INDIAN BUREAU OF MINES
MINERALS DEVELOPMEMT AND REGULATION DIVISION

MCDR INSPECTION REPORT

Gandhinagar regional office

Mine file No : RAJ/UDP/LZ-3 **Mine code : 34RAJ26001**

(i) Name of the Inspecting Officer and ID No. : **DJ03) DILIP JAIN**

(ii) Designation : Senior Mining Geologist

(iii) Accompaning mine Official with Designation : Sri Mithilesh Kumar, Mine Manager and Shashi Bhushan

(iv) Date of Inspection : 27-OCT-20

(v) Prev.inspection date : 16-JAN-20

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 correspondance : PO- ZAWAR
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	:	Shri Kishore S Mochia Pb_zn Mine, Post: Zawar, Udaipur Rajasthan UDAIPUR RAJASTHAN Phone: FAX : 0294-2412545

Mining Engineer

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

Geologist

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

Manager

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

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

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. 2018-19 a total of 34000mts of drilling proposed from UG and urface exploration.	During the year 2018-19 a total of 33724 mts. of drilling were carried out from UG and surface exploration.	No Backlog.
1b	Exploration over lease area for geological axis 1 or 2	A total of 460 BHs with 41000 mts of drilling was proposed.	A total of 479 BHs with 68052 mts of drilling was carried out.	NIL.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Agency: M/s Hindustan Zinc Limited. No specific proposal about expenditure.	Agency: M/s Hindustan Zinc Limited. Expenditure was around Rs. 1263.07 lacs.	Expenditure figures are as reported during mine inspection.
1d	Balance area to be explored to bring Geological axis in 1 or 2	An area of 0.20 Ha of G3 level has been proposed to explore in G1 and G2 level.	An area of 0.18 Ha. upgraded to G1/G2 level of exploration.	NIL.
1e	Balance reserve as on 01/04/20	As per approved document dated 17/12/2019, the position of reserve on 01/04/2019 was 2.443 million tonnes.	The position of reserve as on 01/04/2020 was 1.95 million tonnes.	Depletion of 492058 tonnes ore.
1f	General remarks of inspecting officers on geology, exploration etc	A total of 460 BHs with 41000 mts of drilling was proposed.	A total of 479 BHs with 68052 mts of drilling was carried out.	A resource of 22.261 million tonnes yet to convert in reserve.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks

2a	Location of development w.r.t.lease area	Development has been proposed for S series, N series, Western, Northern lens etc. at various mRL. A total of 10000 mts of development was proposed.	Development has been carried out for S series, N series, Western, Northern lens etc. during the RY, a total development of 9071.3 mts has been carried out.	Less development meterage due to COVID-19 Pandemic and equipment delay.
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.	Top soil has not been generated during the RY i.e. 2019-20.	NIL.
2e	Quantity of overburden generation in m3	A total of 235000 MT of waste has been proposed to generate through UG development.	A total of 226334 MT of waste has been generated.	Less waste generation in account of less development.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Development has been proposed through UG mining operation.	The UG mechanised method has been adopted for carrying out mining operations is best suited method to the type of deposit.	No issue related to method of development.

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	960000.00 tonnes.	492058.00 tonnes.	Less production in account of less development and delay in arrival of machines.
3c	Recovery of sailable/usable mineral from ROM production	960000.00 tonnes.	492058.00 tonnes.	Less production in account of less development and delay in arrival of machines.
3d	Quantity of mineral reject generation	No proposal of Mineral Reject generation.	Entire ROM is subject to beneficiation.	A quantity of 451191.00 tonnes (mill tailing) has been reported as mineral reject.
3e	Grade of mineral rejects generation and threshold value declared.	Not applicable as no proposal.	0.71% (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.	Entire 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 4.7 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	Not applicable being an underground mine.	Not applicable.	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	No specific mine wise proposal. However, an area of 296.97 Ha. has been proposed to put in use at the end of reporting year.	An area of 254.52 Ha. has been put in use at the end of the year 2019-20. Further, an area of 45.07 Ha. has been declared as reclaimed and rehabilitated.	Figures are for entire Zawar Lease area.
3p	Production of ROM mineral during the last five year period as applicable	2015-16: 340000 2016-17: 455000 2017-18: 550000 2018-19: 750000 2019-20:960000	2015-16: 318335 2016-17: 421700 2017-18: 471291 2018-19: 582024 2019-20:492058	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.	No issue observed related method of mining.

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 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 dumped as per proposal. Mill tailing of 451191 MT has been reported as Mineral reject.	NIL.
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 was not generated during the reporting year. Waste generated during the year has been dumped as per proposal. Mill tailing was disposed in tailing dam.	Mill tailing 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 Balaria Mine.	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.	No proposal of active and alive waste dumping other than disposal of waste for tailing dam construction.	No waste was transported for for tailing dam construction and waste of 226334 MT was disposed in stope out area.	Total waste generation was 226334.00 tonnes.
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.	NIL.
4i	Length of Retaining wall or garland drain all along dumps	No proposal of retaining wall and garland drain.	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 for the year 2019-20.	NIL.

5b	Area under backfilling of mined out area	No specific proposal on area of backfilling. A quantity of 225000 MT of waste was proposed to dispose in UG stopes.	Waste quantity of 226334 MT has been dispose in UG stopes.	Less disposal of waste in stope 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 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 for the year 2019-20.	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.	Annual PMCP report for the year i.e. 2019-20 was not submitted.	Violation of rule 26(2) of MCDR, 2017 was pointed out vide letter dated 12/11/2020.
6b	Area available for rehabilitation (ha) .	4.0 Ha. of waste land.	4.0 Ha. area.	Figures are for entire Zawar Lease area. No mine specific proposal.
6c	afforestation done (ha).	4.0 Ha. of waste land.	4.0 Ha. area.	Figures are for entire Zawar Lease area. No mine specific proposal.
6d	No. of saplings planted during the year	4000 number of saplings.	9000 number of saplings.	Figures are for entire Zawar Lease area. No mine specific proposal.

6e	Cumulative no .of plants	No specific proposal on cumulative number of plants.	Cumulatively 434625 number of saplings were planted as on 01/04/2020.	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 .	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.	As reported, approximately Rs. 52087469/-	Figures are for entire Zawar Lease area
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Underground exhausted stopes.	Underground exhausted stopes were backfilled.	NIL.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	225000 MT	226334 MT	Less disposal of waste in stope in account of less development.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on 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	4000 number of saplings.	9000 number of saplings.	Figures are for entire Zawar Lease area.
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	4.0 Ha.	4.0 Ha.	Figures are for entire Zawar Lease area.
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.	NIL.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Plantation of 4000 no of plants over 4.0 Ha. area.	Plantation of 9000 no of plants over 4.0 ha area.	PMCP implementation was 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 is dispatchable.	Entire ROM ore is being transported/dispatched to Ore beneficiation plant located within lease boundary.	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 .	4.7MTPA 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.	NIL.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	4.7MTPA Beneficiation plant has been installed within the lease area.	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.	Not applicable.	NIL.
8b	Concurrent use or storage of topsoil	Not applicable as no proposal of top soil generation.	Top soil has not been generated during the RY i.e. 2019-20.	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 as per proposal.	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 stoped 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.	Not applicable.	NIL.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	An area of 4.0 Ha has been proposed for plantation with 4000 number of saplings.	During the year a total of 9000 thousand saplings have been planted over 4.0 ha area including gap filling plantation.	NIL.
8g	Survival rate	No proposal on survival rate.	Survival rate was 80 %.	As per AR 2019-20.
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 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	Plantation of 4000 no of plants over 4.0 Ha. area.	Plantation of 9000 no of plants over 4.0 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 2019-20.

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Ana area of 299.59 Ha. has been furnished under different heads.	The information furnished about land use pattern in annual return is found to correct. However, work done under PMCP during year was not furnished.	Violation pointed out vide letter dated 12/11/2020. Information furnished was for overall Zawar lease area.
9d	Scrutiny of Annual return on afforestation	Within ML 9000 Nos of saplings.	Information furnished was found correct.	Figures are for entire Zawar Lease area.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Quantity- 451191 MT Grade- 0.71 % (Pb+Zn)	The quantity of Mineral Reject furnished was actually a quantity of mill tailing.	NIL.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM Closing stock at Mine head- NIL. No graded ore stock.	The information furnished is found in order.	NIL.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex. Mine Price: Rs. 4372.69 per tonne Cost of Production: Rs. 4372.69 per tonne	No sale of mineral only captive use of mineral. Information furnished observed to be corrected.	NIL.
9h	Scrutiny of Annual return on fixed assets	Value of fixed asset is furnished as Rs. 0.	Information is furnished under Mochia Mine	Violation of MCDR issued vide letter dated 12/11/2020.
9k	Scrutiny of Annual return on mining machineries	Load Haul Dumper, Dumper, Rock Drill, Blast Hole Drill, Air Compressor, Pumps, Ventilation fan etc.	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)	12-NOV-20	25-JAN-21	MCDR17 Rule 45(7)	12-NOV-20	02-MAR-21
MCDR17 Rule 26(2)	12-NOV-20	25-JAN-21			
MCDR17 Rule 35(2)	12-NOV-20	25-JAN-21			
MCDR17 Rule 45(7)(a)	12-NOV-20				

Date :

(**DILIP JAIN**)

Indian Bureau of Mines