

MCDR INSPECTION FORMAT

Sl. No.	Particulars	Details
1	Name of the Mine	NADIDIHI IRON & MANGANESE ORE MINE
1.1	Name of Inspecting Officer with Designation	Rajesh Kumar Das, DCOM
1.2	Date of Inspection & accompany officer	12.12.2024 & Shri Vikil N.Kawale(Mine Manager) & Shri Abani Kumar Dash, Geologist.
2	Total Lease Area (Ha) with breakup of Non-forest and forest land	Total Lease area- 117.206 Ha Non-Forest area- 31.377 Ha Forest Land area-85.829 Ha
3	Mine code	30ORI13073
4	IBM Registration Number under rule 45 of MCDR, 2017	IBM/329/2011
5	Name of the lessee, Address, phone, email and fax number	M/s ESL STEEL LIMITED At-Siyaljori, Post-Jogidih, PS-Chandankiyari Bokaro, Jharkhand-828303 Phone No.- 8651102477 Email Id.- Ashish.Gupta3@vedanta.co.in Fax No.- 8651102477
6	Village	Rengalbeda & Nadikasira
7	Taluka/Mandal	Koira
8	District	Sundargarh
9	Pin code	770048
10	State	Odisha
11	Post office	Koira
12	Nearest police station	Koira
13	Nearest Railway station	Barbil
14	Date of Grant of Mining Lease	17.11.2021
15	Date of Execution	20.11.2021
16	Date of opening of Mine	26.11.2021
17	Date of expiry	19.11.2071
18	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Mr. Ashish Gupta ESL Steel Limited Siyaljori, PO-Jogidih, OP-Bangaria Bokaro Steel City Jharkhand-828303 Email-id: Ashish.Gupta3@vedanta.co.in Phone No. 7763807222 Date of Appointment: 26.10.2023
19	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Mr. Biswanath Sahoo Nadidihi Iron & Mn Ore Mine ESL Steel Limited Village- Nadidihi Taluka-Bonai

		P.O.-Koirā District-Sundargarh Odisha-770048 Email: Biswanath.Sahoo@vedanta.co.in Phone: 9049930239 Date of Appointment- 02.11.2023
20	Name of the Mines Manager with Address, mobile no, email, fax number and date of appointment in mine	Mr. VIKIL N. KAWALE M/s. ESL Steel Limited, Siyaljori, PO-Jogidih, OP-Bangaria Bokaro steel city Jharkhand-828303 Email-Id: Vikil.Kawale@vedanta.co.in Phone: 9545505071 Date of Appointment- 30.09.2024
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. VIVEK SAMBREKAR Diploma in Mining & Mine Surveying Experience- 32 years ESL Steel Limited, Siyaljori, PO-Jogidih, OP-Bangaria Bokaro steel city JHARKHAND-828303 Email-Id- Vivek.Sambrekar@vedanta.co.in Mob.no. -9923176906 Date of Appointment- 20.01.2022
22	Name of the Geologist, Qualification and total experience with Address, mobile no, email, fax number and date of appointment in mine	Mr. ABANI KUMAR DASH M.Phil. (Geology) Experience- 20 years ESL Steel Limited, Siyaljori, PO-Jogidih, OP-Bangaria Bokaro Steel City JHARKHAND-828303 Email-Id- Abani.Dash@vedanta.co.in Mob.no. -9765391978 Date of Appointment- 20.01.2022
23	Date of Approval of Mining Plan/Review of Mining Plan/ their modifications with five-year period and specific condition in approval letter, if any.	Letter No. - BBS/SNG/IRON-MN/2166/MP/2022-23 Date of Approval: 12/05/2022 Letter No.: MCDR-MiFLOFE/21/2022-BBS-IBM_RO_BBS Date of Approval: 12/06/2024
24	Mineral (s) granted in lease and proved for mining.	IRON & MANGANESE ORE
25	Method of Mining (Opencast, Underground)	Opencast
26	Category (Fully Mechanized, Others or Manual)	Fully Mechanized
27	Captive/Non-Captive	Non-Captive
28	Present EC Capacity	7.451 MTPA (For Production of 6 MTPA of Iron ore + Dry Screening & Crushing of 1.451 MTPA of low-grade iron ore/reworking of old dumps.)

Exploration:

Sl.No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
1a	Backlog of previous year	NA	NA	Ex-Lesse: 301Nos,

				FY-23: 71 Nos FY-24: 13 Nos. Boreholes
1b	Exploration over lease area for Geological axis 1 or 2.	Not proposed	Area under G1: 105.061 Area under G2: 12.1450	Total 84 nos. of BHs were done in FY24 & FY23 to gain more confidence & also converted the overall 9.493 Ha G2 area into G1 and 7.184 Ha unexplored area into G1/G2.
1c	Exploration Agency & Expenditure in Lakh Rupees during the year	Not proposed	Drilling Partner: M/s Maheshwari Mining Pvt. Ltd. Technical Partner: SRK Mining Services (India) Private Ltd. Expenditure: FY23: 358.05 FY24: 76.04	
1d	Balance area to be explored to bring Geological axis in 1 or 2	NA	Area under G1: 105.0610 Area under G2: 12.1450	
1e	Balance reserves as on 01.04.2024	NA	8,469,932.00 Tonnes	
1f	General remarks of inspecting officer on geology, exploration etc.	The area of the Nadidihi block falls in the Upper shale formation of the Koira group. It can be divided into the top Ferruginous Shale unit and its underlying Manganiferous Shale unit. The Manganiferous Shale of the Upper Shale formation has a gradational contact with its underlying litho-units of Banded Iron Formation represented by BHJ, BHQ and BHC. The sequence of lithounits as observed in the boreholes drilled in the area in general is as follows: Ferruginous Shale, Lat/Iron Ore (+55% Fe) shally Iron ore (45% to 54.9% Fe), Manganiferous shale and/or Mn ore, BHJ/BHQ/BHC. The lease area broadly explored in G1 & G2.		

Development: -

Sl.No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
2a	Location of development w.r.t. lease area	320366.047 E to 319476.878E 2429126.037 N to 2430101 N	320302 E to 319485E 2429130N to 2430095N	
2b	Separate benches in topsoil, overburden, and mineral	Total 9 benches proposed.	Type No. of Benches North Pit: Topsoil 0 Overburden 4 Mineral 3 South Pit: Topsoil 0 Overburden 4 Mineral 5	
2c	Stripping ratio or ore to OB ratio	FY:24 1:0.47	FY:24 1:0.17	
2d	Quantity of topsoil generation	NA	NA	

	in m3			
2e	Quantity of overburden generation in m3	1600185.2 m3	480492.4 m3	
2f	General remarks of inspecting officer on development of pit w.r.t. type of deposit etc.	During mine visit it was observed that that bench parameters are not as per proposal. The benches not developed as per proposal. The maximum height of bench was proposed 9.0 meter and minimum width 10 meter but bench height in many places in both the pits(South Pit between BP-25 to BP-26,BP-13 to BP-17 & North pit northern direction) 12-15 meter(benches collapsed) and width also less than proposal. The OB/waste generation is proposed 1600185.2 m3 in 2023-24 but actual generation was 480492.4 m3.		

Exploitation: -

Sl.No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
3a	Number of pits proposed for production	02 (North Pit & South Pit)	02 North Pit & South Pit	<u>North Pit: 438 m x 284 m x 70.2 m</u> <u>South Pit : 482 m x 408 m x 72.5 m</u>
3b	Quantity of ROM mineral production proposed	3369345.0 (Metric Tons)	2889443.44 (Metric Tons)	
3c	Recovery of salable/usable mineral from ROM production	69.9% ROM- 3369345MT Subgrade- 1010804 MT	42.87 % ROM- 2889443.44 Subgrade Generated - 1650558.39	
3d	Quantity of mineral reject generation (Tonnes)	1010804.00	1650558.39	Mineral Reject (45% to 55% Fe) was blended & consumed as per the market demands.
3e	Grade of mineral reject generation and threshold value declared	45 Fe % to 55 Fe % Threshold value 45 % Fe content	45 Fe % to 55 Fe % Threshold value 45 % Fe content	Mineral Reject (45% to 55% Fe) was blended & consumed as per the market demands.
3f	Quantity of sub-grade mineral generation	NA	NA	
3g	Grade of sub-grade mineral generation	NA	NA	
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized	Mechanized	Mechanized method by using the 12 nos. Excavator, 2 Dumper, 25 nos. Tipper, 1 Rock-breaker, Drilling & Blasting and 8 nos. Mobile Screening plant, adopted for segregating from ROM.

3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	NA	NA	
3j	Provision of drilling & blasting in mineral benches	Yes	Yes, Drilling and blasting are conducted in Hard rocks only which comprise only about 5 - 10 % of total handling.	Drilling done by using the wagon drill machine of Hyundai 230 LM with 148 HP of 115 mm diameter & Blasting done by using the Class-II type Slurry explosives.
3k	Provision of mining machineries in mineral benches	11 No. excavators 2 No. Dozer 1 No. Drill Machine. 21 No. Dumpers	12 No. excavators 2 No. Dozer 1 No. Drill Machine 25 No. Tippers	Excavator: (4.50 to 0.25 m3). Dozer: 354 HP, 215 HP Wagon drill machine 115 diameters with 148 HP 30 Tonnes Volvo /Eicher 802 5XM
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	46.86 Ha	46.86 Ha	
3n	Ore to OB ratio for the pit/mine during the year	FY:24 1:0.47	FY:24 1:0.17	
3o	Total area put in use under different heads at the end of year	Area under Mining- 46.86 Ha OB /Waste dumping- 20.80 Ha Infrastructure- 3.25 Ha Mineral Storage: 17.31 Ha Roads- 5.90 Ha	Area under Mining- 46.86 Ha OB /Waste dumping- 20.80 Infrastructure- 3.25 Ha Mineral Storage: 17.31 Ha Roads- 5.90 Ha.	
3p	Production of ROM mineral during last five-years period, as applicable	2021-22: 236018 MT 2022-23: 3480765 MT 2023-24: 3369345.0 MT	2021-22: 236018 MT 2022-23: 2633720 MT 2023-24: 2889443.44 MT	
3q	General remarks of inspecting officer on method of mining etc.	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.		

Solid Waste Management-Dumping: -

Sl.No.	Item	Proposals (FY 2022-23)	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 32, 33)	No Topsoil OB is proposed to dump separately.	No Topsoil -OB is dumped separately. -Subgrade / Mineral Reject is stored separately or blended with Ore (having grade >55 % Fe) as per Market demand.	
4b	Location of topsoil, OB & mineral reject dumps	<u>Location of OB:</u> 320014.00 E to 320194.00 E 2430534.408 N to 2430691.712 N <u>Mineral Reject</u> 319443.401E to 320269.105 E 2429589.4 N to 2430346.781 N	<u>Location of OB:</u> 320015.12 E to 320195.00 E 2430535.00 N to 2430656.795N <u>Mineral Reject</u> 319785.868 E to 319994.734 E 2429916.039 N to 2430346.33 N	
4c	Number of dumps within lease area and outside lease area	Within Lease -1 Outside Lease - Nil	Within Lease -1 Outside Lease - Nil	
4d	Location of dumps w.r.t. ultimate pit limit	<u>Location of OB:</u> 320014.00 E to 320194.00 E 2430534.408 N to 2430691.712 N	<u>Location of OB:</u> 320015.12 E to 320195.00 E 2430535.00 N to 2430656.795N	
4e	Number of active & alive dumps	1	1	
4f	Number of dead dumps	0	0	
4g	Number of dumps stabilised	0	0	
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	Garland Drains: 280mt Retaining Wall: 384 mt	Garland Drains: Nil Retaining Wall: 384 mt	
4j	Number of settling ponds	Nil	Maintenance of 3 existing settling Pond.	
4k	Specific comments of inspecting officer on waste dump management	During mine visit it was observed that waste dumping is broadly as per proposal.		

Solid Waste Management-Backfilling: -

SL.No.	Item	Proposals (FY	Actual work	Remarks
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		2023-24)		
5a	Status on part or full extraction of mineral from mined out area before starting backfilling.	NA	NA	
5b	Area under backfilling of mined out area	NA	NA	
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area	NA	NA	
5d	Total area fully reclaimed & rehabilitated	NA	NA	
5e	General remarks of inspecting officer on backfilling, reclamation etc	Area not matured for backfilling.		

Progressive Mine Closure Plan: -

Sl.N.	Item	Proposals (FY 2023-24)	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly - Rule 26(2). (Hard copy same provided)	Yes	Yes, AR submitted on 26.06.2024	
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	NA 0.40 Ha 1280 118656 NA 4.55 lakhs	NA 0.40 Ha 1550 119706 No 5.66 lakhs	
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	NA NA NA NA NA	NA NA NA NA NA	
6d	Compliance of Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitated (ha) iii) Method of rehabilitation	NA NA	NA NA	

		NA	NA	
6e	Compliance of Environmental monitoring (core zone & buffer zone)	NA	NA	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Broadly as per proposal.		

Mineral Conservation: -

SL.No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Yes	Yes, Fines & Lumps dispatch with Grade >51% Fe content.	Dispatch as per market demand.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Mechanical	Mechanical	Mechanical methods used for sorting by using Excavator, Wheel-loader, Rock-breaker and Mobile Screening plant.
7c	Different grade of mineral sorted out at mines	45.55 % Fe content >55% Fe content	45-51 % Fe content 51-55 % Fe content 55-58 % Fe content 58-60 % Fe content 60-62 % Fe content 62-65 % Fe content >65% Fe content	
7d	Any beneficiation process at mines	Mobile Screening Plant with capacity of 250 TPH (1no.) & 350 TPH (1 no.), 800 TPH (1 no.)	Mobile Screening Plant with capacity of 250 TPH (4 nos.) & 200 TPH (2 nos.), 150 TPH (2 no.s)	
7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	Blend different grade material to get desired grade.		

Environment: -

SL.No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
8a	Separate removal and utilization of topsoil	NA	NA	
8b	Concurrent use or storage of topsoil	NA	NA	
8c	Separate dumps for overburden, waste rock, rejects and fines	Yes Location of OB: 320014.00 E to 320194.00 E 2430534.408 N to 2430691.712 N Mineral Reject	Yes Location of OB: 320015.12 E to 320195.00 E 2430535.00 N to 2430656.795N Mineral Reject	Separate dumps for overburden waste rock, rejects and fines done as per proposed plan. (Mineral rejects stored in proposed stack/Stockpile area / blended with Ore (having grade

		319443.401E to 320269.105 E	319785.868 E to 319994.734 E	> 55 % Fe) as per Market demand.)
		2429589.4 N to 2430346.781 N	2429916.039 N to 2430346.33 N	
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	Nil	Nil	
8g	Survival rate	80 %	75 %	
8h	Water sprinkling on roads to control airborne dust	Yes, Water sprinkling is carried out using water tanker	Yes, Water sprinkling is carried out using water tanker	
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.		

Compliance of Rule 45

Sl.No.	Item	COMMENTS		Remarks.
9a	Status of submission of Monthly and Annual returns	Monthly return Submitted up to 10 th of Every Month Annual return submitted on 26.06.2024.		
S.N.	Item	Details GIVEN in A.R.	Actual in field	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	-Mining Engineer: Mr. Vivek Sambrekar -Geologist: Mr. Abani Kumar Dash -Mines Manager: Mr. Manjit Natekar	-Mining Engineer: Mr. Vivek Sambrekar -Geologist: Mr. Abani Kumar Dash -Mines Manager: Mr. Manjit Natekar	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	(i) Already exploited and abandoned by opencast (O-C) mining- 0.000 Ha. (ii) Covered under current (O-C) mining- 46.86 Ha. (iii) Reclaimed-rehabilitated- 0.000 Ha. (iv) Used for waste disposal- 20.80 Ha. (v) Occupied by plant,		

		buildings, residential, welfare buildings and roads- 9.15Ha. (vi) Used for any other purpose (specify) Safety Zone, Green belt area, Mineral Storage & Environment measures, etc.- 40.396Ha.		
9d	Scrutiny of Annual return on afforestation	1550 plants (75 % Survival rate)		
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	Quantity: 1650558.39 Metric Tonnes Grade: 45 Fe % to 55 Fe %		
9f	Scrutiny of Annual return on ROM stock and/or graded ore	-Opening Stock: 832082.00Tonnes - ROM Production: 2889443.440 Tonnes - ROM Closing Stock: 1469403.600Tonnes		
9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Ex. Mine Price: 51-55% Fe Fines-Rs:2112.39 55-58% Fe, Fines Rs:3460.88 58-60% Fe, Fines Rs: 3393.82 60-62% Fe, Fines Rs: 4475.65 62-65% Fe, Fines Rs: 4727.19 62-65% Fe, Fines Rs: 5054.00 Below 62% Fe (CLO any size) Rs: 5040.18 Cost of production-Rs: 3251.51/-		
9i	Scrutiny of Annual return on fixed assets	- Rs: 1710432063		
9k	Scrutiny of Annual return on mining machineries		Excavator (Backhoe): 2 No. (0.25 cum) 2 No. (3.2 cum) 7 No. (1 cum) 1 No. (4.5 cum) Wheel loader: 7 Nos. 3 No. (2.2 cum) 4 No. (1.5 cum) Tipper: 25 10 No. (18.5 cum) 15 No. (19.5 cum) Drilling Machine: 01 (115 mm diameter)	

			Dozer : 2 nos. 1 nos. -354 HP 1 nos. – 215 HP Water Sprinkler : 2 1 nos. – 16 KL 1 nos. – 28 KL Diesel Generator: 8 1 nos. - 750 KWH 1 nos. – 100 KWH 6 nos.- 8 KWH	
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The inspection carried out for processing of Modified Mining Plan. During present inspection violations under Rule 11(1) & 45(5) © found violated.

**Signed by Rajesh Kumar
Das
Date: 02-04-2025 15:26:26**