

**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 : **K010**) **Kotriwal B.L.**
Officer and ID No.
- (ii) Designation : Regional Controller Mines
- (iii) Accompanying mine : Shri G. D. Gupta, Mine Mangaer, Shri S. K. Purohit, M
Official with
Designation
- (iv) Date of Inspection : 09-JUL-19
- (v) Prev.inspection date : 23-APR-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 : 395.07
- (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 02-JUL-20
 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	A total of 60 BH with 4800 mts of drilling has been proposed during the year 2018-19.	A total of 52 BH with 5279.85 mts of drilling have been completed during the year 2018-19.	Violation of rule 11(1) of MCDR, 2017 issued for less number of BHs. vide letter dated 02/08/2019.
1b	Exploration over lease area for geological axis 1 or 2	The exploration has been proposed from UG and from different levels i.e. 0 mRL, 60 mRL, 120 mRL, 180 mRL and 240 mRL. A total of 104 BH with 9600 mts of drilling have been proposed during plan period i.e. 2018-19 to 2019-20.	Exploration work has been carried out from UG as per proposal. A total of 52 BH with 5279.85 mts of drilling have been completed during the year 2018-19.	As per approved document entire lease explored under G1/G2 level of exploration. Drilling has been proposed to upgrade the resource and in-depth exploration.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	M/s SMS & M/s Asha Engineering Works. No specific proposal of expenditure.	Exploration work has been carried out by M/s SMS & M/s Asha Engineering Works. The expenditure occurred during the year was around 148.00 lacs.	NIL.
1d	Balance area to be explored to bring Geological axis in 1 or 2	Exploration work has been proposed from different levels to upgrade the resource and to explore ore zone in depth.	Exploratory drilling has been carried out to upgrade resource and to explore ore body in-depth.	NIL.
1e	Balance reserve as on 01/04/20	No specific proposal for reserve and resource on year to year basis.	As on 01/04/2019, the position of reserve is 48.66 million tonnes.	As per AR 2018-19.

1f	General remarks of inspecting officers on geology, exploration etc	Exploratory BH have been proposed to delineate and explore the ore zone in depth.	Exploratory BH have been drilled as per proposal to delineate and explore the ore zone in depth.	The ore zone is dipping vertical to sub-vertical. Hence, the proposal of exploration has been given to prove ore zone in depth.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	A total including horizontal and vertical development of 4780 mts has been proposed during the year 2018-19 at different levels like 120 mRL, 60 mRL, 0 mRL etc.	Against the proposed development, 4523.40 mts of the development has been achieved.	Violation of rule 11(1) of MCDR, 2017 for less development has been issued on dated 02/08/2019.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	No proposal of benches as mining g operations are proposed through UG mining method.	Not applicable.	NIL.
2c	Stripping ratio or ore to OB ratio	No proposals as operations are being carried out through UG method.	Not applicable in view of UG oiperations.	NIL.
2d	Quantity of topsoil generation in m3	No proposal of top soil generation as the operations is being carried out through UG mining method.	No top soil has been generated.	NIL.

2e	Quantity of overburden generation in m3	No proposal OB generation. However, a quantity of 29968 CuM of waste is proposed to generated during the reporting year.	During the year 25013 cuM of waste has been generated.	Less generation of waste is in account of less development. Violation of less development has been issued on 02/08/2019.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Mine development has been proposed at different level to produce Copper Ore. During the year 4780.00 mts of development has been proposed.	Mining operations are being carried out through UG method. During the year development of 25013.40 mts has been completed.	As the deposit is dipping vertical to sub-vertical and occurs at sub-surface. The UG mining method is suitable for exploitation of mineral.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	During the year 2018-19, a total of 24 stops have been proposed for production of copper Ore.	During the year production of Copper ore has been carried out from 16 stopes only.	Production of less number of stopes is in account of less development. Violation for less development issued vide letter dated 02/08/2019.
3b	Quantity of ROM mineral production proposed	9,08,000 Tonnes (Khetri and Banwas block).	During the year 7,78,321 Tonnes of ROM has been produced.	Less production is in account of less development.
3c	Recovery of sailable/usable mineral from ROM production	Entire ROM is proposed to beneficiation. Hence, entire ROM of 9,08,000 Tonnes (Khetri and Banwas block) is usable.	During the year 7,78,321 Tonnes of usable ROM has been produced.	NIL.
3d	Quantity of mineral reject generation	No proposal of Mineral reject generation during the year 2018-19.	No mineral reject has been generated during mineral excavation.	NIL.

3e	Grade of mineral rejects generation and threshold value declared.	No threshold value has been declared in case of Cu Ore. No specific proposal of grade i.r.o. Mineral Reject. No proposal of Mineral reject generation.	A tailing quantity of 1243105.00 tonnes having grade 0.11 % Cu has been reported as mineral reject.	NIL.
3f	Quantity of sub grade mineral generation.	No proposal of Sub-grade ore during the year 2018-19.	No Sub-grade ore has been generated during the year 2018-19.	NIL.
3g	Grade of sub grade mineral generation	No proposal.	Not applicable.	NIL.
3h	Manual / Mechanised method adopted for segregating from ROM	No specific proposal of segregation of mineral from ROM. Entire ROM is subject to the beneficiation.	Entire ROM is being beneficiated.	NIL.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal of analysis or beneficiation study. Proposed to beneficiate entire ROM through existing beneficiation facility within lease area.	Beneficiation of ROM is being carried out as per proposal.	NIL.

3j	Provision of drilling and blasting in mineral benches	No proposals of drilling and blasting on mineral benches as operations are proposed through underground mining method. The drilling and blasting proposed in underground is as follows: Drilling pattern in ore- Burn Cut method of development, Drilling pattern in Stopes- Ring/parallel holes drilling.	Drilling and blasting for ore production and level development is being carried out as per proposal.	NIL.
3k	Provision of mining machineries in mineral benches	Not applicable as operation are proposed through UG mining method. The mining machineries proposed in Ug are LHD, LPDT, Locomotive, Mine Cars, Explosive Van, Rock Drill, Blast Hole Drill, Pumps, Air Compressor, and Ventilation Fan etc.	The mining machineries has been deployed in UG as per proposal.	NIL.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Not applicable as operation are proposed through UG mining method.	Not applicable.	NIL.
3m	Total area covered under excavation/pits	Total area under excavtion is 0.0323 Ha.	Total area under excavtion is 0.0323 Ha.	NIL.

3n	Ore to OB ratio for the pit/mine during the year.	Not applicable as it is UG Mine.	Not applicable as it is UG Mine.	NIL.
3o	Total area put in use under different heads at the end of year	As per approved RMP dated 28/11/2017, total area put under different heads at the end of the plan period i.e.2019-20 is 56.23 Ha.	The area put to utilized under different heads as on 01/04/2019 is 54.89 Ha.	NIL.
3p	Production of ROM mineral during the last five year period as applicable	2014-15 : 718000 2015-16 : 941000 2016-17 : 1000000 2017-18 : 1000000 2018-19 : 908000	2014-15 : 409946 2015-16 : 562042 2016-17 : 540582 2017-18 : 580107 2018-19 : 778321	All figures in metric tonnes. Less production in comparison to proposed production is in account of less development and not having stopping permission.
3q	General remarks of inspecting officers on method of mining etc.	The method mining has been proposed underground. Blast hole stoping method has been proposed to produce ore from stopes.	UG mine method is being practiced at mine. Stopping is being carried out through Blast hole stoping method.	Blast hole stoping method is a variation of sublevel stoping method.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	No proposal of top soil and Mineral Reject generation. OB/waste is proposed to dump separately.	Top soil and Mineral Reject has not been generated. Waste generated during the year has been dumped separately.	NIL.

4b	Location of topsoil, OB and mineral reject dumps	No proposal of top soil and Mineral Reject generation. OB/waste is proposed to dump at existing waste dump-05.	Top soil and Mineral Reject has not been generated. Waste generated during the year has been dumped at designated place.	NIL.
4c	Number of dumps within lease area and outside of lease area	8 number of dumps within lease area. No dump outside lease area.	8 number of dumps within lease area. No dump outside lease area.	NIL.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable as it is UG mine.	Not applicable.	NIL.
4e	Number of active and alive dumps.	As per approved document dated 28/11/2017, two dumps are proposed to be active.	Found to be as per proposal.	NIL.
4f	Number of dead dumps.	6 nos.	6 nos.	NIL.
4g	Number of dumps established.	No proposal.	Not applicable.	NIL.
4h	Whether Retaining wall or garland drain all along dumps are there.	No proposal of re retaining wall and garland drain during the year 2018-19.	Retaining wall and garland drain has not been observed all along the waste dumps.	Violation of rule 12(1) of MCDR, 2017 has issued vide letter dated 02/08/2019.
4i	Length of Retaining wall or garland drain all along dumps	No proposal during the year.	Not applicable.	NIL.
4j	Number of settling ponds	No proposal during the year.	Not applicable.	NIL.
4k	Specific comments of inspecting officer on waste dump management	There is only one existing 8 waste dump in leas area. Dumping of the waste has been proposed over existing waste dump 05.	Dumping of the waste is being carried out over existing dump as per proposal. Retaining wall and garland drain has not been observed along the dump.	All the dumps are found adjacent to each other. Retaining wall and garland drain has not been observed at many places. Hence, violation of rule 21(1) of MCDR, 2017 issued vide letter dated 02/08/2019.

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/dumping of waste in U/G stopes has been proposed.	Backfilling/dumping of waste in U/G stopes has been carried out as per proposal. The entire voids are not backfilled.	NIL.
5b	Area under backfilling of mined out area	Not applicable as it is UG Mine. However, backfilling/dumping of waste in U/G stopes has been proposed.	Backfilling/dumping of waste in U/G stopes has been carried out as per proposal. The entire voids are not backfilled.	NIL.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal of top soil generation during the year 2018-19.	No top soil has been generated during the reporting year.	NIL.
5d	Total area fully reclaimed and rehabilitated	An area of 5.0 ha has been proposed to rehabilitate by the way of plantation.	Around 5.0 Ha areas has been rehabilitate by the way of plantation.	NIL.
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Backfilling/dumping of waste in U/G stopes has been proposed. No proposal of full reclamation and rehabilitation of any area.	Backfilling/dumping of waste in U/G stopes has been carried out as per proposal. The entire voids are not backfilled.	NIL.

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).	As per rule 26 of MCDR, 2017 holder of mining lease shall submit PMCP before 1st day of July every year.	PMCP report for the year 2018-19 has been submitted.	NIL.

6b	Area available for rehabilitation (ha) .	As per approved document dated 28/11/2017, an area of 5.0 ha was has been proposed for rehabilitation .	Plantation work has been carried out over proposed area.	NIL.
6c	afforestation done (ha).	As per approved document dated 28/11/2017, an area of 5.0 ha was has been proposed for afforestation.	Plantation work has been carried out over proposed area.	NIL.
6d	No. of saplings planted during the year	During the year 1500 number plants within lease area and 500 plants outside lease area.	During the year 1400 number plants within lease area and 400 plants outside lease area has been planted. Plantation work was in progress to completed backlog.	NIL.
6e	Cumulative no .of plants	As per approved document dated 28/11/2017, cumulatively it is proposed to plant 4000 number of plant during 2018-19 to 2019-20.	During the year 1400 number plants within lease area and 400 plants outside lease area has been planted. Remaning work is in progress.	NIL.
6f	Any other method of rehabilitation	Other than plantation, no specific proposal of any other method of rehabilitation .	Not applicable.	NIL.
6g	Cost incurred on watch and care during the year	3 lacs.	2.1 lacs.	NIL.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Voids of 23100 m3 of UG stops available for backfilling.	Voids of 23468 m3 has been backfilled.	NIL.

6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Voids to be filled by 22476 CuM of waste.	Voids filled by 23468 CuM of waste.	NIL.
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	No proposal.	Not applicable.	NIL.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal.	Not applicable.	NIL.
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	Other than plantation, no specific proposal of any other method of rehabilitation	Plantation work has been carried out.	NIL.
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	No proposal of rehabilitation of waste land.	Not applicable.	NIL.
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	No proposal of rehabilitation of waste land.	Not applicable.	NIL.
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	No proposal of rehabilitation of waste land.	Not applicable.	NIL.

6p	Compliance of environmental monitoring (core zone and buffer zone)	Provision of environment monitoring stations has been given in the Core and Buffer zone.	Environment monitoring parameters are found to be within permissible limit.	NIL.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	No specific proposal.	The lessee's conduct towards implementation of proposals of progressive mine closure plan is satisfactory.	To improve the aesthetic beauty of the lease area planation work is being carried out.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	No proposal of grade wise sorting of ROM. Entire ROM is proposed to feed beneficiation.	ROM is being feed to the beneficiation plant. The beneficiation plant is located within the lease area.	NIL.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Entire ROM is proposed to feed beneficiation.	ROM is being feed to the beneficiation plant.	NIL.
7c	Different grade of mineral sorted out at mines.	No proposal of grade wise sorting.	Not applicable.	NIL.
7d	Any beneficiation process at mines .	A 2.4 MTPA beneficiation plant consisting of Crushing, grinding, flotation cell, Copper concentrate thickening, filtration section, dewatering etc. exist within the lease area.	Beneficiation is being carried out through exiting beneficiation plant withion lease area.	NIL.

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Entire ROM proposed to feed to the beneficiation plant.	ROM is being feed to the beneficiation plant. The beneficiation capacity of the plant is 2.4MTPA.	As such there is no issue regarding mineral conservation.
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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No occurrence of top soil has been anticipated due to underground mining operation.	No top soil has been generated during the year 2018-19.	NIL.
8b	Concurrent use or storage of topsoil	No proposals as mining operations are being carried out through UG.	Not applicable as no proposal.	NIL.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumping of waste/Ob has been proposed. No proposal of generation of rejects and fines during 2018-19.	Waste has been dumped at its designated place.	NIL.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal of use of overburden/ waste rock for restoring the land to its original use. However, waste has been proposed to use in backfilling of stoped out area.	Waste generated during the year has been dumped partially over designated dump and partially disposed of in underground stoped out area.	NIL.

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	An area of 5.0 Ha areas has been proposed to rehabilitate during the year 2018-19.	Plantation work has been carried out as per proposal.	NIL.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	No specific information for existing plantation. During the year 2000 number saplings have been proposed to plant.	A total of 1800 number of saplings were planted. Backlog is being completed.	NIL.
8g	Survival rate	No specific proposal.	65 % within lease area and 50% outside lease area.	NIL.
8h	Water sprinkling on roads to control airborne dust	To control the air born dust particle, water sprinkling has been proposed over roads.	Water sprinkling has been observed during the mine inspection.	NIL.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	No specific proposal other than plantation.	The general aesthetic beauty in & around mine is satisfactory.	To improve aesthetic beauty, plantation work is being carried out.

Compliance of Rule 45:

Sl.No.	Item	Proposals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	As per rule 45 of MCDR, 2017, holder of mining lease should submitted Monthly and Annual return in prescribed format.	Monthly and Annual return of the year 2018-19 has been submitted.	NIL.

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Information of Mining Engineer, Geologist and Manager has been furnished.	Mining Engineer, Geologist and Mine Manager as per MCDR, 2017 has been appointed at the mine.	NIL.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Used for waste disposal-14.69 Ha, Occupied by plant, building, workshop, roads, plantation-37.72 Ha, Other-2.48 Ha, Total-54.89 Ha.	The details of land use furnished in AR appear to be correct.	NIL.
9d	Scrutiny of Annual return on afforestation	Information of plantation of 1400 sapling within lease area and 400 outside lease area has been furnished.	The details of afforestation furnished in AR appear to be correct.	NIL.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Mineral reject quantity of 1243105.00 tonnes have been furnished.	The quantity furnished under the Mineral reject is actually a quantity of Mill Tailing having grade 0.11% Cu.	NIL.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM closing stock: 32978.00 tonnes. No graded ore at mine.	The quantity of ROM furnished found to be in order.	NIL.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex mine price- Rs. 185459.39 per tonne, Cost of Production: Rs. 1784.49 per tonne.	The information furnished appears to be correct.	Violation for not furnishing Ex-mine price for Ore has been issued on dated 02/08/2019.
9h	Scrutiny of Annual return on fixed assets	The value of fixed asset furnished is Rs. 2291134950.00	The information furnished appears to be correct.	NIL.

9k	Scrutiny of Annual return on mining machineries	LHD, Dumper, Locomotive, Mine Cars, Explosive Van, Rock Drill, Blast Hole Drill, Water Tanker, Pumps, Air Compressor, Ventilation Fan etc.	The information furnished in respect of mining machineries found to be in order.	NIL.
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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
MCDR17	Rule 11(1)	26-JUL-19	03-DEC-19			
MCDR17	Rule 12(1)	26-JUL-19	03-DEC-19			
MCDR17	Rule 37(5)	26-JUL-19	03-DEC-19			
MCDR17	Rule 45(7)(a)	26-JUL-19				

Date :

(Kotriwal B.L.)

Indian Bureau of Mines