### MCDR INSPECTION REPORT

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<u>General</u>			
SN	Particulars	Details	
4	F.1	MCDR-MiFL0FE/29/2022-BBS-	
1	File no.	IBM RO BBS	
_		Vikram Prakash Deshpande, Assistant	
2	Name of the Inspecting Officer	Controller of Mines	
3	Name of the Mine	Raikela & Tantra Iron Mines	
		DLC: 40.696 Ha.	
4	Total Lease Area (Ha) with breakup of Non-forest and forest land	Total: 49.372 Khasra Forest: 7.936 Ha. Non-forest: 0.740 Ha.	
5	Mine code		
6	Date of Inspection	30.07.2024	
7	·	Mr. T. D. Behera, Mines Manager &	
1	Name of official accompanying inspection	Mr. S.S. Pradhan, Mining Engineer	
8	IBM Registration Number under rule 45 of MCDR, 1988	Registration No. allotted by IBM: IBM/4124/2011	
9	Name of the lessee, Address, phone, email and fax number	M/s. Penguin Trading & Agencies Ltd; Maa Parvati Enclave, D-Block, 2nd Floor, Station Road, PO-Barbil- DIST- Keonjhar, Odisha, PIN-758035, Ph.0 33-22871016 Email ID: penguinbbl@gmail.com Fax No-033-22174033	
10	Village	Raikela & Tantra	
11	Taluka/Mandal	Koira	
12	District	Sundargarh	
13	Pincode	770048	
14	State	Odisha	
15	Post office	Dengula	
16	Nearest police station	Koira	
17	Nearest Railway station	Barsuan	
18	Date of Grant of Mining Lease	08.10.1986	
19	Date of Execution	03.12.1986	
20	Date of opening of Mine Date of first Renewal, if applicable and its period &	27.07.1987	
21	expiry	22.02.2005	
22	Date of second Renewal, if applicable and its period & expiry	NA	
23	Date of submission of renewal application if Mining Operations are continuing under deemed extension	NA	
24	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Sh. N. K. Bathwal M/s. Penguin Trading & Agencies Ltd; Surabhi Building, 5 <sup>th</sup> Floor, 8/1/2 Loudon Street, Kolkata-700017, West Bengal Ph.9830036732 Email ID: penguinbbl@gmail.com Date of appointment: 01.04.2003	
25	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Sh. S. K. Gupta M/s. Penguin Trading & Agencies Ltd; Maa Parvati Enclave, D-Block, 2nd Floor, Station Road, PO-Barbil DIST-Keonjhar, Odisha, PIN-758035, Ph.9438802211, Email ID: penguinbbl@gmail.com Date of appointment: 01.08.2001	
26	Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines	Mr. T. D. Behera, Mines Manager, Diploma in Mining Engineering; Raikela & Tantra Iron Mines Penguin Trading & Agencies Ltd; AT-Raikela, PO-Dengula-770048 DIST-Sundargarh (Odisha).	

Ph.9439591863
Email ID: penguinbbl@gmail.com
Date of appointment:14.08.2013

Mr. S.S. Pradhan, Mining Engineer, B. Tech in Mining Engineering, 3 Years experience, Mining engineer Raikela & Tantra Iron Mines	
Qualification Date of appointment Address phone/email  Name of the Mining Engineer  & Geologist Qualification and  Qualification Date of appointment Address phone/email DIST-Sundargarh (Odisha). Ph. 7077244759 Email ID: penguinbbl@gmail.com Date of appointment: 01.08.2023	
total experience  Geologist Qualification Date of appointment Address phone/email  Address phone/email  Mr. A. K. Setni, Sr. Geologist M.SC(Geology), 19 Years experience, Raikela & Tantra Iron Mines Penguin Trading & Agencies Ltd; AT-Raikela, PO-Dengula-770048 DIST-Sundargarh (Odisha). Ph. 9438374458 Email ID: penguinbbl@gmail.com Date of appointment: 14.08.2014	
Whether Geologist and Mining Engineer appointed in mines satisfy the rule 42 & carrying out their duties as Yes per rule 43 & 44.	
Review of Mining Plan along with Progress Mine Closure Plan (PMCP) 5 years i.e. 20 to 2025-26 vide letter no. RMP/A/19-Date of Approval of Review of Mining Plan/Modified ORI/BHU/2020-21, Dated. 06.11.2020.  Mining Plan with five-year period and specific condition in approval letter, if any.  with Progressive Mine Closure Plan (4 years).  BBS/SNG/IRON/2201/MRMP/2022-23, Date of Approval Plan along with Progressive Mine Closure Plan (4 years).	21-22 ng ars)
Review of Mining Plan along with Progres Mine Closure Plan (PMCP) 5 years i.e. 20 to 2025-26 vide letter no. RMP/A/19- Date of Approval of Scheme of Mining/Modified Scheme of Mining with five-year period and specific condition in approval letter, if any.  With Progressive Mine Closure Plan (4 years) i.e. 2022-23 to 2025-26 vide letter no. BBS/SNG/IRON/2201/MRMP/2022-23, Date of Mining Plan along with Progressive Mine Closure Plan (4 years) i.e. 2022-23 to 2025-26 vide letter no. BBS/SNG/IRON/2201/MRMP/2022-23, Date of Mining Plan along with Progressive Mine Closure Plan (4 years) i.e. 2022-23 to 2025-26 vide letter no. BBS/SNG/IRON/2201/MRMP/2022-23, Date of Mining Plan along with Progressive Mine Closure Plan (4 years) i.e. 2022-23 to 2025-26 vide letter no.	21-22 ng ars)
31 Mineral(s) granted in lease and proved for mining Iron Ore (Hematite)	$\overline{}$
32 Method of Mining(Opencast, Underground) Opencast	
33 Category (Fully Mechanized, Others or Manual) Fully Mechanized	
34 Captive/Non Captive Non Captive	
35 Environment Clearance grant date & limit of EC 2.592 Million Tonne/Annum	
2.592 Million Tonne/Annum , Valid up to	

#### **Exploration**

S.N.	Item	Proposals (FY 2023-24)	Actual work	Remarks
1a	Backlog of previous year (2020-21)& (2021-22)	16 Nos	53 Nos	Cumulatively 203 boreholes were drilled with a total
1b	Exploration over lease area for Geological axis 1 or 2.		Geological Axis 1 (49.372 Ha)	meterage of 12094 mts as per the AR for 2023-24
	Exploration Agency &		M/s Gems Project Pvt.	

1c	Expenditure in lakh Rupees during the year		Ltd. Expenditure-203.43 lakhs.	
1d	Balance area to be explored to bring Geological axis in 1 or 2		Total area comes under G1 Categories.	
1e	Balance reserves as on 01.04.2023 (in MT)	111-30396966.43 MT 211-7540015.7 MT		
		The strike of the ore body/host rock is along NE SW dipping due West. The dip angle varies from 45 degree to 81 degree. These normally confirm to the regional trend of the rock bed.		

### <u>Development</u>

S.N.	Item	Proposals (FY 2023-24	Actual work	Remarks
2a	Location of development w.r.t. lease area	Raikela: W 107 - E 219 N 60 - S 323 Joint Mining: E 41 – E 328	Raikela: W 99 - E 107 S 69 – S 323 Joint Mining: E 41 – E 328 N 328 – N 500	Violation of Rule 11(1) has been pointed out to the lessee for not carrying out development as proposed.
2b	Separate benches in topsoil, overburden and mineral (Rule 15)	Separate Benches in Mineral Proposed	Separate Benches in Mineral made.	
2c	Stripping ratio or ore to OB ratio (T/T)	1:0.378	1:0.038	No Significant Change
2d	Quantity of topsoil generation in m <sup>3</sup>	No Top Soil generation proposed during reporting year.	Not Applicable	
2e	Quantity of overburden/waste generation in m <sup>3</sup>	(FY 2023- 2024) 51073.91 Cum.	, I 1/2600 CUM I	
2f	General remarks of inspecting officer on development of pit w.r.t. type of deposit etc.	The mine workings were confined to 2 pits viz Raikela and Joint Mining Pit. The development was carried out within the proposed grids as per the approval on the date of inspection.		

## Exploitation

S.N.	Item	Proposals (FY 2023-24)	Actual work	Remarks
3a	Number of pits proposed for production	2 Nos.	2 Nos.	Dimensions of Pits Raikela=290 x 173 m. Top R.L=834.78 m.& Bottom R.L=784.00 m. Joint Mining= 272 x 167 m. Top R.L=822.00 m.& Bottom R.L=768.01 m.
3b	Quantity of ROM production	(FY 2023-24) 27,00,000 MT.	(FY 2023-24) 22,16,025 MT.	Violation of Rule 11(1) has been pointed out to the lessee for not achieving proposed production.
	Recovery of	100%	99.95%	İ

3c	salable/usable mineral from ROM production			
3d	Quantity of mineral reject generation	10,22,509.33 MT	5,16,000.00 MT	
3e	Grade of mineral reject generation and threshold value declared	45%-55% Fe. Threshold value declared-45% Fe.	45%-55% Fe. Threshold value declared-45% Fe.	
3f	Quantity of sub-grade mineral generation	10,22,509.33 MT	5,16,000.00 MT	
3g	Grade of sub-grade mineral generation	45%-55% Fe.	45%-55% Fe.	
3h	Manual / Mechanized method adopted for segregating from ROM	Mechanized method proposed for segregating from ROM	Mechanized method adopted for segregating from ROM	
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	No beneficiation study proposed	No beneficiation study carried out.	
3j	Provision of drilling & blasting in mineral benches	Drilling and Blasting proposed in mineral benches.	Drilling and blasting were carried out in mineral benches.	The Holes has been drilled in only hard Iron Ore patches with burden & spacing of 2.5 m X 3.0 m respectively. Hole depth was 6.6 m & as per requirement by seeing the bench height. The holes has been blasted by using of slurry explosive like Nova prime, Nova column, Solar gel & solar prime which will be fitted to the E.D. The E.D. has been connected to the exploder by the help of electric cable for ignition.
3k	Provision of mining machinery in mineral benches	Use of HEMMs was proposed in Mineral Benches.	Mechanized O/C mining was carried out engaging HEMMs in the mine.	Mining was carried out by Shovel (2.3 m3) Dumper (14 Cu.m) combination.

31	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Proposed Bench Height-6 m and width-12 m	Bench Height-6 m and Bench width-10- 12 m maintained	
3m	Total area covered under excavation/pits	30.95 Ha	30.66 Ha	
3n	Ore to OB ratio for the pit/mine during the year(T/T)	1:0.378	1:0.038	No Significant Change
30	Total area put in use under different heads at the end of year	Other to Specify:4.32 Ha	Mining-30.66 Ha OB/Waste-6.65 Ha Mineral Storage-4.41 Ha Infrastructur-0.17 Ha Road-2.28 Ha Mineral Separation Plant-0.07 Ha Other to Specify:5.132 Ha (Safety Zone-2.989 Ha Orchard Plantation- 0.06 Ha Mineral Stacking Area-2.083 Ha) Total-49.372 Ha	
	Production of ROM mineral during last five-year period, as applicable	Proposal	Achievement	
3р	Year- 2019-20	1078820.000 MT.	1029960.000 MT.	
Jp	Year- 2020-21	1079840.000 MT.	1078900.000 MT.	
	Year- 2021-22	1620150.000 MT.	1079201.502 MT.	
	Year- 2022-23	1800000.000 MT.	1799100.000 MT.	
	Year-2023-24	2700000.000 MT.	2216025.000 MT.	
	Total	8278810.000 MT.	7203186.502 MT.	
3q	General remarks of inspecting officer on method of mining etc.	Open-cast mining method with Shovel-Dumper combination was carried out. Deep hole drilling and blasting were carried out in OB and Mineral Benches.		

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

S.N	Item	Proposals	Actual work	Remarks
4a	' '	of OB & mineral	of OB & mineral reject carried out.	OB (Below45% Fe) Back filling and stacking of Mineral Rejects (Below 55% Fe) is being done separately.
	Location of topsoil, OB &	S 121 - S 309 E 305 - E 479 RL- 706M-754M Mineral Reject:	Back filled area: S 140 - S 294 E 358 - E 479 RL- 706M-751M Mineral Reject: 1)N 177 – N 260 E 254 – E 321	

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4b	mineral reject dumps	260 E 254 – E 321 RL- 805M-818M 2. N 51 – N 121 E 28 – E 118 RL- 818M-842M	RL- 805M-811M 2)Nil	
4c	Number of dumps within lease area and outside the lease area	Within lease area: One Outside Lease Area -Nil	Within lease area One. Outside Lease Area -Nil	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside UPL	Outside UPL	S 140-S 294 E 358-E 479
4e	Number of active & alive dumps	01	01	S 140 - S 294 E 358 - E 479 RL- 706M-751M
4f	Number of dead dumps	01	01	S 480 - S 694 E 380 - E 509
4g	Number of dumps stabilized	01	01	After making terrace, the OB Dump is being coir matting done with grass seeding, then it is being plantation done
4h	Whether Retaining wall or garland drain all along dumps are there	Retaining wall and garland drain proposed all along the dump.	Retaining wall and garland drain were constructed all along the dump.	
4i	Length of Retaining wall or garland drain all along the dump	Retaining wall: 180 m Garland drain 50 m	Retaining wall: 245 m Garland drain 150 m	

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		Repair		Repair,		Location of Settling pond.
		Maintenance	of old	Maintenance	and	1) S 734 - S 750
		Settling pond.		also desalting	done	E 502 - E 530
				of previ	ously	2) S 622 - S 648
				constructed 9	Nos	É 360 - E 384
				of old Settling r	ond.	3) S 542 - S 560
				01		É 380 - E 394
						4) S 140 - S 150
						É 424 - E 440
4i	Number of settling ponds					5) S 146 - S 160
′	]					É 504 - E 520
						6) S 204 - S 220
						É 508- E 518
						7) S 416 - S 428
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						,
						*
Specif	ic comments of inspecting	0	-! 1		.:	
officer on waste dump		Overbuiden, milieral and milieral reject management is broadly as				
	•	per proposal are being carried out as per the approved proposals.				
officer	ic comments of inspecting on waste dump gement				eject n	

S.N.	Item	Proposals	Actual work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Full Extraction proposed	Full Extraction done	Core drilling has been done on the area and found that there is no ore exists, so back filling has been done.  BH No-38, N21 <sup>0</sup> 52′31.1′′ E85 <sup>0</sup> 11′05.1′′ BH No-54, N21 <sup>0</sup> 52′35.9′′ E85 <sup>0</sup> 10′04.3′′ BH No-57, N21 <sup>0</sup> 52′34.6′′ E85 <sup>0</sup> 11′01.8′′ BH No-59, N21 <sup>0</sup> 52′38.1′′ E85 <sup>0</sup> 10′04.6′′ BH No-61, N21 <sup>0</sup> 52′38.4′′ E85 <sup>0</sup> 11′01.6′′ BH No-97, N21 <sup>0</sup> 52′35.4′′ E85 <sup>0</sup> 10′57.1′′ The above Bore Holes has been done on the area and found that there is no Ore exist.so back filling has been done.
5b	Area under backfilling of mined out area	0.77 Ha	0.25 Ha	
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 32)	No Top Soil Generation proposed during reporting year		
5d	Total area fully reclaimed & rehabilitated	Partly: 0.25 Ha.	Partly: 0.25 Ha	
5e	General remarks of inspecting officer on backfilling, reclamation etc	Backfilling was carried Violation of Rule 11(1 for not carrying bad Quarry between 706 been proposed to be Mining Plan which is a	) was not pointed ckfilling proposed and 754 mRL as c completed in tl	l out to the lessee d in the Raikela s the backlog has

### **Progressive Mine Closure Plan**

S.N	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Yes	Yes, Annual report on PMCP submitted on dtd.30.06.2024	
	Area available for rehabilitation			

6b	(ha).	0.25 Ha	0.25 Ha	
6c	afforestation done (ha).	0.25 Ha	0.25 Ha	
6d	No. of saplings planted during the year	800	1200	
6e	Cumulative no. of plants	108060	108060	
6f	Any other method of rehabilitation	No other method of rehabilitation proposed	No other method of rehabilitation carried out	
6g	Cost incurred on watch and care during the year	Rs. 16,000.00	Rs. 68,400.00	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	50m x 50m x 6m	50m x 50m x 6m	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	50m x 50m x 6m	50m x 50m x 6m	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	0.25 Ha	0.25 Ha	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Nil	Nil	
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Nil	Nil	
	Compliance of rehabilitation of waste land within lease (i)afforestation	800 Nos	1200 Nos	
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	0.25 Ha	0.25 Ha	
60	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Back filling	Back filling	

		Environmental		Env monitoring
6р	Compliance of environmental monitoring (core zone and buffer zone)	Monitoring proposed in Core and buffer zone proposed as per M OEFCC and SPCB guidelines.	Monitoring was carried out for air, water, noise on qtrly basis.	is being carried out by third party. Name-Cleenviron Private Limited and all Environmental Parameters are within prescribed limits
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	PMCP activities we	re carried out as per	the proposal.

#### **Mineral Conservation**

ė		idi Gonoci vation					
	S.N.	Item	Proposals	Actual work	Remarks		
		ROM Mineral dispatch or grade-	ROM Mineral dispatch or grade-wise sorting within lease area				
	7b	Method of grade-wise mineral	Mechanical Method of	Mechanical Method of			

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	sorting i.e. manual or mechanical	· ·	grade-wise mineral	
		sorting proposed	sorting carried out.	
7c	Different grade of mineral sorted out at mines	CLO, Lumps and Fines proposed to be sorted out from the mines.	CLO, Lumps and Fines	45-51% Fe 51-55% Fe Fines: 45-51% Fe- 51-55% Fe- 55-58% Fe- 68-62% Fe- 62-65% Fe- 65% & Above- CLO: -62% Fe Any Size 62-65%(5- 18) Fe-
				62-65% Fe(10-40)
7d	,		No Beneficiation process carried out	
7e	officer on Mineral conservation & beneficiation issues	wise sorting by scree	rried out by the lessee e ning and crushing within CLO are segregated and	lease area.

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S.N.	Item	Proposals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	·	generated.	Top soil purchased from outside for plantation and back fill stabilization.
8b	Concurrent use or storage of topsoil	Not Applicable	Not Applicable	

8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumps for overburden, waste rock, rejects and fines proposed	overburden, waste rock, rejects and	Co-ordinates Back filling:
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Use of overburden, for restoring the land to its original use	Backfilled has been done over 4.38 Ha.	

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		proposed		
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc.)	No such proposal	Not Done	
8f	Baseline information on existence of plantation & additional plantation done (Rule 41)	800 Nos	1200 Nos	
8g	Survival rate		81%	
8h	Water sprinkling on roads to control airborne dust	haul roads to suppress the dust.	04 Water tankers deployed for water sprinkling on roads to control airborne dust. 850 m fixed water sprinkling system installed at Crusher & Screen plants and wet drilling system adopted for control airborne dust	
8i		as the lessee	had carrie	I mines area was well maintained ed out afforestation and other asures were in place.

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## Compliance of Rule 45

S.N.	Item	Observat	Remarks	
9a	Status of submission of Monthly and Annual returns	M.R. Submitted upto A.R. submitted u 30.06.2024.	,	
	Item	Information as per AR	Observation	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Sh. K.K. Sahoo	Mining Engineer: Sh. K.K. Sahoo Mining Geologist: Sh. A.K. Sethy Mines Manager: Sh. T.D. Behera	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	30.95 Ha. Reclaimed area: 2.60 Ha.	Area under PIT: 30.66 Ha. Reclaimed area: 2.60 Ha. Back fill area-4.375 Ha.	

		Ha.	Dump: 2.275 Ha.	
9d	Scrutiny of Annual return on afforestation	Dump: 2.275 Ha. Within Lease: 1200 @ 81% Survival Rate Outside Lease 5500 @ 80% Survival Rate	Appears to be correct	
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	45%-55% Fe -	Appears to be correct	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Fines: 45-51% Fe-197150 MT 51-55% Fe- 5,16,000.00 MT 55-58% Fe- 7,57,100.00 MT 58-60% Fe- 72,298.390 MT 60-62% Fe- 95,104.970 MT 62-65% Fe- 3119.587 MT 65% & Above- 671.400 MT CLO: -62% Fe Any Size - 7,49,828.598 MT 62-65%(5-18) Fe- 13,008.265 MT 62-65% Fe(10-40)- 8893.790 MT	Appears to be correct	
9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Sale Value- Rs.892,53,72,198.01 Ex-Mines Price- 3648.75 Cost of Production: Rs. 2723.32 Sale price of Fines; Fe 51%-55%: Rs 2492.43 Fe 55%-58%: Rs 3498.26 Fe 58%-60%: Rs 3775.21 Fe 60%-62%: Rs 4309.48 Fe 62%-65%: Rs 4930.27 Fe 65% & above: Rs 6000.00 Sale price of CLO; -62% Fe(CLO any size-Rs 4226.75 62-65% Fe (5-18mm size CLO)-Rs 6030.00 62-65% Fe (10- 40mm size CLO)-Rs 6030.00	Appears to be correct	

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9h	Scrutiny of Annual return on fixed assets	Rs. 4,66,67,258.00	Appears to be correct	
9i	Scrutiny of Annual return on mining machineries	Excavator-18 Dumper-16 Loader-13 Dozer-01 Rock Breaker-04 Mob. Crusher-2 Fix Crusher-01 Screen Plant-03 Water Tanker-03 LMV-09 Drill Machine-01 Grader-01	Appears to be correct	