

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

MCDR INSPECTION REPORT

Gandhinagar regional office

Mine file No : RAJ/RJS/LEAD-ZINC-COPPER-1

Mine code : 34RAJ27001

- (i) Name of the Inspecting : **DJ03**) **DILIP JAIN**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Sh. Abhimanyu Singh Ogra, Mine Manager and Sh. Sandee
Official with
Designation
- (iv) Date of Inspection : 16-JUN-21
- (v) Prev.inspection date : 22-FEB-21

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **RAJPURA DARIBA**
- (b) **Registration NO.** : **IBM/421/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Underground
- (e) Postal address
- State : RAJASTHAN
- District : RAJSAMAND
- Village : DARIBA
- Taluka : RAILMAGRA
- Post office : DARIBA
- Pin Code : 313211
- FAX No. : 02952-65143
- E-mail : arun.mishra@vedanta.co.in
- Phone : 0294-2421420
- (f) Police Station : Railmagra
- (g) First opening date : 28-DEC-70
- (h) Weekly day of rest : SUN
2. Address for : RAJPURA-DARIBA
correspondance : DISTRICT-RAJSAMAND (RAJ.)
PIN-313211
3. (a) Lease Number : RAJ0654
- (b) Lease area : 1142.2
- (c) Period of lease : 60
- (d) Date of Expiry : 29-MAY-30
4. Mineral worked : COPPER ORE Associated
LEAD & ZINC ORE Main

5. Name and Address of the

Lessee : Hindustan Zinc Ltd
 Yashad Bhavan Udaipur
 UDAIPUR RAJASTHAN
 Phone:
 FAX :

Owner : Sri Arun Mishra
 Yashad Bhavan, Udaipur
 Rajasthan UDAIPUR
 RAJASTHAN
 Phone:
 FAX : 0294-2412545

Agent : Sanjay Khator
 Rajpura Dariba Mines
 Tehsil- Railmagra Rajsamand
 UDAIPUR RAJASTHAN
 Phone:
 FAX :

Mining Engineer

Name : Pushpendra Singh Dhabhai, Full Time
 Qualification : B Tech Mining & FCC-UR
 Appointment/ : 06-JUN-19 07-APR-21
 Termination date

Mining Engineer

Name : Abhimanyu Singh Ogra, Full Time
 Qualification : BE Mining
 Appointment/ : 07-APR-21
 Termination date

Geologist

Name : Dr. Sandeep Kumar Rajput, Full Time
 Qualification : Ph.D., N.E.T
 Appointment/ : 15-JUN-20
 Termination date

Manager

Name : Pushpendra Singh Dhaibhai
 Qualification : B Tech Mining & FCC UR
 Appointment/ : 06-JUN-19 07-APR-21
 Termination date

Manager

Name : Abhimanyu Singh Ogra
 Qualification : BE Mining.
 Appointment/ : 07-APR-21
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : Mining Scheme rule 12 MCDR1988 12-DEC-00
 Mining Scheme rule 12 MCDR1988 19-AUG-05
 Renewal under rule 22 MCR1960 26-MAY-09
 Modif. approved Mining Scheme 26-MAY-09
 Modif. of approved Mining Plan 19-OCT-12
 Mining Scheme rule 12 MCDR1988 22-JUL-15

MP modif under 17(3) MCR 2016	26-SEP-17
MP review under 17(1) MCR 2016	23-JAN-18
MP modif under 17(3) MCR 2016	10-MAY-19
MP review under 17(1) MCR 2016	26-JUN-20

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	A total of 179 BHs with 43200 mts of drilling was proposed during previous year i.e. 2019-20	A total of 186 BHs with 34267 mts of drilling was carried out during previous year i.e. 2019-20.	Violation of MCDR, 2017 issued for shortfall in drilling meters vide letter dated 10/12/2020 during previous inspection.
1b	Exploration over lease area for geological axis 1 or 2	A total of 150 BHs with 29000 mts of drilling was proposed.	A total of 98 BHs with 27655.20 mts of drilling was carried out.	Violation of rule 11(1) of MCDR, 2017 issued for shortfall in exploration vide letter dated 16/07/2021.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Agency: M/s TDMA Gurgaon. No proposal on expenditure.	Agency: M/s TDMA and SMSL. Expenditure: Around Rs. 144,50,000.00	NIL.
1d	Balance area to be explored to bring Geological axis in 1 or 2	12 Hectare.	12 Hectare.	NIL.
1e	Balance reserve as on 01/04/20	Reserve and resource as on 01/04/2020 as per approved RMP dated 26/06/2020: Reserve-11.66 million tones and Resources-40.10 million tons.	As on 01.04.2021 Reserve-10.45 million tons.. Resources-40.10 million tons.	Total depletion in FY (2020-21) was 1.21 million tons.
1f	General remarks of inspecting officers on geology, exploration etc	A total of 150 BHs with 29000 mts of drilling was proposed.	A total of 98 BHs with 27655 mts of drilling was carried out.	Latest technologies like directional drilling and core orientation etc are in practice for faster mineral exploration.

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	Development has been proposed for North Lode, East Lode and Main Lode at various mRL. A total of 10000 mts of development was proposed.	Development has been carried out in North Lode, East Lode and Main Lode during the RY, a total development of 7987.00 mts has been carried out.	Less development due to COVID-19 Pandemic, geotechnical challenges, dewatering issues etc.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable as mining operations was proposed through UG Mining Method.	Not applicable.	NIL.
2c	Stripping ratio or ore to OB ratio	Not applicable as mining operations was proposed through UG Mining Method.	Not applicable.	NIL.
2d	Quantity of topsoil generation in m3	No proposal of top soil generation during the year.	No top soil has been generated.	NIL.
2e	Quantity of overburden generation in m3	No proposal of OB generation as mining operations have been prosed through UG mining method.	Not applicable as no proposal.	NIL.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Development has been proposed through UG mining method.	The UG mechanised method has been adopted for carrying out mining operations in the lease area which is best suited to the type of deposit.	The UG mechanised method has been adopted for carrying out mining operations which is best suited to the type of deposit.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Not applicable being an underground mine.	Not applicable.	NIL.

3b	Quantity of ROM mineral production proposed	150000.00 tonnes.	1215171.00 tonnes.	Less production in account of less development, geotechnical challenges and COVID-19.
3c	Recovery of sailable/usable mineral from ROM production	150000.00 tonnes.	1215171.00 tonnes.	Less production in account of less development, geotechnical challenges and COVID-19.
3d	Quantity of mineral reject generation	No proposal of Mineral Reject generation.	Entire ROM is subject to beneficiation. A quantity of 887492.00 tonnes (mill tailing) has been reported as mineral reject.	As per annual return 2020-21.
3e	Grade of mineral rejects generation and threshold value declared.	Not applicable as no proposal of mineral reject generation.	0.88% (Pb+Zn) (as per annual return).	Mill tailing has been reported as mineral reject.
3f	Quantity of sub grade mineral generation.	No proposal of Sub-grade generation.	Not applicable.	NIL.
3g	Grade of sub grade mineral generation	Not applicable as no proposal.	Not applicable.	NIL.
3h	Manual / Mechanised method adopted for segregating from ROM	No proposal of segregation as entire ROM is subject to beneficiation.	ROM was beneficiated.	NIL.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal of any fresh beneficiation study.	Beneficiation of ROM is being carried out as per proposal.	Beneficiation facility of 1.2 mtpa is already in place within lease boundary.
3j	Provision of drilling and blasting in mineral benches	Not applicable being an underground mine.	Not applicable.	NIL.
3k	Provision of mining machineries in mineral benches	Not applicable being an underground mine.	Not applicable.	NIL.

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Not applicable being an underground mine.	Not applicable.	NIL.
3m	Total area covered under excavation/pits	7.09 Hect.	7.09 Hect.	NIL.
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable being an underground mine.	Not applicable.	NIL.
3o	Total area put in use under different heads at the end of year	Total area of 260.48 Hect. has been proposed to put in use at the end of 2024-25.	An area of 245.53 Ha. has been utilized at the end of the year 2020-21.	As per AR 2020-21.
3p	Production of ROM mineral during the last five year period as applicable	2015-16: 900000 2016-17: 950000 2017-18: 1000000 2018-19: 1200000 2019-20: 1500000 2020-21: 1500000	2016-17: 745532 2017-18: 895568 2018-19: 1079955 2019-20: 1037607 2020-21: 1215171	All figures in Metric Tonnes (MT)
3q	General remarks of inspecting officers on method of mining etc.	Underground method of mining has been proposed.	The Method of mining is suitable to the type of deposit.	The mine had been developed by UG method which is best suited to the type of deposit. No issue observed related method of mining.

Solid Waste Management - Dumping:

Sl.No.	Item	Proposals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	No proposal of top soil and Mineral Reject generation. Waste is proposed to dispose in UG stopes.	Top soil has not been generated during the reporting year. Waste generated during the year has been disposed in stoped out area. Mineral reject/ Mill tailing has been disposed in tailing dam.	Mill tailing of 887492 MT has been reported as Mineral reject.

4b	Location of topsoil, OB and mineral reject dumps	No proposal of top soil and Mineral Reject generation. OB/waste is proposed to dispose in UG stopes.	Top soil has not been generated during the reporting year. Waste generated during the year has been disposed in stoped out area. Mineral reject/ Mill tailing has been disposed in tailing dam.	Mill tailing has been reported as Mineral reject.
4c	Number of dumps within lease area and outside of lease area	One waste dump within lease area. No waste dump out side lease area.	One waste dump within lease area. No waste dump out side lease area.	NIL.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable being an underground mine.	Not applicable.	NIL.
4e	Number of active and alive dumps.	One waste dump.	One waste dump.	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.	Retaining wall and garland drain observed at necessary places along the dump.	NIL.
4i	Length of Retaining wall or garland drain all along dumps	No proposal.	Not applicable.	NIL.
4j	Number of settling ponds	No proposal of settling ponds.	Not applicable.	NIL.
4k	Specific comments of inspecting officer on waste dump management	OB/waste was proposed to dispose in UG stopes.	Waste generated during the year was disposed as per proposal.	No issue related to waste dumping.

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 or in stope waste dumping after full extraction of mineral was proposed.	In stope waste dumping was observed after full extraction of mineral.	NIL.

5b	Area under backfilling of mined out area	No specific proposal on area of backfilling. A quantity of 352039 CuM of waste was proposed to dispose in UG stopes.	Waste quantity of 328091 CuM has been dispose in UG stopes.	Figures also includes the quantity of mill tailing used for backfilling.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal of top soil generation during reporting year.	No top soil has been generated during the year.	NIL.
5d	Total area fully reclaimed and rehabilitated	No proposal of full reclamation and or rehabilitation during reporting year.	Not applicable.	NIL.
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Backfilling or in stope waste dumping after full extraction of mineral was proposed.	In stope waste dumping was observed after full extraction of mineral.	No issue related to backfilling or waste disposal.

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(2) of MCDR, 2017, PMCP report to be submitted for previous year by 1st July.	Report submitted.	NIL.
6b	Area available for rehabilitation (ha) .	A total of 3.50 hectare area.	A total of 10 hectare area.	NIL.
6c	afforestation done (ha).	A total of 3.50 hectare area was proposed for plantation.	A total of 10 hectare area was planted.	NIL.

6d	No. of saplings planted during the year	5250 saplings.	50000 saplings.	NIL.
6e	Cumulative no .of plants	Cumulatively 24000 number of plants have been proposed to plant during 2020-21 to 2024-25.	50000 number of plants have been planted during the year 2020-21.	As on 31.03.2021
6f	Any other method of rehabilitation	Other than plantation, no specific proposal of any other method of rehabilitation	No other method of rehabilitation was observed.	NIL.
6g	Cost incurred on watch and care during the year	No proposal on cost of watch and care during the year.	Approximately Rs. 2,28,64,000.00	NIL.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (L x B x D	5,00,000 m3	4,05,055 m3	NIL.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	3,52,039 m3	3,28,091 m3	Figures also includes the quantity of mill tailing used for backfilling.
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	Not applicable being an underground mine.	Not applicable.	NIL.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not applicable being an underground mine.	Not applicable.	NIL.

6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No any other specific proposal.	Not applicable.	NIL.
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	Total 5250 number of saplings.	Total 50000 number of saplings.	NIL.
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	A total of 3.50 hectare area was proposed for plantation.	A total of 10 hectare area was planted.	NIL.
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Plantation.	Plantation.	NIL.
6p	Compliance of environmental monitoring (core zone and buffer zone)	Proposal of environment monitoring has been envisaged.	Environment monitoring was carried out and found within permissible limit.	Few sample checks have been carried out.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Plantation of 5250 no of plants over 3.5 Ha. area.	Plantation of 50000 no of plants over 10.0 ha area.	PMCP compliance appears to be satisfactory.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	No specific proposal of grade wise sorting of ROM.	Entire ROM ore is being transported/dispatched to Ore beneficiation plant.	NIL.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Beneficiation: Mechanical.	Beneficiation: Mechanical.	NIL.
7c	Different grade of mineral sorted out at mines.	No proposal.	Not applicable.	NIL.

7d	Any beneficiation process at mines .	1.2 MTPA Beneficiation plant has been installed within the lease area. The process includes mainly crushing and grinding of ROM, Classification ,differential flotation cell etc.	Beneficiation of ROM was observed.	Another 1.5 MTPA beneficiation plant is proposed to commission by March-22.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	1.2 MTPA Beneficiation plant has been installed within the lease area. Another 1.5 MTPA beneficiation plant is proposed to commission by March-22.	Beneficiation of ROM is being carried out.	No issues related to mineral conservation and beneficiation.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal of top soil generation.	Top soil has not been generated.	NIL.
8b	Concurrent use or storage of topsoil	Not applicable as no proposal of top soil generation.	Not applicable.	NIL.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	No proposal of Reject and fines generation. Waste has been proposed to dispose in UG stopes.	Reject and fines has not been generated during the year. Waste has been disposed as per proposal. Mill tailing was disposed in tailing pond.	NIL.

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Waste rock is proposed to dispose in stopped out area.	UG stopped out area has been utilized for waste dumping/backfilling purpose.	NIL.
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal as it is UG mine.	Not applicable.	NIL.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Plantation of 5250 no of plants over 3.5 Ha. area.	Plantation of 50000 no of plants over 10.0 ha area.	NIL.
8g	Survival rate	No proposal on survival rate.	Survival rate was 90 %.	As per AR 2020-21.
8h	Water sprinkling on roads to control airborne dust	To control the air born dust particle, water sprinkling has been proposed on the roads.	Water sprinkling has been observed on roads to control airborne dust due to mining activity.	NIL.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Plantation of 5250 no of plants over 3.5 Ha. area.	Plantation of 50000 no of plants over 10.0 ha area.	The aesthetic beauty in and around the mine is satisfactory.

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, monthly and annual returns to be submitted.	Monthly and annual returns have been submitted for reporting year.	NIL.

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Information on Mining Engineer, Manager and geologist was furnished.	Mine Manger, Mining engineer and Geologist are appointed.	Scrutiny of AR 2020-21.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Ana area of 244.53 Ha. has been furnished under different heads.	Found in order.	NIL.
9d	Scrutiny of Annual return on afforestation	Within ML 50000 Nos of saplings.	Information furnished was found to correct.	NIL.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Quantity- 887492 MT Grade- 0.88 % (Pb+Zn)	The quantity of Mineral Reject furnished was actually the quantity of mill tailing.	NIL.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM Closing stock at Mine head- 20137 tonnes. No graded ore stock.	The information furnished found in order.	NIL.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex. Mine Price: Rs. 3935.00 per tonne Cost of Production: Rs. 3935.00 per tonne	No sale of mineral only captive use of mineral. Information furnished found in order.	Violation of rule 45(7) issued for error in cost of production vide letter dated 16/07/2021.
9h	Scrutiny of Annual return on fixed assets	Value of fixed asset is furnished as Rs. 6413155934.00	Found in order.	NIL.
9k	Scrutiny of Annual return on mining machineries	Winding Machine, Air Compressor, Ventilation Fan, Pumps, Crusher, Conveyor, Rock Drill, Load Haul Dumper, Motor Grader, Dumper, LPDT etc.	Winding Machine, Air Compressor, Ventilation Fan, Pumps, Crusher, Conveyor, Rock Drill, Load Haul Dumper, Motor Grader, Dumper, LPDT etc.	NIL.

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

Violation observed			Show cause position		
Rule NO.	Issued on	Compliance on	Rule NO.	Issued on	Compliance on
MCDR17	Rule 11 (1)	16-JUL-21			
MCDR17	Rule 35 (2)	16-JUL-21			
MCDR17	Rule 45 (7) (a)	16-JUL-21			

Date :

(DILIP JAIN)

Indian Bureau of Mines