

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

MCDR INSPECTION REPORT

Ajmer regional office

Mine file No : RAJ/JHN-4/CU- 2

Mine code : 14RAJ17003

- (i) Name of the Inspecting : **K010**) **Kotriwal B.L.**
Officer and ID No.
- (ii) Designation : Regional Controller Mines
- (iii) Accompanying mine : Shri U. B. Bhatt, Mine Manager, Shri A.K. Sharma, Min
Official with
Designation
- (iv) Date of Inspection : 08-JUL-19
- (v) Prev.inspection date : 06-AUG-18

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **KOLIHAN**
- (b) **Registration NO.** : **IBM/6381/2011**
- (c) **Category** : **A Mechanised**
- (d) **Type of Working** : **Underground**
- (e) **Postal address**
- State : **RAJASTHAN**
- District : **JHUNJHUNU**
- Village : **KOLIHAN NAGAR/KHETRI**
- Taluka : **KHETRI**
- Post office : **KHETRI**
- Pin Code :
- FAX No. : **01593- 20002**
- E-mail : **hclkcc@jpl.dot.net.in**
- Phone : **01593- 20001**
- (f) **Police Station** : **Khetrinagar**
- (g) **First opening date** : **24-NOV-66**
- (h) **Weekly day of rest** : **SUN**
2. **Address for** : **HINDUSTAN COPPER LIMITED,**
correspondance **KOLIHAN NAGAR, PO KHETRI**
3. (a) **Lease Number** : **RAJ0451**
- (b) **Lease area** : **163.23**
- (c) **Period of lease** : **20**
- (d) **Date of Expiry** : **23-NOV-16**
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 : Shri R.K. Shah
 Khetri Copper Complex M/s
 Hindustan Copper Limited
 Khetri Nagar, Jhunjhunu
 JHUNJHUNU RAJASTHAN
 Phone: 09414082953
 FAX : 01593 220002

Mining Engineer

Name : Mr. U.B. Bhatt, Full Time
 Qualification : BE Mining
 Appointment/ : 13-MAY-13
 Termination date

Geologist

Name : Dr. Gopal Rathi, Full Time
 Qualification : M.Sc. & Ph.D.(Geology)
 Appointment/ : 19-JUN-15
 Termination date

Manager

Name : Mr. S.D. Sharma
 Qualification : B.E. Mining
 Appointment/ : 01-JUN-13
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Existing rule 11 MCDR1988	06-JUN-95
		Mining Scheme rule 12 MCDR1988	29-NOV-02
		Mining Scheme rule 12 MCDR1988	15-JUN-07
		Modif.approved Mining Scheme	04-JAN-12
		Mining Scheme rule 12 MCDR1988	25-JUL-13
		Renewal under rule 24 MCR1960	01-APR-14
		MP modif under 17(3) MCR 2016	22-MAY-18

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	A total of 17 BH with 1850 mts of drilling has been proposed during the year 2018-19.	A total of 23 BH with 2166.00 mts of drilling have been completed during the year 2018-19.	NIL.
1b	Exploration over lease area for geological axis 1 or 2	The exploration has been proposed from UG at 64 and 124 mRL.	Exploration work has been carried out from UG as per proposal.	NIL.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal of exploration agency and expenditure.	Exploeariuon has been carried out by Asha Engineering Works and around 59 Lakhs including Taxes is the expenditure of drilling.	NIL.
1d	Balance area to be explored to bring Geological axis in 1 or 2	No specific proposal. 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.	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 14.02 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.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	A total including horizontal and vertical development of 3100 mts has been proposed during the year 2018-19 at different levels.	Against the proposed development, 2351.50 mts of the development has been achieved.	Violation for less development has been issued on dated 26/07/2019.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	No proposal of top soil, mineral reject and OB as the operations are being carried out through UG mining method	Not applicable as no proposal.	NIL.
2c	Stripping ratio or ore to OB ratio	No proposal as the Mineral is being produced through UG mining Method.	Not applicable Mineral is being produced through UG mining Method.	NIL.
2d	Quantity of topsoil generation in m3	No proposal as the Mineral is being produced through UG mining Method.	No top soil has been generated during the year 2018-19.	NIL.
2e	Quantity of overburden generation in m3	No proposal OB generation. However, a quantity of 81707 MT or 29181 CuM of waste is proposed to generated during the reporting year.	During the year 43623 MT or 15580 cuM of waste has been generated.	Less generation of waste is in account of less development. Violation of less development has been issued on 26/07/2019.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	To develop the deposit UG mining method has been adopted.	As the deposit is dipping vertical to sub-vertical and occurs at sub-surface. The UG mining method is suitable for exploitation of mineral.	NIL.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
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3a	Number of pit proposed for production	During the year 2018-19, a total of 16 stops have been proposed for production of copper Ore.	During the year 2018-19, a total of 14 stops have been workout to produce copper Ore.	Development of less number of stopes is in account of less development. Violation for less development issued vide letter dated 26/07/2019.
3b	Quantity of ROM mineral production proposed	650000 Tonnes	571245 tonnes	Less production is due to less development.
3c	Recovery of sailable/usable mineral from ROM production	650000 Tonnes	571245 tonnes	Less production is due to less development.
3d	Quantity of mineral reject generation	No proposal of Mineral reject 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.	Not applicable.	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 mproposal.	Not applicable.	NIL.
3h	Manual / Mechanised method adopted for segregating from ROM	No specific proposal of segregation of ROM. Entire ROM is subject to the beneficiation.	Entire ROM is being beneficiated.	NIL.

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| 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 in Khetri Lease area consist of Crushing, Milling through ball mill and road mill, flotation cell, Cu concentrate thickening, filtration section, Tailing thickening, dewatering etc. | 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. | The drilling and blasting is being carried out in UG as per proposal. | NIL. |

3k	Provision of mining machineries in mineral benches	Not proposal as operation are proposed through UG mining method.	Not applicable as no proposal.	NIL.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Not proposal as operation are proposed through UG mining method.	Not applicable as no proposal.	NIL.
3m	Total area covered under excavation/pits	0.958 Ha	0.958 Ha	NIL.
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable as operations are proposed through UG mining Method.	Not applicable as no proposal.	NIL.
3o	Total area put in use under different heads at the end of year	As per approved RMP dated 22/05/2018, total area put under different heads at the end of the plan period i.e. 31/03/2020 is 15.478 Ha.	The area put to utilized under different heads as on 01/04/2019 is 15.458 Ha.	As per AR 2018-19.
3p	Production of ROM mineral during the last five year period as applicable	2014-15: 600000 2015-16: 600000 2016-17: 600000 2017-18: 600000 2018-19 : 650000	2014-15: 537454 2015-16: 541950 2016-17: 576659 2017-18: 580160 2018-19 : 571245	All figures in metric tonnes. Less production in comparison to proposed production is in account of less development.
3q	General remarks of inspecting officers on method of mining etc.	Underground Mining method has been proposed to win Copper Ore.	Underground Mining method is being practiced at Mine.	As the deposit is dipping vertical to sub-vertical and occurs at sub-surface. The UG mining method is suitable for exploitation of mineral.

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 at existing waste dump.	Top soil and Mineral Reject has not been generated during the reporting year. Waste generated during the year has been dumped at designated place.	No proposal of top soil generation due to UG operations.
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-1.	Top soil and Mineral Reject has not been generated during the reporting year. Waste generated during the year has been dumped at designated place.	NIL.
4c	Number of dumps within lease area and outside of lease area	Inside Lease area- Two Outside Lease area: NIL	Inside Lease area- Two Outside Lease area: NIL	NIL.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable as Mining operations are being carried out through UG method.	Not applicable.	NIL.
4e	Number of active and alive dumps.	Two dumps namely Waste Dump-01 and Waste Dump-02.	Two dumps namely Waste Dump-01 and Waste Dump-02.	NIL.
4f	Number of dead dumps.	No proposal.	Not applicable.	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 construction of retaining wall and garland drain during 2018-19.	Retaining wall and garland drain has been observed along the waste dumps.	NIL.
4i	Length of Retaining wall or garland drain all along dumps	No proposal of construction of retaining wall and garland drain during 2018-19.	Retaining wall and garland drain has been observed along the waste dumps.	NIL.
4j	Number of settling ponds	No proposal.	Not applicable.	NIL.

4k	Specific comments of inspecting officer on waste dump management	There are two existing waste dump in leas area. Dumping of the waste has been proposed over existing dumps. During the year 2018-19 waste dumping has been proposed over waste dump -01.	Dumping of the waste is being carried out over existing dump as per proposal. Retaining wall and garland drain has been observed along the dump.	NIL.
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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 of U/G stopes 509S and 606S has been proposed.	Stope 606 S ahs been backfilled by 6720 CuM of waste.	Stope 509S was not backfilled due to less generation waste in account of less development.
5b	Area under backfilling of mined out area	No specific proposal. UG stopped out area of Stope 509S and 606S has been proposed to backfill by waste.	Stope 606 S ahs been backfilled by 6720 CuM of waste.	Stope 509S was not backfilled due to less generation waste in account of less development.
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	No proposal of fully reclamation and rehabilitation . However, an area of 0.4 ha has been proposed to rehabilitate by the way of plantation.	Around 0.4 Ha areas has been rehabilitate by the way of plantation within and outside lease area.	NIL.

5e	General remarks of inspecting officers on backfilling and reclamation etc.	Backfilling of Underground stopes back U/G stopes has been proposed.	Underground stopes back filled after extraction of minerals.	NIL.
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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) .	An area of 0.4 Ha (0.2 within lease and 0.2 outside lease) areas has been proposed to rehabilitate during the year 2018-19 by the way of plantation.	Plantation work has been carried out within and outside lease area as per proposal.	NIL.
6c	afforestation done (ha).	An area of 0.4 Ha (0.2 within lease and 0.2 outside lease) areas has been proposed to rehabilitate during the year 2018-19 by the way of plantation.	Plantation work has been carried out within and outside lease area as per proposal.	NIL.
6d	No. of saplings planted during the year	200 sapling within lease area and 200 out side lease area have been proposed to plant.	200 saplings within lease area and 150 outside lease area have been planted. Remaining work of plantation is being carried out.	NIL.

6e	Cumulative no .of plants	As per approved document dated 22/05/2018, cumulatively it is proposed to plant 800 number of plant during 2018-19 to 2019-20.	Cumulatively 350 number of saplings have been planted during the year 2018-19.	NIL.
6f	Any other method of rehabilitation	Other than plantation, no specific proposal of any other method of rehabilitation .	Only plantation work has been carried out.	NIL.
6g	Cost incurred on watch and care during the year	No specific proposal for the year 2018-19.	As reported during the mine inspection, Rs. 48000/- has been spend towards watch and care.	NIL.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	UG stopped out area of Stope 509S and 606S has been proposed to backfill by waste.	Stope 606 S ahs been backfilled by 6720 CuM of waste.	Stope 509S was not backfilled due to less generation waste in account of less development.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	UG stopped out area of Stope 509S and 606S has been proposed to backfill by waste quantity of 21886 CuM.	Stope 606 S ahs been backfilled by 6720 CuM of waste.	Stope 509S was not backfilled due to less generation waste in account of less development.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	Not applicable as operations are being carried by UG mining Method.	Not applicable.	NIL.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal making reservoir.	Not applicable.	NIL.

6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No any other specific proposal.	Not applicable as no proposal.	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 applicivable.	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.	Plantation by 400 saplings has been proposed over the 0.40 ha area.	Plantation work has been carried out as per proposal.	NIL.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
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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 plant consisting of Crushing, grinding, flotation cell, Copper concentrate thickening, filtration section, dewatering etc.	ROM generated is being beneficiated as per proposal. The beneficiation plant is located within the lease area of Khetri Copper Mine of M/s HCL.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	No proposal of any sorting.	Not applicable.	NIL.
7c	Different grade of mineral sorted out at mines.	No specific proposal.	Not applicable.	NIL.
7d	Any beneficiation process at mines .	No beneficiation process at Mine.	A beneficiation plant consisting of Crushing, grinding, flotation cell, Copper concentrate thickening, filtration section, dewatering etc. exist within the lease area of Khetri Copper Mine of M/s HCL.	NIL.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Entire ROM proposed to feed to beneficiation plant.	ROM ore is being feed to beneficiation plant exist within the lease area of Khetri Copper Mine of M/s HCL.	The beneficiation capacity of the plant is 2.4MTPA.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
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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 proposal.	Not applicable.	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 i.e. over waste dump-01.	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 i.e. around 9028.40 CuM over designated dump and partially i.e. around 6720 CuM 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 0.4 Ha (0.2 within lease and 0.2 outside lease) areas has been proposed to rehabilitate during the year 2018-19 by the way of plantation.	Plantation work has been carried out within and outside lease area 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 200 number saplings have been proposed to plant within lease area.	A total of 200 number of saplings were planted.	NIL.
8g	Survival rate	No specific proposal.	Survival rate for the year 2018-19 is 50%.	As per AR 2018-19.
8h	Water sprinkling on roads to control airborne dust	To control the air born dust particle, water sprinkling has been proposed.	Water sprinkling has been observed on roads during the mine inspection.	NIL.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	No proposal of top soil generation. Waste rock is proposed to dump over existing waste dump and partially proposed to use in backfilling of stope out area. During the year 200 number saplings have been proposed to plant within lease area.	No top soil has been generated during the year. Waste generated during the year has been dumped partially over designated dump and partially disposed of in underground stoped out area. 200 number of saplings were planted within lease area.	The aesthetic beauty of the mine is being improved through plantation.

Compliance of Rule 45:

Sl.No.	Item	Propasals	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-1.64 Ha, Occupied by plant, building, workshop, roads, plantation-6.07 Ha, Other-7.748 Ha, Total-15.458 Ha.	The details of land use furnished in AR appears to be correct.	NIL.
9d	Scrutiny of Annual return on afforestation	Information of plantation of 200 sapling within lease area and 150 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 generation: NIL	No mineral reject has been generated during the year 2018-19.	NIL.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM closing stock: 16400 tonnes,	Appear to be correct.	NIL.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex mine price- Rs. 21453.18 per tonne, Production cost per tonne- Rs. 2083.14 per tonne. Used for captive consumption, hence no sale value.	Found to be correct.	NIL.
9h	Scrutiny of Annual return on fixed assets	The value of fixed asset furnished is Rs. 815746240.00	Appear to be correct.	NIL.

9k	Scrutiny of Annual return on mining machineries	LHD, Dumper, Explosive Van, Rock Drill, Blast Hole Drill, Water Tanker, Pumps, Air Compressor, Ventilation Fan etc.	The information furnished in respect of mining machineries has been observed during the site inspection and appears to be correct.	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		MCDR17 Rule 11(1)	26-JUL-19	07-JAN-21
MCDR17 Rule 45(7)(a)	26-JUL-19		MCDR17 Rule 45(7)	26-JUL-19	07-JAN-21

Date :

(Kotriwal B.L.)

Indian Bureau of Mines