

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

MCDR INSPECTION REPORT

Ajmer regional office

Mine file No : RAJ/AJM-315/Pb.Zn-1

Mine code : 34RAJ01001

- (i) Name of the Inspecting : **G021**) **D R GURJAR**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Sh. Siyaram Meena, Manager and Sh. Vijendra Kashyap, G
Official with
Designation
- (iv) Date of Inspection : 17-MAR-23
- (v) Prev.inspection date : 28-NOV-22

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **KAYAR**
- (b) **Registration NO.** : **IBM/421/2011**
- (c) **Category** : A Fully Mechanised
- (d) **Type of Working** : Underground
- (e) **Postal address**
- State : RAJASTHAN
- District : AJMER
- Village : KAYAR
- Taluka : AJMER
- Post office : KAYAR
- Pin Code : 305023
- FAX No. : 0145-6626266
- E-mail : kastoor.meena@vedanta.co.in
- Phone : 0145-6626232
- (f) **Police Station** : Gegal
- (g) **First opening date** : 12-JAN-98
- (h) **Weekly day of rest** : SUN
2. **Address for correspondance** : M/S Hindustan Zinc Limited
Kayad Lead -Zinc Mine
Village: Kayad, Dist & Teshil : Ajmer
3. (a) **Lease Number** : RAJ1765
- (b) **Lease area** : 480.45
- (c) **Period of lease** : 50
- (d) **Date of Expiry** : 27-FEB-48
4. **Mineral worked** : LEAD & ZINC ORE Main

5. Name and Address of the

Lessee : HINDUSTAN ZINC LTD.
HINDUSTAN ZINC LTD. YASHAD
BHAWAN YASHADGARH, UDAIPUR
UDAIPUR RAJASTHAN
Phone:01483-23331, 23332
FAX :01483-23073

Owner : Mr. Arun Mishra
M/s Hindustan Zinc Ltd.
Yeshad Bhawan,yashadgarh,
P.O.Udaipur, UDAIPUR
RAJASTHAN
Phone: 0294-2427734
FAX : 0294-2427734

Agent : Mr. Kastoor Meena
Kayad Lead -Zinc Mine M/S
Hindustan Zinc Limited ,
Village: Kayad, Dist &
Teshil : AJM AJMER
RAJASTHAN
Phone: 0145-6626230,
FAX : 0145-6626230,

Mining Engineer

Name : Mr. Chinni Ravi,Full Time
Qualification : B.Tech- Mining
Appointment/ : 20-SEP-22
Termination date

Geologist

Name : Sri Vijendra Kashyap,Full Time
Qualification : M.Sc. Geology
Appointment/ : 12-JUN-18
Termination date

Manager

Name : Mr. Siyaram Meena
Qualification :
Appointment/ : 26-SEP-22
Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Modif.of approved Mining Plan	05-DEC-06
		Modif.of approved Mining Plan	07-MAY-13
		MP modif under MCR 1960	20-MAY-16
		MP modif under 17(3) MCR 2016	18-OCT-16
		MP modif under 17(3) MCR 2016	03-NOV-17
		MP modif under 17(3) MCR 2016	06-SEP-19
		MP review under 17(1) MCR 2016	25-JAN-21
		MP modif under 17(3) MCR 2016	27-JAN-23

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No proposal.	No backlog of previous year 2020-21.	NIL.
1b	Exploration over lease area for geological axis 1 or 2	A total of 120 BHs with 42000 mts of drilling was proposed during the year 2021-22.	A total of 171 BHs with 74460 mts of drilling was carried out during the year 2021-22.	NIL.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No proposal.	Agency: MAPL Expenditure: Rs. 51228200	NIL.
1d	Balance area to be explored to bring Geological axis in 1 or 2	194.60 Ha	142.61 Ha	NIL.
1e	Balance reserve as on 01/04/20	As per approved Modification of RMP dated 27.01.2023 The position of R & R as on 01.07.2022 Reserve-1.396 million tonnes, Resources-5.048 million tonnes. Total-6.445 million tonnes.	As per approved Modification of RMP dated 27.01.2023 The position of R & R as on 01.07.2022 Reserve-1.396 million tonnes, Resources-5.048 million tonnes. Total-6.445 million tonnes.	Nil
1f	General remarks of inspecting officers on geology, exploration etc	A total of 120 BHs with 42000 mts of drilling was proposed during the year 2021-22.	A total of 171 BHs with 74460 mts of drilling was carried out during the year 2021-22.	Kayad ore body is lensoidal in shape with pinching and swelling in nature. During the year 2021-22, exploration has been carried out more than proposals.

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	Block-3 Main Lens Eastern Fringe K1, Sland K18.	Block-3 Main Lens Eastern Fringe K1 and K18.	The development in S1 lens is postponed due to COVID-19 situation.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable as mining operation has been proposed through U/G Mining Method.	Not applicable.	NIL.
2c	Stripping ratio or ore to OB ratio	Not applicable as mining operation has been proposed through U/G Mining Method.	Not applicable	NIL.
2d	Quantity of topsoil generation in m3	No proposal of top soil generation.	Top soil has not generated during reporting year (RY) 2021-22.	NIL.
2e	Quantity of overburden generation in m3	317000 tons waste generation was planned during development for mining operation through U/G Mining Method.	379124 tons waste was generated during development and used for backfilling of the mined out stopes.	NIL.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Development has been proposed through U/G mining method.	Development has been carried out through U/G mining method.	The underground development has been carried out at different levels and the mechanism adopted for carrying out the mining operation in the lease area is best suited method for the type of deposit.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Not applicable as U/G Mining operation has been proposed by developing stopes with sub-level method.	Not applicable.	NIL.

3b	Quantity of ROM mineral production proposed	1200000 T	933951 T	Less production due to Covid-19 Pandemic.
3c	Recovery of sailable/usable mineral from ROM production	1200000 T	933951 T	Entire ROM was dispatched to Rampura-Agucha Lead-Minc Mine of M/s HZL situated in Bhilwara for beneficiation.
3d	Quantity of mineral reject generation	No proposal.	Not applicable.	NIL.
3e	Grade of mineral rejects generation and threshold value declared.	No proposal.	Not applicable.	NIL.
3f	Quantity of sub grade mineral generation.	No proposal.	Not applicable.	NIL.
3g	Grade of sub grade mineral generation	No proposal.	Not applicable.	NIL.
3h	Manual / Mechanised method adopted for segregating from ROM	No proposal.	Not applicable.	NIL.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal.	Not applicable.	NIL.

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| 3j | Provision of drilling and blasting in mineral benches | Parallel holes drilling for the slot raise with 76mm / 89mm /115mm dia. holes was proposed with blasting in lifts of 1.5 to 5.0 m by drop raising method in single shot. With slot raise as the initial free face, the parallel holes in slot will be blasted to full width of ore body to create the free face for the ring blasting. ANFO & Emulsion explosives with electronic detonators shall be used for blasting of holes. | Proposed method is adopted for drilling & blasting for development and stopes mining. | NIL. |
| 3k | Provision of mining machineries in mineral benches | After blasting, the broken ore was proposed to drawn using 17T / 21T capacity diesel LHDs. The drawn ore will be directly loaded into 30t / 50t / 60t / 65t LPDT. Transportation for beneficiation at Rampura Agucha Mine is through trucks. | Proposed method is in use without any change. Remote control operation of the LHD is also in use to recover ore from the stopes. | NIL. |

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Level difference of 20 to 30m and stopes dimension of 25-30m along strike are proposed.	Proposed method is in use.	NIL.
3m	Total area covered under excavation/pits	Not applicable being an U/G mine.	No change in use of surface area after the approval of previous document.	NIL.
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable being an U/G mine.	Not applicable.	NIL.
3o	Total area put in use under different heads at the end of year	Used for waste disposal 1.0ha, Occupied by plant, buildings, residential, welfare buildings & roads 5.40ha, Other Purpose (Top soil, mineral stock, green belt, solar panel, open spaces) 42.10ha.	Used for waste disposal 1.0ha, Occupied by plant, buildings, residential, welfare buildings & roads 5.40ha, Other Purpose (Top soil, mineral stock, green belt, solar panel, open spaces) 42.10ha.	NIL.
3p	Production of ROM mineral during the last five year period as applicable	2017-18 : 1200000T, 2018-19 : 1200000T, 2019-20: 1200000T, 2020-21:1200000T 2021-22: 1200000T and 2022-23: 748456T	2017-18 : 1200000T, 2018-19 : 1199592T, 2019-20 : 1139071T, 2020-21 : 1174824T and 2021-22 : 931951T and 2022-23: 583251T(till feb-2023)	NIL.
3q	General remarks of inspecting officers on method of mining etc.	U/G Method of Mining has been proposed.	The method of mining is suitable for type of deposit.	The method of mining adopted is best suitable for the type of deposit.

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)	Top soil - No proposal, OB- No proposal, Waste Dump-1. Waste dump was created for the purchased waste for backfilling in U/G stopes. Waste generation from U/G Mine development is proposed for backfilling.	Top soil-Nil, OB-Nil, Waste dump-1. Waste dump was created for the purchased waste for backfilling in U/g stopes. Presently, waste generated from U/g development is used for backfilling and so no dumping proposal.	NIL.
4b	Location of topsoil, OB and mineral reject dumps	No proposal.	Not applicable.	NIL.
4c	Number of dumps within lease area and outside of lease area	One within ML area	One within ML area	NIL.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable as mining operation has been proposed through U/G Mining Method.	Not applicable.	NIL.
4e	Number of active and alive dumps.	Waste Dump-1 for purchased quantity of waste on surface.	Waste Dump-1	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 or garland drain was observed along the waste 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.	No proposal.	NIL.

4k	Specific comments of inspecting officer on waste dump management	Waste has been proposed to backfilling in mined out stopes.	Waste dump on surface is temporary and the complete waste generated from UG mining is utilised for backfilling in mined out stopes.	No issue related to waste dumping.
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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 in mined out stopes after full extraction of mineral was proposed.	Waste backfilling was observed after full extraction of mineral in mine out stopes during the year 2021-22	NIL.
5b	Area under backfilling of mined out area	No specific proposal on area of backfilling. A quantity of 650000 T of waste was proposed to dispose in UG stopes.	A total waste quantity of 648800 MT was disposed in UG stopes including quantity of 269676 MT of purchased waste.	NIL.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal.	Not applicable.	NIL.
5d	Total area fully reclaimed and rehabilitated	No proposal.	Not applicable.	NIL.
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Backfilling in mined out stopes after full extraction of mineral was proposed.	Backfilling as per proposal during RY.	No issue was observed related to backfilling or waste disposal.

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 the year i.e. 2021-22 was submitted on 31.05.2022.	NIL.
6b	Area available for rehabilitation (ha) .	No proposal.	Not applicable.	No additional area available for plantation and only Gap Filling plantation
6c	afforestation done (ha).	NIL.	NIL.	No additional area available for plantation and only Gap Filling plantation
6d	No. of saplings planted during the year	1500 nos.	4000 nos.	NIL.
6e	Cumulative no .of plants	No specific proposal on cumulative number of plants.	Cumulatively 47100 number of saplings were planted as on 01/04/2022.	NIL.
6f	Any other method of rehabilitation	No proposal.	Not applicable.	NIL.
6g	Cost incurred on watch and care during the year	No proposal.	Rs. 285000/-	NIL.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	A quantity of 650000 T of waste was proposed to dispose in UG stopes.	A total waste quantity of 648800 MT was disposed in UG stopes including purchased waste quantity of 269676 MT.	NIL.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	A quantity of 650000 T of waste was proposed to dispose in UG stopes.	A total waste quantity of 648800 MT was disposed in UG stopes including purchased waste quantity of 269676 MT.	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 proposal.	Not applicable.	NIL.
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	1500 number of saplings.	4000 number of saplings.	Only Gap filling
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	NIL.	NIL.	No additional area available for plantation and only 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)	Air, Noise, vibration and water quality testing to be done quarterly in proposed location.	Testing is being done as per proposal.	NIL.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	A total of 1500 number of saplings were proposed to plant.	A total of 4000 number of saplings were planted.	PMCP complinace is satisfactory.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
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7a	ROM Mineral dispatch or grade-wise sorting within lease area	Entire ROM to Rampura Agucha Mine for further processing.	Entire ROM proposes to dispatch to Rampura Agucha Mine for further processing.	NIL.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	No proposal.	Not applicable.	NIL.
7c	Different grade of mineral sorted out at mines.	No proposal.	Not applicable.	NIL.
7d	Any beneficiation process at mines	No proposal.	Not applicable.	NIL.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No proposal of beneficiation and generation of mineral reject.	Entire ROM is being dispatched to Rampura Agucha Mine for further beneficiation.	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. 2021-22.	NIL.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	OB Dump-Nil, Waste Dump-01, Reject-Nil.	OB Dump-Nil, Waste Dump-01 for purchased waste, Reject-Nil.	NIL.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Waste produced is proposed to dispose in Mined out U/G stopes.	Waste Produced is backfilled in Underground mined out stopes.	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)	1500 No of saplings have been proposed to plant during the RY 2021-22.	4000 No of saplings have been planted during the RY 2021-22.	NIL.
8g	Survival rate	No specific proposal given.	Survival rate was 90%.	NIL.
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.	NIL.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	A total of 1500 number of saplings were proposed to plant.	A total of 4000 number of saplings were planted.	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 2017, monthly and annual returns to be submitted.	Monthly and annual returns have been submitted for reporting year on time.	NIL.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Information on Mining Engineer, Manager and geologist have been furnished.	Mines Manager, Mining engineer and Geologist have been appointed.	NIL.

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Used for waste disposal-1.0 Ha., Occupied by plant, buildings, residential, welfare buildings & roads-5.4 Ha., Other Purpose -42.100 Ha.	Furnished details found to be in order.	NIL.
9d	Scrutiny of Annual return on afforestation	4000 number of plants within lease area.	Found to be correct.	NIL.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil information has been furnished under head of Mineral Reject.	Mineral Reject has not been generated.	NIL.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Opening and Closing Stock of ROM under the mine head are given as 10083 and 7476 tonnes respectively.	Found to be correct.	NIL.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex. Mine Price-4654.00 Rs./t, Cost of Production-4654.00 Rs./t	Furnished details found to be in order.	NIL.
9h	Scrutiny of Annual return on fixed assets	Value of fixed asset is furnished as Rs.1908708468 /-	Found to be correct.	NIL.
9k	Scrutiny of Annual return on mining machineries	Mining Machineries details have been furnish in A/R 2021-22.	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

Date :

(D R GURJAR)

Indian Bureau of Mines