

MCDR INSPECTION REPORT

Name of the Mine: Sukinda Chromite Block, of M/s Tata Steel Limited,
11ORI19028

Name of the Inspecting Officer : Shri Sanjay Kumar Mahapatra, ACOM

Name of the accompanying official: Shri Shambhu Nath Jha, Agent

Date of Inspection: 01.12.2023.

S. N.	Particulars	Details
1	Name of the Mine	Sukinda Chromite Block
2	Total Lease Area (Ha) with breakup of Non-forest and forest land	Total lease area-406 Ha Forest Area-404.67 Ha Non-Forest Area-1.33 Ha
3	Mine code	11ORI19028
4	IBM Registration Number under rule 45 of MCDR, 1988	IBM/4376/2011
5	Name of the lessee, Address, phone, email and fax number	Tata Steel Limited, N-3/24, IRC Village, Nayapalli, Bhubaneshwar, Odisha - 751015.
6	Village	Kalarangiatta
7	Taluka/Mandal	Sukinda
8	District	Jajpur
9	Pin code	755028
10	State	Odisha
11	Post office	Kalarangiatta
12	Nearest police station	Kaliapani
13	Nearest Railway station	Jajpur Keonjhar Road (JK Road)
14	Date of Grant of Mining Lease	23.07-2020
15	Date of Execution	23.07-2020
16	Date of opening of Mine	21-09-2020
17	Date of first Renewal, if applicable and its period & expiry	AUCTIONED BLOCK
18	Date of second Renewal, if applicable and its period & expiry	AUCTIONED BLOCK
19	Date of submission of renewal application if Mining Operations are continuing under deemed extension	Not Applicable
20	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Mr. T V Narendran Managing Director Tata Steel Limited, Bunglow No-5, C Road Jamshedpur. Jharkhand, 831001. Mobile: 022-66657274 Mail Id: narendran@tatasteel.com narendran@tatasteel.com, w.e.f : 01-11-2023
21	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Shri Shambhu Nath Jha, B.Tech(Mining) with FCC,At/P.O.: Kalarangiatta,Dist : Jajpur, Orissa - 755028,Mobile: 9438887778,Date of appointment-01.07.2023,Mail Id: jhasn@tatasteel.com

22	Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines	Shri Nihar Ranjan Mitra, B.Tech(Mining) with FCC U/R,At/P.O.: Kalarangiatta,Dist : Jajpur, Orissa – 755028,Mobile: 9238087107,Date of appointment-01.07.2023,Mail Id: nihar.mitra@tatasteel.com
23	Name of the Mining Engineer, Qualification and total experience with Address, phone, email, fax number and date of appointment in mine	Same as above.
24	Name of the Geologist, Qualification and total experience with Address, phone, email, fax number and date of appointment in mine	Shri Viraj A Verlekar, MSc Geology with 19 years of Exp.At/P.O.: Kalarangiatta Dist : Jajpur, Orissa – 755028,Ph no. 9204651665,Date of appointment-29.07.2020
25	Whether Geologist and Mining Engineer appointed in mines satisfy the rule 55& carrying out their duties as per rule 56 & 57.	Appointed.
26	Date of Approval of Mining Plan/Modified Mining Plan with five-year period and specific condition in approval letter, if any.	MP/A/15-ORI/BHU/2020-21 Dated: 10/09/2020 for the period from 01.04.2020 to 31.03.2025.
27	Date of Approval of Scheme of Mining/Modified Scheme of Mining with five-year period and specific condition in approval letter, if any.	BBS/JJP/CR/2172/MPM/2022- 23, Dated: 25/07/2022 for the period from 2022-23 to 2024-25.
28	Mineral(s) granted in lease and proved for mining	Chromite
29	Method of Mining(Open cast, Underground)	Open cast
30	Category (Fully Mechanised, Others or Manual)	Fully Mechanised
31	Captive/Non Captive	Non-Captive

Exploration

S.N.	Item	Proposals for, 2022-23	Actual work during 2022- 23	Remark
1a	Backlog of previous year	NA	NA	
1b	Exploration over lease area for Geological axis 1 or 2.	NA	NA	Mineralized Area is fully covered under G1.
1c	Exploration Agency & Expenditure in lakh Rupees during the year	NA	NA	
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	Nil	
1e	Balance reserves as per latest approved document as on 1.04.2023	3.2 Million Tons	3.2 Million Tons	
1f	General remarks of inspecting officer on geology, exploration	There was no proposal of Exploration during the year 2022-23. Mineralized zone explored to G1		

etc.

level of exploration. Total Reserve (3.2) + Resource (83.29) as on 01.04.2023 = 86.49 Million tonne

Development

S.N	Item	Proposals for, 2022-23	Actual work during 2022-23	Remark
2a	Location of development w.r.t. lease area	2324734N – 2325890N & 369857E - 371929E	2324740N – 2325880N& 369857E - 371918E	Working within the proposed area
2b	Separate benches in topsoil, overburden and mineral (Rule 15)	Separate benches in overburden and mineral	Separate benches in Ore and OB	Benches not maintained properly violation of rule 11(1) of MCDR 2017 Issued.
2c	Stripping ratio or ore to OB ratio	1:5.51	1:5.35	
2d	Quantity of topsoil generation in m ³	NIL	NIL	
2e	Quantity of overburden generation in m ³	7216649	7006243	02 Lakh Tonne less OB produced. violation of rule 11(1) of MCDR 2017 Issued.
2f	General remarks of inspecting officer on development of pit w.r.t. type of deposit etc	<ol style="list-style-type: none">1. During Inspection it was observed that the mine was not developed systematically and bench parameters were not maintained as per proposals. At some places in both the Northern and Middle bands benches were merged and the height of benches were found to be more than 20 meters.2. The development of quarry is also not as per proposal. OB generation is proposed for 7216649 cum for the year 2022-23 and against which actual OB generated was 7006243 cum. Thus less 02 lakh CUM OB generated for which Violation of Rule11(1) of MCDR 2017 pointed. Vide letter dated 11.12.2023.		

EXPLOITATION

N.	Item	Proposals for, 2022-23	Actual work during 2022-23	Remark
3a	Number of pits proposed for production	1	1	One quarry
3b	Quantity of ROM mineral production proposed	1309746	1309744	Production achieved as proposed.
3c	Recovery of salable/usable mineral from ROM production	100%	100%	100% recovery
3d	Quantity of mineral reject generation	0	0	
3e	Grade of mineral reject generation and threshold value declared	+ 10% Cr ₂ O ₃	+10% Cr ₂ O ₃	Threshold value : 10% Cr ₂ O ₃
3f	Quantity of sub-grade mineral generation	0	0	
3g	Grade of sub-grade mineral generation	NA	NA	
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized	Mechanized	
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	Blast holes of 115 mm diameter in both Ore & OB
3k	Provision of mining machineries in mineral benches	Yes	Excavators-13 Dumpers-31 Tippers-34 Drill-2 Dozer-7	Excavators-13 Dumpers-31 Tippers-34 Drill-2 Dozer-7
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Height-10m Width-12m Same in Ore & OB	Bench parameters were not maintained as per proposals.	At some places in both the Northern and Middle bands benches were merged and the height of benches were found to be more than 20 meters for which violation of Rule 11(1) of MCDR 2017 issued.
3m	Total area covered under excavation/pits	158.080 Ha	158.080 Ha	
3n	Ore to OB ratio for the pit/ mine during the year	1:5.51	1:5.35	
3o	Total area put in use under different heads at the end of year	Mining-158.080Ha Dumps-98.980 Ha Mineral	Mining-158.080Ha Dumps-98.980 Ha Mineral	

		Storage-32.92 Ha Township-34.76 Ha Infrastructure-35.01 Ha Others- 46.25 Ha	Storage-32.92 Ha Township-34.76 Ha Infrastructure-35.01 Ha Others- 46.25 Ha	
3p	Production of ROM mineral during last three-year period, as applicable 2020-21 2021-22 2022-23	802603 Tonne 1364453 Tonne 1309746 Tonne	801854 Tonne 1359986 Tonne 1309744 Tonne	AUCTIONED BLOCK. Proposal and achievement from 2020-21 mentioned.
3q	General remarks of inspecting officer on method of	Mine was not developed systematically and bench parameters were not maintained as per proposals. At many places in both the Northern and Middle bands benches were merged and the height of benches were found to be more than 20 meters. Violation of Rule 11(1) of MCDR 2017 issued		

Solid Waste management-Dumping

S.N	Item	Proposals for, 2022-23	Actual work during 2022-23	Remark
4a	Separate dumping of topsoil, OB & mineral reject (Rule 33, 37)	Only Back filling of OB II was proposed for OB disposal.	OB generated was disposed at OB II Quarry for back filling.	OB back filled.
4b	Location of topsoil, OB & mineral reject dumps	No topsoil dumps were proposed. Only Back filling of OB II was proposed for OB disposal.	OB generated was disposed at OB II Quarry for back filling.	No topsoil was generated during the year.
4c	Number of dumps within lease area and outside lease area	OB Dumps – 3 Nos. (Dead) & Back filling of OB II Quarry	OB Dumps – 3 Nos. (Dead) & Back filling of OB II Quarry	Total 05 Dumps. All are inside the lease area.
4d	Location of dumps w.r.t. ultimate pit limit	Outside of the UPL	Outside of the UPL	
4e	Number of active & alive dumps	Only Back filling of OB II & MB I was proposed.	Only Back filling carried out at OB II & MB I Quarry.	
4f	Number of dead dumps	5	5	
4g	Number of dumps stabilised	3	3	
4h	Whether Retaining wall or garland drain all along dumps are there	Yes	Retaining wall and garland drain all along	Only maintenance work carried.

4i	Length of Retaining wall or garland drain all along dump	Retaining Wall Garland drain - - Not Proposed	Retaining Wall Garland drain maintainace carried	dumps were there. Maintenance made in the retaining wall & Garland drain - 405m
4j	Number of settling ponds	Not Proposed	Not Proposed	
4k	Specific comments of inspecting officer on waste dump management	The dumps were outside the ultimate Pit limit. Total 03 numbers of dumps stabilized		

Solid Waste management-Backfilling

S.N	Item	Proposals for, 2022-23	Actual work during 2022-23	Remark
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Mineral has been fully extracted from OB II Quarry within the opencast limit .	Mineral has been fully extracted from OB II Quarry within the opencast limit .	Mineral has been fully extracted from OB II Quarry within the opencast limit and dumping over the area is being practiced.
5b	Area under backfilling of mined out area	44.56 Ha	56.60 Ha	Violation of Rule 11(1) of MCDR 2017 issued.
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 36)	Nil	Nil	No top soil.
5d	Total area fully reclaimed & rehabilitated	NA	12.7 Ha	
5e	General remarks of inspecting officer on backfilling, reclamation etc	This is an old mine. Auctioned in the year 2020. The backfilling is carried was carried over an area of 56.60 ha against the proposal of 44.56 Ha. Violation of Rule 11(1) MCDR pointed.		

Progressive Mine Closure Plan

N.	Item	Proposals for, 2022-23	Actual work during 2022-23	Remark
6a	Whether Annual report on PMCP submitted on time and correctly - Rule 26(2).	Yes	Submitted before due date.	Date of submission of report 30-06-2023
6b	Management of worked/mined out benches	i)Nil	i)Nil	i)Backfill area not matured for rehabilitation
	i) Area available for rehabilitation (ha)	ii)2	ii)2	ii) Segregation dump & gap plantation in dump area
	ii) Afforestation done (ha)	iii)5000	iii)5015	
	iii) No. of saplings planted during the year	iv)10000	iv)10026	
		v)Nil	v)Nil	

	iv) Cumulative no. of plants v) Any other specific method of rehabilitation vi) Cost incurred on watch & care during the year	vi)10 lakhs	vi)9.07 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	i)Nil ii) 44.56 Ha iii)Nil iv)Nil v)Nil	i)Nil ii) 56.60 Ha iii)Nil iv)Nil v)Nil	The backfilling is carried was carried over an area of 56.60 ha against the proposal of 44.56 Ha. Violation of Rule 11(1) MCDR pointed.
6d	Compliance of Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitated (ha) iii) Method of rehabilitation	i)2Ha. ii)Nil iii)NA	i)2Ha. ii)Nil iii)NA	5015 nos Plantation has been done.
6e	Compliance of Environmental monitoring (core zone & buffer zone)	Periodical Monitoring as stipulated in Environment Clearance granted by MoEF & CC and Consent to Operate granted by SPCB	Periodical Monitoring carried out at regular interval as stipulated in Environment Clearance granted by MoEF & CC and Consent to Operate granted by SPCB	Cumulative 10016 nos Plantation has been done till FY 2022-23 in the Plan period.
6f	General remarks of inspecting officer on PMCP compliance & progressive closure operations	The backfilling is carried was carried over an area of 56.60 ha against the proposal of 44.56 Ha. Violation of Rule 11(1) MCDR pointed.		

Mineral Conservation

S.N.	Item	Proposals for, 2022-23	Actual work during 2022-23	Remark
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade-wise sorting of ROM > 40%, <40% Cr2O3 at Stack yard and blending.	ROM > 40%, <40% Cr2O3 were sorted and stacked at Stack yard and blending	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Mechanized	Mechanized	
7c	Different grade of mineral sorted out at mines	Grade-wise sorting of ROM > 40%, <40% Cr2O3 at Stack yard.	Grade-wise sorting of ROM > 40%, <40% Cr2O3 at Stack yard.	
7d	Any beneficiation process	No. Only	No. Only	

7e	at mines General remarks of inspecting officer on Mineral conservation & beneficiation issues	blending. No beneficiation process at mines is practiced. 100% recovery of salable/usable mineral from ROM production	blending.
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Environment

S.N.	Item	Proposals for, 2022-23	Actual work during 2022-23	Remark
8a	Separate removal and utilization of topsoil (Rule 36)	-	-	As the entire lease area is broken up prior to Auction, there is no generation of top soil
8b	Concurrent use or storage of topsoil	-	As no Top soil no storage.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 37)	Separate dumps for overburden, rejects and fines were proposed.	Separate dumps for overburden, rejects maintained.	Overburden disposed over OB II Quarry
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Disposal of overburden for back filling of OB II & MB I Quarry.	The overburden disposed over OB II Quarry for reclamation.	Overburden disposed over OB II Quarry
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Phased rehabilitation of waste dumps was proposed	Rehabilitation carried out by plantation as mentioned above.	
8f	Baseline information on existence of plantation & additional Plantation done	5000	5015	Cumulative 10016 nos Plantation done till 2022-23 in the Plan period. (i.e 2020 onwards after Auction)
8h	Water sprinkling on roads to control airborne dust	Regular water sprinkling to control the air borne dust.	Water sprinkling by high capacity mobile water sprinklers and fixed water sprayer on roads to control the air born dust was	Roads exposed to human interface were been black topped. water sprinkling to control the air borne dust is being carried out by 07 no

		practiced.	of Water Tanker.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	The mine is ODF free. However highly unsystematic benches were seen during inspection. Overburden disposed over OB II Quarry	

Compliance of Rule 45

S.N	Item	Observation of I/Officer	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly returns submitted within stipulated time. Annual return for FY 20-21, FY 21-22 . Date of submission of Annual return:- 30.06.2023. Monthly returns submitted before due date.(i.e before 10 th of next month)	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	As per AR Shri Nihar Ranjan Mitra Manager & Mining Engineer, and Shri Viraj A Verlekar Geologist	During inspection Statutory Manager & Mining Engineer could not attend MCDR inspection as he was involved in MEMC week inspection. Geologist and Agent & other mine officials present.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Mining-158.080Ha Dumps-98.980 Ha Mineral Storage-32.92 Ha Township-34.76 Ha Infrastructure-35.01 Ha Others- 46.25 Ha	As per Annual Return.
9d	Scrutiny of Annual return on afforestation	Cumulative 4Ha as per Mine Plan proposal	As per Annual Return.
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	Nil	100% recovery of salable/usable mineral from ROM production. Nil Mineral Reject.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	1309744	Opening Stock- Nil Production -1309744 Tonne Closing stock- nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Cost of Production- 17771.99 Ex-Mine price- Fines (i) Below 40% Cr2O3:-Rs 6243.53/- (ii) 40% to below 50% Cr2O3:-Rs 14231.37/- (iii) 52% Cr2O3 & above :-Rs 19092.42/-	As per Annual Return

9i	Scrutiny of Annual return on fixed assets	Value of fixed assets- Rs 1949438503	As per Annual Return
9k	Scrutiny of Annual return on mining machineries	Excavators-13 Dumpers-31 Tippers-34 Drill-2 Dozer-7 Garder-2 Water Tanker-7	Deployed in the mine.

10. Drone Survey Information and data thereof. As per 34A Annual Drone survey data
submitted on dated 01.07.2023.