Mr. Gajraj Singh Rathore. M/s JSW Steel Ltd JSW Centre, Bandra Kurla Complex, Bandra (East), Mumbai-400051 Phone-9448286017 Email: gajraj.rathore@jsw.in Fax: 02242863000 DOA-19.05.2023		
19	Name of the Mine Agent with	Mr. Ram Shanker Sharma		

	Address, phone, email, fax number and date of appointment	JSW Steel Ltd Plot No – 15, Bhusgaon, At- Bhadrasi, PS- Barbil District- Keonjhar-758035 Phone-+91-9829529612 Email: ram.sharma@jsw.in Fax: 02242861000 DOA-03.01.2024
20	Name of the Mines Manager with Address, mobile no, email, fax number and date of appointment in mine	Mr. Arundeeep Bhattacharjee Qualification- BE in Mining Engineering with 1st Class Mines Managers Certificate. JSW steel Limited Nuagaon Iron Ore Mines, At: Nuagaon, P.S: Rugudi District- Keonjhar-758035 Phone: +91-9938908820 Email: arundeeep.bhattacharjee@jsw.in Fax: 02242861000 DOA-25.11.2022
21	Name of the Mining Engineer , Qualification and total experience with Address, mobile no, email, fax/phone number and date of appointment in mine	Mr. Borra Vidyasagar Qualification- Qualification- B. Tech in Mining Engineering with M. Tech in Environment JSW steel Limited Plot No – 15, Bhusgaon, At- Bhadrasi, PS- Barbil District- Keonjhar-758035 Phone: +91-8143102170 Email: borra.vidyasagar@jsw.in Fax: 02242861000 DOA-15.07.2024
22	Name of the Geologist , Qualification and total experience with Address, mobile no, email, fax number and date of appointment in mine	Mr. Mritunjay Kumar Jha Qualification- M.Sc. Geology JSW steel Limited Nuagaon Iron Ore Mines, At: Nuagaon, P.S: Rugudi District- Keonjhar-758035 Phone: +91-8456831630 Email: mritunjay.jha@jsw.in Fax: 02242861000 DOA-18.03.2023
23	Whether Geologist and Mining Engineer appointed in mines satisfy the rule 55& carrying out their duties as per rule 56 & 57.	Yes
24	Date of Approval of Mining Plan/Review of Mining Plan/ their modifications with five-year period and specific condition in approval letter, if any.	Mining Plan - MP/A/18-ORI/BHU/2020-21, dated 12.10.2020 for the period - 2020-21 to 2024-25 Modified Mining Plan - MPM/A/03-ORI/BHU/2021-22/251, dated 31.05.2021 for the period - 2021-22 to 2024-25
25	Mineral (s) granted in lease and proved for mining	Hematite (Iron ore)
26	Method of Mining (Opencast, Underground)	Opencast
27	Category (Fully Mechanized,	A (Fully Mechanized)

	Others or Manual)	
28	Captive/Non-Captive	Non-Captive

S.N	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year (2020-21, 2021-22 & 2022-23)	Year 2020-21 Nil	Year 2020-21 Nil	--
		Year 2021-22 105	Year 2021-22 6	The Backlog proposal couldn't be undertaken due to unavailability of drilling contractors due to the Covid pandemic
		Year 2022-	Year 2022-23 16	In-house drilling commenced in Sept-2023.
1b	Exploration Proposal (2023-24)	Year 2023-24	Year 2023-24 39	Backlog proposal couldn't be drilled due to unavailability of Forest clearance.
1c	Exploration Agency & Expenditure in lakh Rupees during the year	Nil	JSW Steel Limited ₹212.50 Lakhs(FY2023-24)	Expenditure: Total- 469 Lakhs.
1d	Balance area to be explored to bring Geological axis in 1 or 2	-	29.8190 Ha (G ₂ to G ₁)	--
1e	Balance reserves as on 01.04.2024	NA	Iron Ore	
			121	5874338 20
			122	2372909 9
			Reserves	6111629 19
			221	1414797 38
			222	1457645

1f	General remarks of inspecting officer on geology, exploration etc.	Nuagaon Iron Ore Mine lies over the lower Shale Formation of the Koira Group as described by Murthy & Acharya (1975). Litho units like Iron ores of HLO, SLO, lateralized HLO types, FeShale, laterites of both aluminous and ferruginous nature, float ores concealed under soil and alluvial cover at places are mapped in the Nuagaon Iron Ore Mine. The lease area is characterized by hilly as well as flat ground having elevation from 520m to 690m above M.S.L. The hills and hill ranges located within the lease area are Udalbari, Guali, Topadihi, Dumkahudi, Barpada, Kanhusahi & Bichhagarh-Katasahi. The M.L. area discerns a fairly wide range of rock types of the iron ore group. The area has a geomorphic trend of North-North-East to South-South-West which is almost conformable with the strike trend of the rock types. The different rock types observed in field from the exposures and mine working areas are as follows: Soil & alluvium, Laterite, Lateritic Iron ore, Upper Shale Formation,
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Exploration

Development: --

S. N.	Item	Proposals (2023-24)			Actual work		Remarks
2a	Location of development w.r.t. lease area	Pit	Northing	Easting	Broadly within proposed area.		
		Barapada	2429700-2430500	324300 - 324900			
		Sonukocha	2431700-2432300	324600 - 325000			
		Gangeigoda	2431400-2431700	324200 - 324500			
		MDH	2430700-2431000	323200 -			
2b	Separate benches in topsoil, overburden and mineral (Beds)	Top Soil – Nil 323600 Separate benches in overburden & mineral proposed			Top Soil – Nil Separate benches in overburden & mineral maintained.		
2c	Stripping ratio or ore to OB ratio	Iron Ore	1:0.25		Iron Ore	1:0.21	
2d	Quantity of topsoil generation in m³	Nil			Nil		
2e	Quantity of overburden generation in m³						
		Iron Ore	1833187		Iron Ore	433476	

2f	General remarks of inspecting officer on development of	The OB generation for 2023-24 proposed 1833187 m3 but only 433476 OB generations reported. The development was very less w.r.t. proposal.
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Exploitation: --

S.N .	Item	Proposals (2023-24)		Actual work		Remarks
3a	Number of pits proposed for production	5 Nos of pits (Barapada, Kanhusahi, Sonukocha, Gangeigoda & MDH Quarry)		The production was proposed in 5 pit but actually not done as per proposal. The kanusahi pit not developed and MDH quarry work beyond proposal in eastern direction and accordingly violation		
3b	Quantity of ROM mineral production proposed (Tonnes)	Iron	14998261	Iron	4232323	The proposed production of ~ 15 million tonnes have been considered based on the enhanced EC qty. of 20 million tons which is still under process
3c	Recovery of saleable/usable mineral from ROM production	Iron	14592617	Iron	3964333	
3d	Quantity of mineral reject generation	Iron	405644	Iron	267990	
3e	Grade of mineral reject generation and threshold value declared	MR:45-55% Threshold value-45%		MR: 53.05% Fe Threshold value- 45% Fe		
3f	Quantity of sub-grade mineral generation	Iron	405644	Iron	267990	
3g	Grade of sub-grade mineral generation	45-55% Fe		53.05% Fe		
3h	Manual / Mechanized method adopted for segregating	Mechanized		Mechanized		
3i	Any analysis or beneficiation study	Nil		Nil		

3j	Provision of drilling & blasting in mineral benches	Drilling and blasting in mineral benches is proposed. Burden, spacing and diameter of hole is proposed at 3m, 4m and 150mm respectively			Drilling and blasting in mineral benches are achieved with burden, spacing and diameter of hole is proposed at 3m, 4m and 150mm respectively.		
3k	Provision of mining machineries in mineral benches	Deployment of mining machineries is proposed in mineral benches by Shovel Dumper Combination ROM will be excavated and loaded in the 35T /100T dumper by 2.5 m3 to 9 m3 excavators.			Deployment of mining machineries is proposed in mineral benches by Shovel Dumper Combination ROM is excavated and loaded in the 35T /100T dumper by 2.5 m3 to 9 m3 excavators.		
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height of 10m is proposed in overburden & mineral.			Bench height of 10m is maintained in overburden & mineral.		
3m	Total area covered under excavation/pits	153.901 Ha (At the end of the plan period)			145.437 Ha		
3n	Ore to OB ratio for the pit/mine during the year(T/t)	Iron			Iron		
		1:0.25			1: 0.21		
		1:0.33					
3o	Total area put in use under different heads at the end of year						

3p	Production of ROM mineral during the last five-year period as applicable. (Tonnes)	2020-21	7999999	2020-21	4214757
		2021-22	7990268	2021-22	6264155
		2022-23	11991218	2022-23	7116857
		2023-24	14998261	2023-24	4232323
3q	General remarks of inspecting Officer on method of	The method of mining is by opencast method by using HEMM and deep hole drilling and blasting. The mining activity by fully mechanized method with shovel and dumper combination. The production proposed for 2023-24 was given 14.998 million tons Iron ore and against which only 4.232323 million tons of Iron ore production reported which was only 28% of the proposal.			

Solid Waste Management-Dumping: --

Solid Waste Management Dumping													
S. N	Item	Proposals (2023-24)				Actual work				Remarks			
4a	Separate dumping of topsoil, OB & mineral reject (Rule 32, 33)	Top soil	Nil			Top soil	Nil						
		OB	Katasahi Dump, Topadi Block			OB	Katasahi Dump						
		Mineral Reject	Kanusahi, MDH			Mineral Reject	Kanusahi, MDH						
4b	Location of topsoil, OB & mineral reject dumps	Tops oil	Nil										
		OB	Mineral	Northing	Easting	OB	Mineral	Northing	Easting				
			Katasahi	2429 291 - 2429 595	325 924 - 326 319						Iron Katasahi	242 932 5-242 952 8	326 004 - 326 250
			Topadi	2431 400-2431 600	324 400 - 324 800								
4c	Number of dumps within lease area and outside lease area	Inside Lease	02			Inside Lease	01						
		Outside Lease	0			Outside Lease	0						
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Iron - Dumping is proposed within the ultimate pit limit				Iron - Dumping is carried out within the ultimate pit limit							
4e	Number of active & alive dumps	1 No	Katasahi OB Dump			1 No	Katasahi OB Dump						

4f	Number of dead dumps	4 Dumps (Ex-Lessee) 1- Katasahi 3-Udalbadi		4 Dumps (Ex-Lessee) 1- Katasahi 3-Udalbadi		
4g	Number of dumps stabilized	Nil		Nil		
4h	Whether Retaining wall or garland drain all along dumps are there	Proposed in the Approved Mining Plan		Proposals carried out as per Approved Mining Plan.		
4i	Length of Retaining wall or garland drain all along dump	Retaining wall(m)	Garland drain(m)			
		-	967	Retaining wall(m)	Garland drain(m)	
				600	4200	
4j	Number of settling ponds	Nil		Nil		
4k	Specific comments of inspecting Officer on waste Dump management	The dumping also not done as per proposal and in katasahi dump coir matting proposal given not done and accordingly violation pointed out.				

Solid Waste Management-Backfilling: -

S.N.	Item	Proposals (2023-24)	Actual work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Nil	Nil	
5b	Area under backfilling of	Nil	Nil	
5c	Concurrent use of topsoil for restoration or rehabilitation of	Nil	Nil	
5d	Total area fully reclaimed &	Nil	Nil	
5e	General remarks of inspecting Officer on backfilling and reclamation etc	Area not matured for backfilling.		

Progressive Mine Closure Plan: -

SL.N.	Item	Proposals (FY 2022-23)	Actual work	Remarks
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6a	Whether Annual report on PMCP submitted on time and correctly - Rule 26(2). (Hard copy same provided)	Yes	Yes	Annual Report on PMCP returns submitted along with Annual Returns on 29.06.2024
6b	Management of worked/mined out benches i) Area available for rehabilitation (ha) ii) Afforestation done (ha) iii) No. of saplings planted during the year iv) Cumulative no. of plants v) Any other specific method of rehabilitation vi) Cost incurred on watch & care during the year	i) Area available for rehabilitation (ha)- Nil ii) Afforestation done (ha) – 2.50 Ha iii) No of Saplings planted during the year – 6250 iv) Cumulative no of plants- 15000 v) Any other specific method of rehabilitation – Nil vi) Cost incurred on watch and care during the year- Nil	i) Area available for rehabilitation (ha)- Nil ii) Afforestation done (ha) – 4.8 Ha iii) No of Saplings planted during the year – 12000 iv) Cumulative no of plants- 22400 v) Any other specific method of rehabilitation – Nil vi) Cost incurred on watch and care during the year- ₹2293000	--
6c	Compliance on reclamation and rehabilitation by backfilling i) Voids available for backfilling (L X B X D) ii) Void filled by waste/tailings iii) Afforestation on the backfilled area iv) Rehabilitation by making water reservoir v) Any other specific means	i)Voids available for backfilling (LXBXD)- Nil ii) Voids filled by waste/tailings- Nil iii) Afforestation on the backfilled area - Nil iv) Rehabilitation by making water reservoir- Nil v)Any other specific means- Nil	i)Voids available for backfilling (LXBXD)- Nil ii) Voids filled by waste/tailings- Nil iii) Afforestation on the backfilled area- Nil iv) Rehabilitation by making water reservoir- Nil v)Any other specific means- Nil	
6d	Compliance of Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitated (ha) iii) Method of rehabilitation	Nil	Nil	

6e	Compliance of Environmental monitoring (core zone & buffer zone)	Environmental monitoring in Core zone and buffer zone will be as per MOEFCC and SPCB guidelines.	Environmental monitoring in Core zone and buffer zone is as per MOEFCC and SPCB guidelines.	
6f	General remarks of inspecting Officer on PMCP compliance & progressive closure operation etc	Broadly as per proposal.		

Mineral Conservation: --

S.N.	Item	Proposals (FY 2023-24)	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorting by screening and crushing within lease area.	Grade wise sorting by screening and crushing within lease area is being	
7b	Method of grade-wise mineral sorting i.e. manual	Mechanical	Mechanical	
7c	Different grade of mineral sorted out at mines	NA	Iron Ore of different size and grade is sorted out and dispatched to different plants. {(Grade range- 45-51%, 51-55%, 55-58%, 58-60%, 60-62% & 62-65%)}	--
7d	Any beneficiation process at mines	NA	NA	
7e	General remarks of inspecting officer on Mineral conservation & beneficiation	The blending of low grade with high grade done to get the desired grade. No wet beneficiation within lease.		

Environment: --

SL.No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
8a	Separate removal and utilization of topsoil	Nil	Nil	
8b	Concurrent use or storage of topsoil	Nil	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines	Yes	Yes	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Nil	Nil	

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Nil	Nil	
8f	Baseline information on existence of plantation & additional plantation done	Plantation-6250	Plantation-12000	
8g	Survival rate	Nil	95%	
8h	Water sprinkling on roads to control airborne dust	Regular sprinkling of water on Haul roads and transport roads using Water tanker to suppress the dust.	Regular sprinkling of water on Haul roads and transport roads using Water tanker to suppress the dust.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	During mine visit no adverse impact on aesthetic beauty within lease observed but the plantation not done as per proposal.		

Compliance of Rule 45

SL.No.	Item	COMMENTS		Remarks.
9a	Status of submission of Monthly and Annual returns	Monthly Return submitted up to 30.09.2024. Annual Returns submitted for FY 2023-24 before 30.06.2024.		--
S.N.	Item	Details GIVEN in A.R.	Actual in field	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mines Manager-01 Mining Engineer 9(including Mines Manager) Diploma Mining Engineer-17 Geologist-5 Surveyor-1	Mines Manager-01 Mining Engineer 9(including Mines Manager) Diploma Mining Engineer-17 Geologist-5 Surveyor-1	--
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	(1) Covered under current (O/ C) Workings- 145.437 Ha (2) Used for Waste Disposal- 23.195 Ha (3) Occupied by plant, buildings, residential, welfare, buildings and roads- 19.267 Ha (4) Other Purpose (Mineral Storage)- 132.439 Ha Total-320.338 Ha	(1) Covered under current (O/ C) Workings-145.437 Ha (2) Used for Waste Disposal- 23.195 Ha (3) Occupied by plant, buildings, residential, welfare, buildings and roads-19.267 Ha (4) Other Purpose (Mineral Storage) – 132.439 Ha Total- 320.338 Ha	--
9d	Scrutiny of Annual	Afforestation done- 12000 plants	Afforestation done- 12000 plants	--

	return on afforestation																																																							
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	<table><tr><td>Unprocessed Ore</td><td></td></tr><tr><td>Processed Ore</td><td>267990.3</td></tr></table>	Unprocessed Ore		Processed Ore	267990.3	<table><tr><td>Unprocessed Ore</td><td></td></tr><tr><td>Processed Ore</td><td>267990.3</td></tr></table>	Unprocessed Ore		Processed Ore	267990.3	--																																												
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9f	Scrutiny of Annual return on ROM stock and/or graded ore	<table><tr><td>ROM (Fe)</td><td>2037189.90</td></tr><tr><td>Fines (Fe)</td><td>863444</td></tr><tr><td>51%-55%</td><td>100928.720</td></tr><tr><td>55%-58%</td><td>981.680</td></tr><tr><td>58%-60%</td><td>26135.760</td></tr><tr><td>60%-62%</td><td>367785.261</td></tr><tr><td>62%-65%</td><td>364624.365</td></tr><tr><td>65% and above</td><td>2988.120</td></tr><tr><td>CLO (Fe)</td><td>1308883</td></tr><tr><td>Below 62% (clo any size)</td><td>929084.124</td></tr><tr><td>62%-65%(5-18mm)</td><td>69775.420</td></tr><tr><td>62%-65%(10-40mm)</td><td>280335.660</td></tr><tr><td>62% to below 65% (CLO others)</td><td>29687.360</td></tr></table>	ROM (Fe)	2037189.90	Fines (Fe)	863444	51%-55%	100928.720	55%-58%	981.680	58%-60%	26135.760	60%-62%	367785.261	62%-65%	364624.365	65% and above	2988.120	CLO (Fe)	1308883	Below 62% (clo any size)	929084.124	62%-65%(5-18mm)	69775.420	62%-65%(10-40mm)	280335.660	62% to below 65% (CLO others)	29687.360	<table><tr><td>ROM (Fe)</td><td>2037189.90</td></tr><tr><td>Fines (Fe)</td><td>863444</td></tr><tr><td>51%-55%</td><td>100928.720</td></tr><tr><td>55%-58%</td><td>981.680</td></tr><tr><td>58%-60%</td><td>26135.760</td></tr><tr><td>60%-62%</td><td>367785.261</td></tr><tr><td>62%-65%</td><td>364624.365</td></tr><tr><td>65% and above</td><td>2988.120</td></tr><tr><td>CLO (Fe)</td><td>1308883</td></tr><tr><td>Below 62% (clo any size)</td><td>929084.124</td></tr><tr><td>62%-65%(5-18mm)</td><td>69775.420</td></tr><tr><td>62%-65%(10-40mm)</td><td>280335.660</td></tr><tr><td>62% to below 65% (CLO others)</td><td>29687.360</td></tr></table>	ROM (Fe)	2037189.90	Fines (Fe)	863444	51%-55%	100928.720	55%-58%	981.680	58%-60%	26135.760	60%-62%	367785.261	62%-65%	364624.365	65% and above	2988.120	CLO (Fe)	1308883	Below 62% (clo any size)	929084.124	62%-65%(5-18mm)	69775.420	62%-65%(10-40mm)	280335.660	62% to below 65% (CLO others)	29687.360	--
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13

		Dozer	2		Dozer	2	
		Dumper	12		Dumper	12	
		Water tanker	1		Water tanker	1	
		Crane	1		Crane	1	
		Back Hoe	1		Back Hoe	1	
		Motor Grader	2		Motor Grader	2	
		Front end loader	1		Front end loader	1	
		Load haul dumper	12		Load haul dumper	12	
		Generator	10		Generator	10	
		Other HEMM machinery	22		Other HEMM machinery	22	

During present inspection carried out for processing of Review of Mining Plan the violation under Rule 11(1) and 45(5)© found violated.

Rajesh Kumar Das
Deputy Controller of Mines
IBM, Bhubaneswar