

**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 : **P022**) **PANKAJ KULSHRESTHA**
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : Shri Lokesh Paliwal, Manager, Shri Shashi Shukla, Geo
Official with
Designation
- (iv) Date of Inspection : 12/10/2022
- (v) Prev.inspection date : 21/01/2022

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** : **01/04/1950**
- (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** : **31/03/2030**
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/ : 23/01/2019
Termination date

Geologist

Name : Shri Shashi Shukla, Full Time
Qualification : M.Sc. Geology
Appointment/ : 14/01/2022
Termination date

Geologist

Name : Sri Prasanta Biswas, Full Time
Qualification : M.Sc. Geology
Appointment/ : 17/03/2020 13/01/2022
Termination date

Manager

Name : Sri Lokesh Paliwal
Qualification : Be.Mining
Appointment/ : 02/07/2019 16/01/2023
Termination date

Manager

Name : Shri Nand Lal Swami
Qualification : ME Mining
Appointment/ : 17/01/2023
Termination date

6. Date of approval of Mining Plan/Scheme of Mining : PMCP under 23B(1) for Renewal 21/08/2009
MP modif under 17(3) MCR 2016 17/05/2019
MP review under 17(1) MCR 2016 17/12/2019
MP modif under 17(3) MCR 2016 15/07/2021

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	NO BACK LOG	NIL	
1b	Exploration over lease area for geological axis 1 or 2	Surface: 5000m (5) Underground: 13000m (75)	Surface: 2637.70m (2) Underground: 7370m (67)	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal about drilling agency	till 30th Sept. 2022 details are as given below: Surface Exploration MAPL, TDMA, Expenditure: Rs. 11869650 Underground Exploration EFMCPL Expenditure: Rs. 9231950	
1d	Balance area to be explored to bring Geological axis in 1 or 2	G1 (0.4Ha) proposed holes 90. G2 (0.4Ha) proposed holes 3 G3 (0.2Ha) proposed holes 2	G1 (0.25Ha) Actual holes 67. G2 (0.1Ha) proposed holes 2 G3 (0.0Ha) proposed holes 0	Resources from inferred/ Geo Axis 3 to prove (1 or 2
1e	Balance reserve as on 01/04/20	The position of reserve and resources as on 01/04/2021: 111- 2.31 MT 122- 0.70 MT 221- 2.49 MT 222- 1.60 MT 332- 0.00 MT 333- 1.86 MT	The position of reserve and resources as on 01/04/2022: 111- 2.40 MT 122- 0.94 MT 221- 3.38 MT 222- 1.41 MT 332- 0.00 MT 333- 1.76 MT	
1f	General remarks of inspecting officers on geology, exploration etc	Adequate	Adequate	

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
--------	------	-----------	-------------	---------

2a	Location of development w.r.t.lease area	A total of 4200m (horizontal and vertical) of development has been proposed.	2022-23 till 30th Sept During the year a total of 1201.62m (Horizontal and vertical) development has been achieved	Equipment delayed & Poor ventilation affected development progress.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable as mining operation has been proposed through UG Mining Method.	Not applicable as mining operation has been proposed through UG Mining Method.	
2c	Stripping ratio or ore to OB ratio	Not applicable being a UG mining operation.	Not applicable being a UG mining operation.	
2d	Quantity of topsoil generation in m3	No proposal of top soil generation during the year.	No top soil has been generated during the year.	
2e	Quantity of overburden generation in m3	A total of 31851.85m3 of waste has been proposed to generate through UG development.	2022-23 till 30th Sept A total of 8291.48m3 of waste has been generated.	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	NA	The development w.r.t. type of deposit may be considered as satisfactory.	

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	A total of 08 Stope blocks at different level has been proposed for stoping operation.	Stoping operation has been carried out at 02 stope blocks.	Delay in Narrow vein mining technology and production carried in old stopes using remote LHD's.
3b	Quantity of ROM mineral production proposed	Quantity of ROM mineral production proposed in 2021-22 : 550000t	Quantity of ROM mineral production achieved in 2021-22 is reported as 381438 t	The production and associated activities were adversely affected badly due to covid.

3c	Recovery of sailable/usable mineral from ROM production	100%	The recovery of sailable/usable mineral from ROM may be considered as satisfactory.	495000 tons of mineral Reject, generation proposed.
3d	Quantity of mineral reject generation	495000 tons of mineral Reject, generation was proposed.	2022-23 till 30th Sept: Entire ROM is subject to beneficiation. A quantity of 160798 tons (mill tailing) has been reported as mineral reject.	
3e	Grade of mineral rejects generation and threshold value declared.	Not applicable as no proposal.	The grade of mil tailing reported was 0.36 % (Pb+Zn)	
3f	Quantity of sub grade mineral generation.	No proposal of Sub-grade generation.	Not applicable	
3g	Grade of sub grade mineral generation	Not applicable	Not applicable	
3h	Manual / Mechanised method adopted for segregating from ROM	No proposal of segregation as entire ROM is subject to beneficiation.	Entire ROM is being beneficiated.	
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.	
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.	

3k	Provision of mining machineries in mineral benches	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.	Overall Calculated for Zawar
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Not applicable being a UG mining operation.	Not applicable	
3m	Total area covered under excavation/pits	Not applicable being a UG mining operation.	Not applicable	
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable being a UG mining operation.	Not applicable	
3o	Total area put in use under different heads at the end of year	Mining-46.36 ,Mineral storage-4.73 ,Ben. Plant-23.82, Township-38.95, Tailing pond-159.41, Roads-10.86 , Infrastructure -66.88, Waste dump-0.50, Others-28.61, Total-380.12	Mining-46.36 Mineral storage-4.73 Ben. Plant-23.82 Township-38.95 Tailing pond-159.41 Roads-10.86 Infrastructure-66.88 Waste dump-0.50 Others-28.61 Total-380.12	
3p	Production of ROM mineral during the last five year period as applicable	2017-18: 325000 2018-19: 300000 2019-20: 580000 2020-21: 540000 2021-22: 550000 All figures in Metric Tons (MT)	2017-18: 365453 2018-19: 299995 2019-20: 435925 2020-21: 397728 2021-22: 381438 All figures in Metric Tons (MT)	

3q General remarks Satisfactory The method of mining of inspecting officers on method of mining etc.

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 generation and proposed mineral reject quantity is 495000 tonnes	2022-23 till 30th Sept : No proposal of top soil, OB generation and Actual mineral reject quantity is 160798 tonnes.	Quantity of Mill tailing of 160798 MT of 0.36 % (Pb+Zn) has been reported as Mineral reject.
4b	Location of topsoil, OB and mineral reject dumps	No proposal of top soil and OB generation. Mineral Reject is proposed to dispose in UG stopes as well as for tailing	2022-23 till 30th Sept : Top soil and OB has not been generated during the reporting year. Mineral reject generated during the year has been dumped as per proposal	Quantity of Mill tailing of 160798 MT of 0.36 % (Pb+Zn) has been reported as Mineral reject.
4c	Number of dumps within lease area and outside of lease area	No proposal of waste dumping within Mine boundary	No waste dumping within Mine boundary of Zawarmala Mine.	
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	
4e	Number of active and alive dumps.	No proposal.	Not applicable.	
4f	Number of dead dumps.	No proposal.	Not applicable.	
4g	Number of dumps established.	No proposal.	Not applicable.	
4h	Whether Retaining wall or garland drain all along dumps are there.	Not applicable as no waste dump within Mine boundary	Not applicable	
4i	Length of Retaining wall or garland drain all along dumps	Not applicable as no waste dump within Mine boundary	Not applicable	

4j	Number of settling ponds	Not applicable as no waste dump within Mine boundary	Not applicable.	Solid waste management-dumping in Zawarmala mine may be considered as satisfactory.
----	--------------------------	--	-----------------	---

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 waste dumping in UG voids has been proposed	2022-23 till 30th Sept: Dumping of waste has been carried out in UG stopes	
5b	Area under backfilling of mined out area	79000 MT was proposed to dispose in UG stopes.	The entire quantity of 41730 MT of waste has been dispose in UG stopes S14 (-5mRL). (2614E-2715E).	
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	
5d	Total area fully reclaimed and rehabilitated	No proposal of full reclamation and or rehabilitation	Not applicable at present.	
5e	General remarks of inspecting officers on backfilling and reclamation etc.	NA	Over all status may be considered as satisfactory.	

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. 2021-22 has been submitted on 28/05/2022	

6b	Area available for rehabilitation (ha) .	Nil	NA
6c	afforestation done (ha).	5 Ha areas have been proposed within Zawar group area.	5 ha gap filling
6d	No. of saplings planted during the year	5000 within lease area.	Total 5000 saplings have already been planted in Zawar group of mines.
6e	Cumulative no .of plants	NA	As on 31.03.2022 the total cummulative plants are 442625.
6f	Any other method of rehabilitation	NA	NA
6g	Cost incurred on watch and care during the year	No specific proposal on cost of watch and care during the year	As reported, approximately Rs 52087469/-
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (L x B x D	No specific proposal of area. A quantity of 31680 MT has been proposed to dispose in UG stopes. Underground Exhaust stopes 100 M(L) X 25 M(W) X 25 M(H)	2022-23 till 30th Sept :The entire quantity of 22387 MT of waste has been dispose in UG stopes Underground Exhaust stopes 100 M(L) X 25 M(W) X 25 M(H)
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Proposal of void to be filled during the year 2022-23 are as given below : Waste - 31680 tons Pastefill - 348900 tons	Void filled up to Sep., 2022: Waste - 22387 tons Pastefill - 28190 tons

6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	No Proposal.	Not applicable
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No Proposal.	Not applicable
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No Proposal.	Not applicable
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	5 HA	5 HA Gap filling for over all Zawar group.
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Nil	Not applicable
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Plantation	The methos of rehabilitation adopted is plantation
6p	Compliance of environmental monitoring (core zone and buffer zone)	Provision of environment monitoring stations has been given.	Environment monitoring parameters are found to be within permissible limit.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	NA	The over all status of compliance of PMCP and progressive closure operations may be considered as 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.	All ROM ore is being transported to Ore beneficiation plant located within lease area
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Not applicable as no grade wise sorting.	Not applicable
7c	Different grade of mineral sorted out at mines.	No proposal.	Not applicable
7d	Any beneficiation process at mines .	4.7 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 has been observed as per proposal. Yes. Ore beneficiation process in lease area for all 4 mines
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	NA	The status of Mineral Conservation may be considered as satisfactory.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal of top soil generation.	Not applicable	
8b	Concurrent use or storage of topsoil	Not applicable as no proposal.	Not applicable	

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 as well as for tailing dam construction.	Reject and fines has not been generated during the year. Waste has been disposed as per proposal.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal of use of waste rock for restoring the land to its original use. However, waste rock is proposed to dispose in stopped out area.	U/G stopped out area has been utilized for waste dumping purpose.
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal	Not applicable
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Base line 380425 Plan addition 5000	Current Cumulative as on date is 442625 with Actual Addition 5000
8g	Survival rate	No specific proposal for survival rate	90% survival rate achieved during the year.
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 with fixed water sprinklers at Zawarmala Crusher and stock pile area with total stretch of 180m long. 2 Water tankers (capacity 10KL) sprinkling water on haul roads to control airborne dust due to mining activity.

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	NA	The aesthetic beauty in and around the mine area may be considered as 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.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Eng.- Sazal Geologist- Prasanta Biswas Manager- Mr. Lokesh Paliwal	Mine Manger, Mining engineer and Geologist are appointed.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Mining-46.36 Mineral storage-4.73 Ben. Plant-23.82 Township-38.95 Tailing pond-159.41 Roads-10.86 Infrastructure -66.88 Waste dump-0.50 Others-28.61 Total-380.12	Mining-46.36 Mineral storage-4.73 Ben. Plant-23.82 Township-38.95 Tailing pond-159.41 Roads-10.86 Infrastructure-66.88 Waste dump-0.50 Others-28.61 Total-380.12 (For over all Zawar group)	
9d	Scrutiny of Annual return on afforestation	Afforestation done- 5 Ha (Gap Filling) No. of Saplings- 5000	Afforestation done- 5 Ha (Gap Filling) No. of Saplings- 2000 (For over all Zawar group)	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Quantity- 354632 grade- 0.37 % (Pb+Zn)	The quantity of Mineral Reject furnished is actually a quantity of mill tailing.	

9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM Closing stock at Mine head- 0. ROM closing stock at Mill: 0 MT	The information furnished is found to be in order.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	No sale of mineral only captive use of mineral. Ex. Mine Price & Production cost Rs. 4844 per tonne.	Information furnished appears to be corrected.
9h	Scrutiny of Annual return on fixed assets	Value of fixed asset furnished is Rs. 1503596747/-	The value of fixed asset furnished appears to be in order.
9k	Scrutiny of Annual return on mining machineries	There are Rock Drill, Blast Hole Drill. Locomotive, LPDT, LHD, Air Compressor, Pumps, Ventilation fan etc in the mine.	The information furnished on mining machineries appears to be in order.

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

Date :

(PANKAJ KULSHRESTHA)

Indian Bureau of Mines