

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

MCDR INSPECTION REPORT

Gandhinagar regional office

Mine file No : RAJ/UDP/PB-ZN-2

Mine code : 34RAJ26004

- (i) Name of the Inspecting : **DJ03**) **DILIP JAIN**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Sh. Nandlal(Mine Manager), Dr. Shashi Shukla(Geology)
Official with
Designation
- (iv) Date of Inspection : 24-JAN-24
- (v) Prev.inspection date : 26-AUG-23

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **ZAWARMALA**
- (b) **Registration NO.** : **IBM/421/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Underground
- (e) Postal address
State : RAJASTHAN
District : UDAIPUR
Village : ZAWAR
Taluka : GIRWA
Post office : ZAWAR MINES
Pin Code :
FAX No. : 0294-2412545
E-mail : arun.mishra@vedanta.co.in
Phone : 0294-6604120
- (f) Police Station : Zawar Mines
- (g) First opening date : 01-APR-50
- (h) Weekly day of rest : MON
2. Address for : VILL-ZAWAR
correspondance : POST-ZAWARMALA,P.O=Goverdhanvilash
DISTT-UDAIPUR
3. (a) Lease Number : RAJ1725
- (b) Lease area : 816
- (c) Period of lease : 80
- (d) Date of Expiry : 31-MAR-30
4. Mineral worked : 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 : Sri Radha Raman
 Post: Zawar District:
 Udaipur UDAIPUR RAJASTHAN
 Phone:
 FAX :

Mining Engineer

Name : Shri Sazal, Full Time
 Qualification : BE Mining
 Appointment/ : 23-JAN-19
 Termination date

Geologist

Name : Shri Shashi Shukla, Full Time
 Qualification : M.Sc. Geology
 Appointment/ : 14-JAN-22
 Termination date

Geologist

Name : Sri Prasanta Biswas, Full Time
 Qualification : M.Sc. Geology
 Appointment/ : 17-MAR-20 13-JAN-22
 Termination date

Manager

Name : Sri Lokesh Paliwal
 Qualification : Be.Mining
 Appointment/ : 02-JUL-19 16-JAN-23
 Termination date

Manager

Name : Shri Nand Lal Swami
 Qualification : ME Mining
 Appointment/ : 17-JAN-23
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : PMCP under 23B(1) for Renewal 21-AUG-09
 MP modif under 17(3) MCR 2016 17-MAY-19
 MP review under 17(1) MCR 2016 17-DEC-19
 MP modif under 17(3) MCR 2016 15-JUL-21

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	A total of 80 BHs with 18000 mts of drilling was proposed during previous year 2021-22.	A total of 81 BHs with 19167 mts of drilling has been done during previous year 2021-22.	No short fall during previous year.
1b	Exploration over lease area for geological axis 1 or 2	Surface Exploration with 5 hole and 5000 meterage Underground Exploration with 75 hole and 13000 meterage	Surface Exploration with 4 hole and 1915 meterage Underground Exploration with 117 hole and 14261.15 meterage	Surfaceexploration has not been carried out as per approved proposal and there is shortfall in the total exploration also for which violation of Rule 11(1) of MCDR, 2017 has been pointed out during previous inspection.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal about drilling agency.	Surface Exploration: MAPL, TDMA and Underground Exploration: EFMCP, TDMA. Total Expenditure: Rs. 62123736.00/-	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	G1 (0.4Ha) G2 (0.4Ha) G3 (0.2Ha)	G1 (0.4Ha) G2 (0.4Ha) G3 (0.2Ha)	Nil
1e	Balance reserve as on 01/04/20	No year wise specific proposal	The position of reserve and resources as on 01/04/2023 was 4.00 and 5.96 million tons respectively.	Nil
1f	General remarks of inspecting officers on geology, exploration etc	Surface Exploration with 5 hole and 5000 meterage Underground Exploration with 75 hole and 13000 meterage	Surface Exploration with 4 hole and 1915 meterage Underground Exploration with 117 hole and 14261.15 meterage	Surfaceexploration has not been carried out as per approved proposal and there is shortfall in the total exploration also for which violation of Rule 11(1) of MCDR, 2017 has been pointed out during previous inspection.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	A total of 4100 mts of horizontal and vertical development was proposed during RY 2022-23.	A total of 2477.61 mts of horizontal and vertical development was achieved during RY 2022-23.	The underground development has not been carried out as per approved proposal and there is shortfall in the total development also for which violation of rule 11(1) of MCDR, 2017 has been pointed out during previous inspection.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	No proposal for separate benches in topsoil, OB and minerals.	Not applicable as mining operation has been proposed through UG Mining Method.	Nil
2c	Stripping ratio or ore to OB ratio	No proposal.	Not applicable as mining operation has been proposed through UG Mining Method.	Nil
2d	Quantity of topsoil generation in m3	No proposal.	Not applicable as mining operation has been proposed through UG Mining Method and there is no topsoil generation.	Nil
2e	Quantity of overburden generation in m3	Not applicable as it is U/G mine. However, a total of 31851.85m3 (86000MT) of waste has been proposed to generate through UG development	A total of 22926.8m3(61902MT) of waste has been generated through UG development.	Less quantity of waste generation is due to less U/G development.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			Shortfall in UG mine development observed for the year 2022-23 for which violation under rule 11(1) of MCDR,2017 has been pointed out during previous inspection.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
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3a	Number of pit proposed for production	Being U/G mine no proposal for pit. However, total of 08 Stope blocks at different level has been proposed for stoping operation.	Stoping operation has been carried out at 02 stope blocks.	Shortfall due to less development and violation for less development issued during previous inspection.
3b	Quantity of ROM mineral production proposed	550000 tonne	347383 tonne	Shortfall due to less development and violation for less development issued during previous inspection.
3c	Recovery of sailable/usable mineral from ROM production	100% ROM is usable for beneficiation.	Entire ROM is being used for the purpose of beneficiation.	Nil.
3d	Quantity of mineral reject generation	Mineral reject/tailing of 495000 tons.	A quantity of 314910 tons (mill tailing) has been generated during 2022-23.	Nil
3e	Grade of mineral rejects generation and threshold value declared.	No proposal. No threshold value has been declared for Pb-Zn.	The grade of mil tailing reported was 0.39 % (Pb+Zn)	Nil
3f	Quantity of sub grade mineral generation.	No proposal of Sub-grade generation.	Not applicable.	Nil
3g	Grade of sub grade mineral generation	No proposal.	Not applicable because there is no sub-grade genetaion.	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	No proposal of segregation.	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 any fresh beneficiation study.	Beneficiation of ROM is being carried out as per proposal	Beneficiation facility of 4.8 mtpa is already in place within lease boundary where ROM of Balaria, Baroi Mochia and Zawarmala mine is beneficiated at same location.

3j	Provision of drilling and blasting in mineral benches	Drilling pattern for development in ore and rock- Burn Cut method. Drilling pattern in Stopes- Ring drilling with parallel hole drilling.	Drilling and blasting has been carried out as per proposal in UG development and stopes.	Nil
3k	Provision of mining machineries in mineral benches	Being U/G mine no proposal for mineral benches but for U/G Twin Boom Jumbo, Loaders, LPDT, Grader, scaler and utility vehicles etc. has been proposed for mine development and stoping operation.	Deployment of Mining machinery has been found to be as per proposal in UG operations.	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Not proposed being a UG mining operation.	Not applicable.	Nil
3m	Total area covered under excavation/pits	No proposal.	Not applicable being a UG mining operation.	Nil
3n	Ore to OB ratio for the pit/mine during the year.	No proposal.	Not applicable being a UG mining operation.	Nil
3o	Total area put in use under different heads at the end of year	An area of 380.12 hectare at the end of the plan period i.e. 2024-25	An area of 325.23 hectare as per AR 2022-23.	Nil
3p	Production of ROM mineral during the last five year period as applicable	2018-19: 300000 2019-20: 580000 2020-21: 540000 2021-22: 550000 2022-23: 550000	2018-19: 299995 2019-20: 435925 2020-21: 397728 2021-22: 381438 2022-23: 347382	All figures in tons. Less production during the year 2022-23 in account of less development.

3q	General remarks of inspecting officers on method of mining etc.	Underground method of mining has been proposed.	Underground method of mining has been adopted as per proposal.	NilThe Method of mining is suitable to the type of deposit. No issue related method of mining has been observed.
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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, OB mineral reject generation. Proposed for U/G waste of 86000 tons and MR/Tailing of 495000 tonnes.	No top soil & OB generation and the waste generated for the year is 61902.41 tonne and tailing reject 314910 tonnes.	Less generation was due to less development and less beneficiation of ROM due to less production.
4b	Location of topsoil, OB and mineral reject dumps	No proposal of topsoil generation. OB/waste is proposed to dispose in UG stopes as well as for tailing dam construction. Mineral reject (Mill tailing) has been proposed to backfill in stope out area.	Topsoil has not been generated during the reporting year. Waste and mill tailing has been disposed as per proposal.	Nil
4c	Number of dumps within lease area and outside of lease area	No proposal of waste dumping in dump within lease or outside lease.	Waste generated by U/G development has been disposed in UG stopes as well as for tailing dam construction.	Old waste dump within lease has been converted under Stadium and rock garden.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable as Mining operations are being carried out through UG mining method.	Not applicable.	Nil
4e	Number of active and alive dumps.	No proposal.	Not applicable.	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.	Not applicable as no waste dump within Mine boundary	Nil
4i	Length of Retaining wall or garland drain all along dumps	No proposal.	Not applicable as no waste dump within Mine boundary.	Nil
4j	Number of settling ponds	No proposal.	Not applicable.	Nil
4k	Specific comments of inspecting officer on waste dump management	U/G development waste was proposed to dispose in UG stopes as well as for tailing dam construction.	Waste generated during the year was dumped 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 dumping in UG voids has been proposed after full extraction of mineral.	Dumping of waste has been carried out in UG stopes.	Nil
5b	Area under backfilling of mined out area	No specific proposal of area. A quantity of 83000 MT has been proposed to dispose in UG stopes.	The quantity of 60302.60 MT of waste has been dispose in mined out UG stopes.	Waste quantity of 1599.80 tons used for tailing dam construction.
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	Not applicable.	Nil

5e	General remarks of inspecting officers on backfilling and reclamation etc.	Backfilling or in stope dumping in UG voids has been proposed after full extraction of mineral.	In stope dumping of waste has been carried out in UG stopes.	Dumping has been carried out as per proposal. No other issue observed.
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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(2) of MCDR, 2017, PMCP report to be submitted for previous year by 1st July.	Annual PMCP report for reporting year i.e. 2022-23 has been submitted.	Nil
6b	Area available for rehabilitation (ha) .	No proposal for rehabilitation	Not applicable	Nil
6c	afforestation done (ha).	5 Ha areas have been proposed within Zawar Lease area.	5 Ha area have been planted as a gap filling.	Gap filling planation for entire Zawar lease.
6d	No. of saplings planted during the year	5000 plants within lease area.	5190 sapling planted with Zawar lease.	Figures are for entire Zawar Lease area. No mine specific proposal.
6e	Cumulative no .of plants	No specific proposal on cumulative number of plants.	As per annual return 2022-23, cumulative number of planation as on 31/03/2023 was 447815.	Figures are for entire Zawar Lease area.
6f	Any other method of rehabilitation	Other than plantation, no specific proposal of any other method of rehabilitation	Except plantation, no other method of rehabilitation was observed.	Nil
6g	Cost incurred on watch and care during the year	No specific proposal on cost of watch and care during the year.	Cost incurred on watch & care is approximately Rs 577400/-	Nil

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No specific proposal of area. A quantity of 83000 MT has been proposed to dispose in UG stopes.	The quantity of 60302.6 MT of waste has been dispose in UG stopes.	Less quantity of backfilling in account of less development.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Waste quantity of 83000 MT and mill tailing of 388800 MT was proposed to backfill.	The quantity of 60302.6 MT of waste has been dispose in UG stopes.	Less quantity of backfilling in account of less development.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	No proposal.	Not applicable being an underground mine.	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal.	Not applicable being an underground mine.	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No specific proposal.	Not applicable.	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	5000 plantation.	5190 sapling planted.	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	5.0 ha area	5.0 ha area by plantation of 5190 sapling.	Figures are for entire Zavar Lease area and gap filling plantation.
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 stations has been given.	Environment monitoring was carried out.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	A total of 5000 number sapling has been proposed to plant.	A total of 5190 number of saplings has been planted.	PMCP compliance is 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.	All ROM ore is being transported to Ore beneficiation plant located within lease area.	Nil
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	No proposal for grade wise sorting.	Not applicable as no grade wise sorting	Nil
7c	Different grade of mineral sorted out at mines.	No proposal.	Not applicable.	Nil
7d	Any beneficiation process at mines .	A beneficiation plant of 4.8 MTPA has been installed within lease area.	Beneficiation plant having capacity of 4.8 MTPA Installed. The process includes mainly crushing and grinding of ROM, Classification , differential flotation etc.	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			No issues related to mineral conservation and beneficiation observed. Beneficiation of ROM is being carried out through beneficiation plant of 4.8 MTPA installed within the lease area.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal of top soil generation.	No top soil has been generated	Nil
8b	Concurrent use or storage of topsoil	No proposal.	Not applicable as there was no proposal	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Waste has been proposed to dispose in UG stopes as well as for tailing dam construction. No proposal for fines generation.	Fines have not been generated during the year. Waste has been disposed in stoped out area.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Waste proposed to dispose in stoped out area and tailing dam construction.	Generated waste has been disposed in U/G stoped out area and tailing dam construction.	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal.	Not applicable.	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	An area of 5.0 Ha has been proposed for plantation with 5000 number of saplings.	During the year a total of 5190 saplings have been planted over 5.0 ha area for gap filling plantation	Figures are for entire Zavar Lease area. No mine wise specific proposal
8g	Survival rate	No proposal of survival rate.	80% survival rate has been reported in Annual Return.	Nil
8h	Water sprinkling on roads to control airborne dust	To control the air born dust particle, water sprinkling has been proposed over the roads by water tanker.	Water sprinkling has been observed.	Nil

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	A total of 5000 numbers of saplings proposed to plant during 2022-23 covering 5.0 ha area	A total of 5190 numbers of saplings have been planted during 2022-23 in 5.0 ha area.	The aesthetic beauty in and around the mine is satisfactory.
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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 Monthly and Annual returns to be submitted by the lessee.	Monthly and Annual returns for the year 2022-23 have been submitted by lessee.	Nil
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer- Shri Sazal Geologist- Dr. Shashi Bhushan Shukla Manager- Shri Nandlal Swami	Manager, Geologist and Mining Engineer has been appointed.	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Reclaimed/rehabilitated- 45.070, Occupied by plant, buildings, residential, welfare buildings & roads-275.16 Work done under PMCP-5.0 hect.	The information of land use furnished appears in order.	The land use details are for entire Zavar lease.
9d	Scrutiny of Annual return on afforestation	5190 no of trees.	Found in order.	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Mineral Reject: Nil	No mineral reject generation during RY year. Mill tailing of 314910 tons have been generated.	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM closing stock: NIL	The information furnished appears in order.	Nil

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex Mine Price and Production cost Rs.4894.91/- per tonne.	Information of Ex-mine price and cost of production is furnished in the AR 2022-23. No sale of mineral only captive use of mineral.	Nil
9h	Scrutiny of Annual return on fixed assets	The Value of Fixed Assets: Rs. 1450362209.00	The information furnished on fixed asset appears in order.	Nil
9k	Scrutiny of Annual return on mining machineries	Winding Engine, Blast Hole drill, Rock Drill, Locomotive, Dumper, LHD, Air compressor, Ventilation fan, Pumps, conveyor, crusher etc.	Information on mining machineries is furnished in the AR 2022-23 and seems to be in order.	Nil

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 :

(DILIP JAIN)

Indian Bureau of Mines