

**INDIAN BUREAU OF MINES
MINERALS DEVELOPEMMENT AND REGULATION DIVISION**

MCDR INSPECTION REPORT

Ajmer regional office

Mine file No : RAJ/JHN-1/CU- 1

Mine code : 14RAJ17002

- (i) Name of the Inspecting : **26**) **Nishant kumar rao**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Sh Jagdish Sodha Mines Manager, Sh Gopal Rathi AGM geo
Official with
Designation
- (iv) Date of Inspection : 06-NOV-24
- (v) Prev.inspection date : 09-JUL-19

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **KHETRI**
- (b) **Registration NO.** : **IBM/6381/2011**
- (c) **Category** : **A Mechanised**
- (d) **Type of Working** : **Underground**
- (e) **Postal address**
- State : **RAJASTHAN**
- District : **JHUNJHUNU**
- Village : **BANWAS**
- Taluka : **KHETRI**
- Post office : **KHETRINAGAR**
- Pin Code : **333504**
- FAX No. : **01593-20002/20038**
- E-mail : **ROOT.@HCLKCC.RAJ.NIC.IN**
- Phone : **01593-20065/20006**
- (f) **Police Station** : **Khetrinagar**
- (g) **First opening date** : **15-OCT-63**
- (h) **Weekly day of rest** : **SUN**
2. **Address for** : **M/S HINDUSTAN COPPER LTD**
correspondance : **POST KHETRINAGAR 333504**
: **DIST. JHUNJHUNU**
3. (a) **Lease Number** : **RAJ0449**
- (b) **Lease area** : **398.7**
- (c) **Period of lease** : **20**
- (d) **Date of Expiry** : **23-FEB-13**
4. **Mineral worked** : **COPPER ORE** **Main**

5. Name and Address of the

Lessee : HINDUSTAN COPPER LIMITED
 KHETRI COPPER COMPLEX
 KHETRI NAGAR JHUNJHUNU
 RAJASTHAN
 Phone:01593-20065-20006
 FAX :01593-20002

Owner : Shri S.K. Bhattacharya
 1-Ashutosh Chowdhury Avenue
 Kolkata 700019 JHUNJHUNU
 RAJASTHAN
 Phone: 033 22817138
 FAX : 033 22832478

Agent : S. DEY
 M/S Hindustan Copper Ltd;
 Khetrinagar, Jhunjhunu,
 Rajasthan JHUNJHUNU
 RAJASTHAN
 Phone: 01593-220001
 FAX : 01593-220002

Mining Engineer

Name : Shri S K Purohit, Full Time
 Qualification : BE (Mining)
 Appointment/ : 07-NOV-12
 Termination date

Geologist

Name : Shri Nagesh Kumar Rajpurohit, Full Time
 Qualification : MSc(Geology)
 Appointment/ : 08-APR-14
 Termination date

Manager

Name : Ghanshyam Das Gupta
 Qualification : B. Tech (Mining)
 Appointment/ : 06-APR-18
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Existing rule 11 MCDR1988	19-JAN-95
		Existing rule 11 MCDR1988	30-JUL-04
		Mining Scheme rule 12 MCDR1988	22-OCT-08
		Modif.approved Mining Scheme	17-AUG-12
		Renewal under rule 24 MCR1960	20-NOV-12
		MP review under 17(1) MCR 2016	28-NOV-17

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Proposal for 2023-24:4800 m , No. of BH- 56	Actual for 2023-24:8017.90 m, No. ofBH-70	ok
1b	Exploration over lease area for geological axis 1 or 2	Exploration Program for Geological axis Glduring F.Y. 2023-24: 5950 to 6050Lat. 120 to 60mRL,5850 to 5950 Lat.: 60 to 0mRL,2770 to 2710Lat. 120 to 60mRL, 3430 to 3370 Lat. 0 to (-)60mRL Exploration Program for Geological axis Glduring F.Y. 2023-24: 5950 to 6050Lat. 120 to 60mRL,5850 to 5950 Lat.: 60 to 0mRL,2770 to 2710Lat. 120 to 60mRL, 3430 to 3370 Lat. 0 to (-)60mRL	Exploration ProgramforGeological axis Glduring F.Y. 2023-24: 5750 to 5900 Lat. 180 to 120 mRL (S-28, S-29), 5650 to 5800Lat. 120 to 60mRL (S-25 to S- 29), 2890 to 3010 Lat. 120 to 60mRL, 3520 to 3410 Lat. 60 to 0mRL	Impact due to less mine development
1c	Exploration Agencies and Expenditure in lakh rupees during the year	M/s. SMS Limited, M/s. Asha EngineeringWoks, M/s Hardrock Rohita Engineering Expenditure is not in proposal	SMS Limited 64.91 Lakh,&M/s. Asha Engineering Works 7.73 Lakh, M/s Hardrock Rohita Engineering 126.96 Lakh	The drilling agencies aredeployed for exploration in underground mine as per Approved Mining Plan

1d	Balance area to be explored to bring Geological axis in 1 or 2	Balance area to be explore for Geological axis G1 6050 to 6150Lat. 120 to 60mRL, 5950 to 6050 Lat.: 60 to 0mRL, 2680 to 2620 Lat. 120 to 60mRL, 3340 to 3280 Lat. 0 to (-)60mRL	Balance area is going to explore in current F.Y.2024-25 for Geological G-1 axis. 5800 to 6150Lat. 120 to 60mRL (S-30 to S-36),2980 to 2620 Lat. 120 to 60mRL, 3280 to 3250 Lat. 60 to 0mRL, 3520 to 3280 Lat. 0 to - 60mRL	As the mining in underground, the exploratory drilling from surface is done previously within the lease area, Presently there is definition drilling is going on different level at 30 mtr interval for geological axis G 1 exploration
1e	Balance reserve as on 01/04/20	47.46 Million tons with 1.46 % grade	46.47 million tons with 1.42 % grade	Balance ore reserve estimated on 01.04.2024 is46.47 million tones @ 1.42 % Cu,after depleted production of F.Y. 2023-24
1f	General remarks of inspecting officers on geology, exploration etc			ok

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	180mRL-0 m 120mRL- 180m 60mRL-2660m 0mRL-2900m (-)60mRL-960 m Others- 516 m Total-7216 m	180mRL-24.30m 120mRL- 809.20m 60mRL-1520.48m 0mRL-1429.56m (-)60mRL-0 m Others- 0 m Total-3783.54	Low availability of contractor's loading & Hauling equipments.

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	NA	NA	ok
2c	Stripping ratio or ore to OB ratio	NA	NA	
2d	Quantity of topsoil generation in m3	NA	NA	U/G mines
2e	Quantity of overburden generation in m3	52064 cub mtr of waste generated was planned in development	29026 cub mtr	The waste material is generating only from UG mine development and stope preparation activities. Less quantity of waste generation due to less mine development.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			Poor development due to poor availability of jumbo, LHD, LPDT as well hoisting system

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
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3a	Number of pit proposed for production	Total no.of Proposed Stopes 21 Nos. In the F.Y. 2023-24	Total no. of running stopes is 17 in FY 2023-24 as follows:Khetri 60ML S VI - 15-14& Cr. S VI - 15-14A S VI-16-13 S VI-17-13,S VI-17-11 Khetri 0ML S VII -10-11 S VII 09-03 S VII 08-03 P VII 08-03/09-03	As planned development was not done so stope can not be prepared
		Khetri 60ML S VI - 15-14A S VI 17-11 S VI 17-13 PVI-15-14/16-13 & Cr S VI-18-12 & Cr Khetri 0ML S VII -11-04 S VII -10-11 PVII 08-03/09-03 &Cr S VII N-12-12 S VII N-12-14A S VIIN -12-14 P VII N 12-12/12-14A P VII N 12-14/12-14A P VII N 9-11/11-12 Banwas 120ML BS V- 14-14 BS V- 14-16 BS V- 14-19	Banwas 120ML Cr.B V -12-14 Cr.B V -12-13 BS V- 14-14 BS V- 14-16 BS V- 14-19 Banwas 60ML S VI B-10-12 & NRP S VI B-11-11 & SRP S VI B-12-13	
		Banwas 60ML S VI B-13-13 S VI B-13-13A S VI B-10-12 & NRP S VI B-11-11 & SRP		
3b	Quantity of ROM mineral production proposed	1100000 tons	741584 tons	Due to poor availability of UG fleet
3c	Recovery of sailable/usable mineral from ROM production	100%	100%	The ROM treated at concentrate plant .

3d	Quantity of mineral reject generation	1734700 t	1169134 t	there is no proposal for mineral reject however milling of ROM from both Khetri and Kolihan generate tailing
3e	Grade of mineral rejects generation and threshold value declared.	0.1	0.102	The metal recovery is 90 % in concentrate ,The mineral reject from concentrate disposed as tailing
3f	Quantity of sub grade mineral generation.	NA	NA	No sub grade mineral generation in mine
3g	Grade of sub grade mineral generation	NA	NA	
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanical	Mechanical	The ROM material from underground mine is treated in the Concentrator Plant for milling and tailing from the ore beneficiation plant are pumped to tailing dam after thickening to more than 55% solids
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	NA	NA	
3j	Provision of drilling and blasting in mineral benches	Production Drilling: Dia :57mm, 115 mm, 165 mm drilling Development Drilling: Dia: 33mm, 54mm Blasting: PowderFactor: in ore development: 3.57 kg/m3, in Stope: 1.25 kg/m3	Production Drilling: Dia :57mm, 115 mm, 165 mm drilling Development Drilling: Dia: 33mm, 54mm Blasting: PowderFactor: in ore development: 3.57 kg/m3, in Stope: 1.25 kg/m3	OK

3k	Provision of mining machineries in mineral benches	Jackhammer, Drifters, Large Dia drilling machine, Jumbo drill, LHD, LPDT, Locomotive Rocker Shovel etc.	Jackhammer, Drifters, Large Dia drilling machine, Jumbo drill, LHD, LPDT, Locomotive Rocker Shovel etc.	OK
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	NA	NA	U/G Operation
3m	Total area covered under excavation/pits	0.0323 hect	0.0323 hect	Total 0.0323 Hect. area is put to use under opening of service & production shafts and decline.
3n	Ore to OB ratio for the pit/mine during the year.	na	na	
3o	Total area put in use under different heads at the end of year	56.23 hect	56.23 hect	
3p	Production of ROM mineral during the last five year period as applicable	Production for last five years in tons 2019-20: 908000t 2020-21 :1080000 t 2021-22: 1080000 t 2022-23: 1090000t 2023-24: 1100000t	2019-20:680005 2020-21:538463 2021-22 : 687873 2022-23: 707786 2023-24: 741584	Low production
3q	General remarks of inspecting officers on method of mining etc.			Poor development and production was achieved due to less availability of UG fleet and hoisting system

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
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4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	No top soil generation was proposed , the F.Y. 2023-24, The proposed waste material generation from UG is to be dump in underground- 28635 m3 At surface- 23429m3	Waste dump in UG is 19442 cub mtr and taken to surface was 9652 cub mtr	Less waste generation due to less mine development
4b	Location of topsoil, OB and mineral reject dumps	At Surface: Waste Dump No. 5 Lat. 3938-4463 Departure 1128-1270 Waste Dump No. 6 Lat. 4458-4924 Departure 1170-1409 Waste Dump No. 7 Lat. 4008-4316 Departure 1200-1270 In Underground: Old Stope No. P V B 09-13, S VII 02-11	Waste material from the underground mine is dumped as proposed locations on the surface Dump No. 5, 6 and 7as well as in Old Stope No. P V B 09-13 of 120mRL in Banwas Block and S VI 02-11 in 60mRL in Khetri Block of the Khetri underground mines.	ok
4c	Number of dumps within lease area and outside of lease area	8 no.	8 no.	Total 08 Numbers of Waste Dumps. No. 1 to 8 on surface within Mining lease area.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	na	na	
4e	Number of active and alive dumps.	3	3	Total 03 Numbers of Waste Dumps no. 5 to 7on surface are active dumps
4f	Number of dead dumps.	5 no.	5 no.	Total 5 numbers of waste dump no. 1 to 4 & 8 on surface are inactive dump.But not stablised
4g	Number of dumps established.	na	1	stablisation is under progress

4h	Whether Retaining wall or garland drain all along dumps are there.	yes	yes	Strengthening & Cleaning done of Retailing wall and garland drain along the waste dump
4i	Length of Retaining wall or garland drain all along dumps	na	na	1364 mretaining wall & 800 mtr garland drain already exist
4j	Number of settling ponds	1	1	
4k	Specific comments of inspecting officer on waste dump management			Watse generation is not achieved as propsoed due to less development as well dumps are not stablised .Instructed for making dump stblisation

Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Backfilling at surface is not practiced; however in underground mining method is waste is backfilled	19,442 m3backfilling is done , the waste material is dumped in underground Old Stopes	UG backfilling
5b	Area under backfilling of mined out area	Backfilling is not done; method is open stoping	Backfilling is not done; method is open stoping	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	nil	nil	
5d	Total area fully reclaimed and rehabilitated	na	na	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Waste generated was dump in ug ,at surface waste is dumped

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Annual report on PMCP submission	Annual report on PMCP is submitted with Annual Returns on 28.06.2024	PMCP kmz file is of year 2022 .Need to attache recent file for year 2023-2024.Also data not matching as given
6b	Area available for rehabilitation (ha) .	NA	NA	
6c	afforestation done (ha).	0.20 ha	0.20 ha	Area is not clear with PMCP kmz file upload
6d	No. of saplings planted during the year	200	200	
6e	Cumulative no .of plants		11760	
6f	Any other method of rehabilitation	na	na	
6g	Cost incurred on watch and care during the year	Not propsed		
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	S VII 02-11 (L*W*H):34*6*60	S VII 02-11 (L*W*H):34*6*60 in ug	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	na	na	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	na	na	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	na	na	

6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	na	na	
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	na	na	
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	na	na	
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	na	na	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Yes	Available	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			Kmz file is of 2022 year ,no. of sapling also not matching ,as well waste filled in different stopes

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	All ROM mineral is processed in HCL concentrator plant (1100000 Tones	All ROM mineral is processed in HCL concentrator plant(741584Tonnes)	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	mechanical	

7c	Different grade of mineral sorted out at mines.	no	no	
7d	Any beneficiation process at mines	No	No	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			As production is 741584 t with grade of 0.80% of Cu so same is treated at HCL mill located at Khetri where Kolihan mines ore also treated .Avg grade in concentrate is around 17-18 % which is being sold to other smelter like Hindalco and some concentrate being sold to foreign Switzerland

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	NA	NA	
8b	Concurrent use or storage of topsoil	NA	NA	Ug operation
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	08	08	Ug operation
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	NA	NA	

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	8	Total 8 no. of dump are there and 5 are inactive from which one number of dump stablisation work going on	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	600	600 no.	Total no. of trees at end of FY 2023-24 r within & around lease area
8g	Survival rate	No proposal	50%	
8h	Water sprinkling on roads to control airborne dust	50kld	40kld	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Dumps are haphazard and no proper stacking was visible as well plantation surviaval rate is low whihc is impact greenary

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly report is being submitted before 10 th of every month and AR submitted on 28/06/24	Submitted on time	ok
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining engineer :14, Diploma mining engineer :7, Geologist :3 Surveyor :1	There is shortage of Geologist and supervisory staff	

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Given total mined out area at end of financial year is 0.0323hec,waste disposal area is 14.69 ha,occupied by plant ,building,residential ,welfare building & roads is 38.308 ha,for mineral storage :3.20 ha	PMCP kml file is of year 2022 so also all layer require is not available.Also drone data uploaded was not right so refer back	
9d	Scrutiny of Annual return on afforestation	No. of tree planted within lease area is 200 ,outside lease 400,survival rate is 50,total no .of tree within lease is 6736 and outside lease 5024	ok	ok
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	0	0	-

9f	Scrutiny of Annual return on ROM stock and/or graded ore	Opening stock for the year for ROM was 0 and during year production was 741584 t with 0.88 % cu grade ,closing stock is 0 . For mill plant : Opening stock ws 645 t with 0.82 % cu and ore treated was 1224490 t concentrate obtained wsa 55356 t of 17.14 % cu & closing stock was 4026.025 t with 18.33 % grade	In this mill both Kolihan and Khetri ore being treated
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex mine price is 2645.13 rs/unit ,sale value is 287.85 cr to Hindalco and 298.2 cr to foreign and cost of production wsa 2645.13 rs/t	In cost of production the cost of milling is not being taken .
9h	Scrutiny of Annual return on fixed assets	At start of year rs 17361592 /aaddition during year is rs 2102710 depreciation during year is rs10155225 and closing is rs163309077	ok
9k	Scrutiny of Annual return on mining machineries	All machines detail is given	ok

Details of violations observed during current inspection and compliance position of violation pointed out

Violation observed			Show couse position		
Rule NO.	Issued on	Compliance on	Rule NO.	Issued on	Compliance on

Date :

(Nishant kumar rao)

Indian Bureau of Mines