

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

MCDR INSPECTION REPORT

Gandhinagar regional office

Mine file No : RAJ/UDP/LZ-3

Mine code : 34RAJ26001

- (i) Name of the Inspecting : **K018**) **DR A Z KHAN**
Officer and ID No.
- (ii) Designation : Regional Mining Geologist
- (iii) Accompanying mine : Sh. Satish Thakare(Mine Manager), Dr. Shashi Shukla(G
Official with
Designation
- (iv) Date of Inspection : 23-AUG-23
- (v) Prev.inspection date : 15-OCT-22

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **BALARIA**
- (b) **Registration NO.** : **421**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Underground
- (e) Postal address
- State : RAJASTHAN
- District : UDAIPUR
- Village : ZAWAR
- Taluka : SARADA/GIRWA
- Post office : ZAWAR MINES
- Pin Code : 313901
- FAX No. : 0294-2412545
- E-mail : arun.mishra@vedanta.co.in
- Phone : 0294-6604120
- (f) Police Station : ZAWAR
- (g) First opening date : 01-APR-70
- (h) Weekly day of rest : SUN
2. Address for : PO- ZAWAR
correspondance : DISTT.- UDAIPUR
RAJASTHAN-313901
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 LIMITED
 YASHAD BHAVAN UDAIPUR
 RAJASTHAN
 Phone:(0294) 2342093
 FAX :(0294) 2342092

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

Agent : Mithilesh Kumar
 HINDUSTAN ZINC LTD. P.O.-
 ZAWAR MINES, DISTRICT-
 UDAIPUR UDAIPUR RAJASTHAN
 Phone: 9829013876
 FAX :

Mining Engineer

Name : PRASHANT GUPTA, Full Time
 Qualification : BE. (MIN.) 2 class cert.
 Appointment/ : 11-AUG-12
 Termination date

Geologist

Name : Sri K. Sairaj, Full Time
 Qualification : M.Sc. Geology
 Appointment/ : 02-JUN-20
 Termination date

Manager

Name : Sh. Mithilesh Kumar
 Qualification : BE(Mining)
 Appointment/ : 19-JAN-18 04-JUN-21
 Termination date

Manager

Name : Sri Debanshu Chatterjee
 Qualification : B.E. Mining
 Appointment/ : 04-JUN-21
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : Modif.of approved Mining Plan 04-OCT-12
 Mining Scheme rule 12 MCDR1988 31-JUL-15
 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	During the previous year i.e., 2021-22 a total of 392 BH have been proposed with 59000mts	During the year 2021-22 a total of 609 BH have been drilled with 79631 mts. Exploration drilling done.	No Backlog
1b	Exploration over lease area for geological axis 1 or 2	2022-23- 425 no.of holes with 61000m From Surface- Proposed bore holes 15no. with 14000m. From UG- Propsed bore holes 410no. with 47000m.	2022-23- Total 590no.of holes drilled with 77116m From Surface-9no. of holes drilled with 4525m. From UG-581no. of holes drilled with 72591m.	There is shortfall in the surface exploration for which violation pointed out.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal about Drilling agency and expenditure	2022-23 The total expenditure for exploration during the year was : 1946.41 lakhs The following two agency have carried out the exploration work 1. Eco Friendly Mining & Construction Pvt. Ltd. 2. Trans directional mining Associates	None
1d	Balance area to be explored to bring Geological axis in 1 or 2	G1 (16.27Ha). G2 (5.14Ha) G3 (7.19Ha)	G1 (16.87Ha). G2 (5.22Ha) G3 (7.19Ha)	Resources from inferred/ Geo Axis 3 to prove (1 or 2)
1e	Balance reserve as on 01/04/20	No specific year wise proposal	The position of reserve and resources as on 01/04/2023: 111- 0.748MT 122- 4.429 MT 221- 6.521 MT 222- 2.318 MT 333- 23.90 MT	None

1f	General remarks of inspecting officers on geology, exploration etc	2022-23- 425 no.of holes with 61000m From Surface- Proposed bore holes 15no. with 14000m. From UG- Propsed bore holes 410no. with 47000m.	2022-23- Total 590no.of holes drilled with 77116m From Surface-9no. of holes drilles with 4525m. From UG-581no. of holes drilled with 72591m.	There is shortfall in the surface exploration for which violation pointed out.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	Stope Block Proposal N-Series Above 250 200 S-Series Above 250 200 Eastern Above 250 500 Northern Above 250 600 N-Series 120-250 500 S-Series 120-250 500 N-Series 45-120 500 S-Series 45-120 200 N-Series -40-45 500 S-Series -40-45 500 Northern -200--40 1200 Eastern -200--40 1400 Western -200--40 1400 N-Series -200--40 500 S-Series -200--40 500 Exploratory Drive - Vertical Dev 1000 Decline C. Balaria 700 Decline W. Balaria 700 Decline E. Balaria 500 Total 12100	Stope Block Actual N-Series Above 250 183 S-Series Above 250 0 Eastern Above 250 512 Northern Above 250 0 N-Series 120-250 446 S-Series 120-250 0 N-Series 45-120 0 S-Series 45-120 210 N-Series -40-45 467 S-Series -40-45 552 Northern -200--40 1391 Eastern -200--40 1560 Western -200--40 1636 N-Series -200--40 345 S-Series (200--40 492 Exploratory Drive 822 Vertical Dev 872 Decline C. Balaria 697 Decline W. Balaria 712 Decline E. Balaria 0 Total 10,897	There is shortfall in development for which violation of rule 11(1) has been pointed out.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not proposed	Being UG mine not applicable	It is UG mine
2c	Stripping ratio or ore to OB ratio	Not proposed	Being UG mine not applicable	It is UG mine
2d	Quantity of topsoil generation in m3	Not Proposal	Being UG mine not applicable	It is UG mine. No such activities on surface has been carried out.

2e	Quantity of overburden generation in m3	No proposal for Overburden. However, a total of 292000(108148 m3) tonnes of waste has been proposed to generate through UG development	A total of 325753 (120650m3) tonnes of waste has been generated.	Waste generation is more than the proposal. Violation of rule 11(1) has been pointed out.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			This is U/g Mine, the development in UG carried out for ramp, stopes etc. The waste generated during the year is more than the proposal for which violation of rule 11(1) has been pointed out.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	No proposal. of production through pit. However, a total 15 stopes block at different level has been proposed for production	Production from 11 block has been carried out	
3b	Quantity of ROM mineral production proposed	A total of 11500000 tonnes of ore production from UG mine	871397 tonnes of ore produced from UG mine	Less production in account of less development
3c	Recovery of sailable/usable mineral from ROM production	Whole ROM to be send for beneficiation	Whole ROM sent for benificiation	Nil
3d	Quantity of mineral reject generation	1080000 tonne of mineral reject in tailing	798303 tonne of mineral reject generated in the form of tailing reject	Nil

3e	Grade of mineral rejects generation and threshold value declared.	No proposal. No threshold value has been declared for Lead and Zinc Minerals.	Tailing reject of 798303 tonnes with 0.38%(PB-Zn) generated	Nil
3f	Quantity of sub grade mineral generation.	No proposal for sub-grade generation	No sub-grade generation during the year	Nil
3g	Grade of sub grade mineral generation	No proposal as there is no proposal for sub-grade generation	Not applicable	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	No proposal for segregation of ROM	Entire ROM is being beneficiated	Nil
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No fresh proposal of any beneficiation study	Beneficiation of entire ROM is being carried out.	Beneficiation facility of 4.8mtpa is already exist within the lease.
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 have been carried out as per proposal in UG development and stopes.	Nil
3k	Provision of mining machineries in mineral benches	Being UG mine no such proposal of machineries in mineral benches. However machineries proposed for U/G mine	Twin Boom Jumbo, Loaders, LPDT, LHD, Grader 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.
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	Nil

3m	Total area covered under excavation/pits	Not applicable being a UG mining operation	Not applicable		Nil
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable being a UG mining operation.	Not applicable		Nil
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 Community development-8.71 Others-19.90 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 Community development-8.71 Others-19.90 Total-380.12		For all the Zawar lease
3p	Production of ROM mineral during the last five year period as applicable	2018-19 750000 2019-20 960000 2020-21 960000 2021-22 1150000 2022-23 1150000	2018-19 582024 2019-20 492058 2020-21 726877 2021-22 961816 2022-23 871397		Due to less development the production is less than the approved proposal .
3q	General remarks of inspecting officers on method of mining etc.	UG method of mining proposed	Method of mining as proposed is being implemented.		The method of mining is suitable to the type of deposit. No issue related to method of mining observed

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
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4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	No proposal of top soil and Mineral Reject generation. U/G waste is proposed to dispose in UG stopes as well as for tailing dam construction.	Top soil and Mineral Reject has not been generated during the reporting year. Waste generated during the year has been dumped as per proposal.	798303 tonnes of mineral reject in the form of tailing generated
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 as well as for tailing dam construction.	Top soil and Mineral Reject has not been generated during the reporting year. Waste generated during the year has been dumped as per proposal.	798303 tonnes of mineral reject in the form of tailing generated
4c	Number of dumps within lease area and outside of lease area	No proposal of waste dumping within & outside lease area. No proposal of waste dumping outside lease area.	No waste has been dumped on surface within & outside lease area.	Old waste dump within lease area has been converted to Stadium and Rock Garden
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	No proposal	Not applicable as Mining operations are being carried out through UG mining method.	Nil
4e	Number of active and alive dumps.	No proposal	Not applicable as there is no proposal	Nil
4f	Number of dead dumps.	No proposal	Not applicable as there is no proposal	Nil
4g	Number of dumps established.	No proposal	Not applicable as there is no proposal	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	No proposal	Not applicable as no waste dump within or Outside Mine boundary.	Nil
4i	Length of Retaining wall or garland drain all along dumps	No proposal	Not applicable as no waste dump within or outside Mine boundary.	Nil

4j	Number of settling ponds	No proposal	Not applicable as there was no proposal	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 has been disposed off as per proposal	No issue observed related to waste dump management

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.	U/G development waste dumping proposed in U/G mined out stopes after full extraction of mineral.	In stope waste dumping was observed after full extraction of mineral.	Nil
5b	Area under backfilling of mined out area	A quantity of 282000 MT has been proposed to dispose in UG stopes voids.	A quantity of 321583 MT has been dispose in UG stopes voids	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal of topsoil generation during reporting year.	No topsoil has been generated during the year.	Nil
5d	Total area fully reclaimed and rehabilitated	No proposal for Reclamation and or rehabilitation	Not applicable	
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Backfilling by waste dumping in UG voids proposed	Dumping of waste in UG voids has been carried out	Nil

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
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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 on 27/06/2023	Nil
6b	Area available for rehabilitation (ha) .	No specific proposal	Not applicable	Nil
6c	afforestation done (ha).	5ha	5ha	Gap filling plantation
6d	No. of saplings planted during the year	5000	5190 sapling planted	Gap filling plantation
6e	Cumulative no .of plants	No specified proposal	447815 plants	For whole Zavar lease.
6f	Any other method of rehabilitation	No proposal	No other than plantation	Except plantation, no other method of rehabilitation observed
6g	Cost incurred on watch and care during the year	No specific proposal	Cost of Rs.577400/- incurred on watch & care.	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	133000m ³	25249m ³	Less void generated due to less production
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	524800m ³	183428m ³	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on 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.	No rpoosal	Not applicabl	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	5 ha	5 ha	For whole Zawar lease
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	No proposal	Not applicable	Nil
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Plantation	Plantion	Plantation in gap filling
6p	Compliance of environmental monitoring (core zone and buffer zone)	Proposal for environment monitoring given	Provision of environment monitoring stations has been given.	6e Compliance of Environmental monitoring (core zone & 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.	A total of 5000 number sapling has been proposed to plant.	A total of 5190 number sapling 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.	Whole 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	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 .	The beneficiation process includes mainly crushing and grinding of ROM, Classification , differential flotation cell etc.	4.7MTPA Beneficiation plant has been installed within the lease area	Beneficiation process for all the 4 mines with in the lease has been observed as per the proposal.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No proposal of fresh beneficiation study	Beneficiation of whole ROM is being carried out at beneficiation plant located within the lease area	No issues related to mineral conservation & beneficiation observed

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal of top soil generation	Not applicabel	Being UG mine no top soil generation
8b	Concurrent use or storage of topsoil	No proposal	Not applicable	Being UG mine, there is no top soil generation
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	No proposal for Overburden, rejects & fine. Proposal for waste rock disposal in UG stopes & tailing dam construction	The waste rock generated has been disposed off in mined out stopes as per proposal	Nil

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal except use of waste rock in filling the mined out stopes	Waste rock generated during the year has been disposed off in mined out UG stopes.	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal	Being UG mine no 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.	5190 saplings have been planted in 5 ha as a gap filling in entire Zawar lease	Nil
8g	Survival rate	No specific proposal for survival rate	80% plants have survived	Nil
8h	Water sprinkling on roads to control airborne dust	To suppress the dust, proposal for water sprinkling over road has been proposed	Water sprinkling has been observed with fixed water sprinklers at Crusher and stockpile 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	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.	A total of 5190 numbers of saplings planted during 2022-23.	Aesthetic beauty in around mine area is satisfactory

Compliance of Rule 45:

Sl.No.	Item	Proposals	Actual work	Remarks
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9a	Status of submission of Monthly and Annual returns	As per rule 45 of MCDR,2017 Monthly and Annual returns 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	Information on Mining Enginner, Geologist & Manager to be given by the lessee in Annual return	Information on Mining Enginner, Geologist & Manager has been given by the lessee in Annual return. Mining Engineer- Prashant Gupta Geologist- Ashutosh Pathak Manager- Satish Thakare	Mining Enginner, Geologist & Manager have been appointed .
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 land use details are for entire Zawar lease.	Nil
9d	Scrutiny of Annual return on afforestation	Information on afforestation to be given	Information is given in Part V(5) of Annual return. Afforestation done in 5 Ha with 5190 saplings as Gap Filling	This is for entire Zawar lease
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	There is no mineral reject as specified in Part V(3) of Annual Return	The information about reject in the form of tailing reject is given. The Quantity is 798303 MT with grade of 0.38%	For grade related issue Show Cause notice under rule 45(7) has been issued
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Information is given under Part-VI(1) of Annual return	Found in order	Nil

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 is given as Rs.3666.0 & Production cost Rs.5126.55/- per tonne.	The discrepancy is pointed out in the form of show cause notice	Show cause notice fo violation of rule 45(7) of MCDR,2017 has been issued
9h	Scrutiny of Annual return on fixed assets	The information on fixed asset has been given	Details of fixed assets submitted in Annual Return .The Value of Fixed Assets: Rs.3638173735	The discripancy observed has been pointed out through Show Cause notice under rule 45(7) of MCDR,2017
9k	Scrutiny of Annual return on mining machineries	The detail information on mining machineries is given	The information furnished on mining machineries appears 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
MCDR17	Rule 11(1)	06-OCT-23	14-DEC-23			
	Rule 45(7)	06-OCT-23	14-DEC-23			

Date :

(DR A Z KHAN)

Indian Bureau of Mines