

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

MCDR INSPECTION REPORT

Gandhinagar regional office

Mine file No : RAJ/RJS/LZ-1

Mine code : 34RAJ27002

- (i) Name of the Inspecting : **K018**) **DR A Z KHAN**
Officer and ID No.
- (ii) Designation : Regional Mining Geologist
- (iii) Accompanying mine : Sh. Ashok Kumar Godugu, Production Head
Official with
Designation
- (iv) Date of Inspection : 28-JUN-24
- (v) Prev.inspection date : 28-AUG-19

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **SINDESAR KHURD**
- (b) **Registration NO.** : **IBM/421/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Underground
- (e) Postal address
- State : RAJASTHAN
- District : RAJSAMAND
- Village : SINDSAR KHURD
- Taluka : RAIL MAGRA
- Post office : DARIBA
- Pin Code : 313211
- FAX No. : 02952-265143
- E-mail : sunil.duggal@vedanta.co.in
- Phone : 02952-265275
- (f) Police Station : Dariba
- (g) First opening date : 09-AUG-00
- (h) Weekly day of rest : SUN
2. Address for : RAJSAMAND
correspondance Tehsil - Railmagra
Rajasthan
3. (a) Lease Number : RAJ1749
- (b) Lease area : 199.84
- (c) Period of lease : 30
- (d) Date of Expiry : 19-MAR-29
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 : Shri Arun Misra
 YASHAD BHAWAN HINDUSTAN
 ZINC LIMITED Udaipur
 UDAIPUR RAJASTHAN
 Phone: 0294-2421420
 FAX : 0294-2412545

Agent : Shri Anshul Kumar Khandelwal
 Sindesar Khurd Mine Dariba
 Rajsamand RAJSAMAND
 RAJASTHAN
 Phone:
 FAX :

Mining Engineer

Name : Dushyant Tailor, Full Time
 Qualification : BE(Mining) & FCC(U/R)
 Appointment/ : 12-JUL-18
 Termination date

Geologist

Name : Shri Pankaj Kumar, Full Time
 Qualification : M.Sc. (Applied Geology)
 Appointment/ : 10-OCT-19
 Termination date

Manager

Name : Shri Vignesh Kumar K
 Qualification : BE(mining)
 Appointment/ : 10-JUN-23
 Termination date

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|---|---|--------------------------------|-----------|
| 6. Date of approval of Mining Plan/Scheme of Mining | : | Mining Scheme rule 12 MCDR1988 | 10-JUL-02 |
| | | Mining Scheme rule 12 MCDR1988 | 27-JUL-06 |
| | | Modif.of approved Mining Plan | 29-JAN-09 |
| | | Mining Scheme rule 12 MCDR1988 | 23-JUL-13 |
| | | MP modif under 17(3) MCR 2016 | 01-DEC-17 |
| | | MP modif under 17(3) MCR 2016 | 01-AUG-19 |

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

| Sl.No. | Item | Proposals | Actual work | Remarks |
|--------|---|--|--|--|
| 1a | Backlog of previous year | 2022-23 UG Exploration Proposed 85000 m with No of BH-800 Surface Exploration 10000 m with No of BH-10 | 2022-23 UG Exploration done 75509 m with No of BH 402 2022-23 SF Exploration done 25097 m with No of BH 37 | Violation pointed out after inspection in the year 2023-24 |
| 1b | Exploration over lease area for geological axis 1 or 2 | 2023-24 UG Exploration: 85000m & No of BH-500 Surface Exploration: 5000m & No of BH-6 | 2023-24 UG Exploration : 69662m & No of BH-462 Surface Exploration: 10933m & No of BH- 10 | UG exploration is less than proposal for which violation of rule 11(1) of MCDR,2017 has been pointed out |
| 1c | Exploration Agencies and Expenditure in lakh rupees during the year | No specific proposal about drilling agency and expenditure | Hindustan Zinc Limited through contractors. Expenditure for Underground exploration was Rs 221878567 /- Expendure for Surface Exploration was Rs. 76100000 /- | Nil |
| 1d | Balance area to be explored to bring Geological axis in 1 or 2 | UG exploration-7.3 Ha SF exploration-7.0 Ha | UG exploration-6.49 Ha SF exploration-7.0 Ha | UG exploration area is less due to less UG exploration. Violation of rule 11(1) of MCDR 2017 has been pointed out for less exploration |
| 1e | Balance reserve as on 01/04/20 | No year wise specific proposal. | As on 01.04.24 total reserve (In Million tons) Reserve-40.04 Resource-68.92 Total R&R- 108.96 | Nil |
| 1f | General remarks of inspecting officers on geology, exploration etc | | | UG exploration is less than proposal for which violation of rule 11(1) of MCDR,2017 has been pointed out. |

Development :

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|--|---|---|
| 2a | Location of development w.r.t.lease area | Total Development (Meter) Proposed Main D-13201 Main-E-5671 SKA1- 2063 SKA11- 2117 SKA2- 592 SKA4- 1138 SKA6- 11011 Total- 35793 | Total Development (Meter) completed Main D -11817 Main-E-6126 SKA1- 3789 SKA11- 0 SKA2- 1399 SKA4- 0 SKA6- 3091 Total- 26222 | Development is less than the proposal for which violation of rule 11(1) has been pointed out. |
| 2b | Separate benches in topsoil, overburden and minerals (Rule 15) | No proposal | Not applicable as mining operation has been carried out through UG Mining Method | Nil |
| 2c | Stripping ratio or ore to OB ratio | No proposal | Not applicable as mining operation has been carried out through UG Mining Method | Nil |
| 2d | Quantity of topsoil generation in m3 | No proposal | Not applicable as mining operation has been carried out through UG Mining Method | Nil |
| 2e | Quantity of overburden generation in m3 | No proposal for OB. A total of 625607 cum or 1751702 MT tons of UG waste has been proposed to be generate through UG development. | Being UG mine there is no OB. A total of 520236 cum or 1456661 MT of waste generated through UG development out of which 272067 cum or 761787 MT was dumped at surface, rest waste muck was internally dumped into the stopes for backfilling | Less waste generation due to less development. Violation of rule 11(1) of MCDR.2017 has been pointed out for less development |
| 2f | General remarks of inspecting officers on development of pit w.r.t. type of deposit etc | | | The method of development proposed is suitable for the type of the deposit. Development is less than the proposal for which violation of rule 11(1) has been pointed out. |

Exploitation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|------|-----------|-------------|---------|
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| 3a | Number of pit proposed for production | No Pit wise proposal | Not applicable as the production is proposed & carried out from the underground mining | Nil |
| 3b | Quantity of ROM mineral production proposed | 6000000 MT | 5650483 MT | Nil |
| 3c | Recovery of sailable/usable mineral from ROM production | 6000000 MT | 5650483 MT | Nil |
| 3d | Quantity of mineral reject generation | No proposal for mineral reject generation. However, 2587389cum or 5485265 MT reject in the form of mill tailing was proposed | No Mineral Reject generation. Whole ROM beneficiated. After beneficiation 2623282cum or 5561570 MT reject in the form of mill tailing generated during the year. | More Tailing reject is due to more treatment of ore. |
| 3e | Grade of mineral rejects generation and threshold value declared. | No proposal for mineral reject generation. | No mineral reject generation. However, the grade of mill tailing was Zn-0.15% , Pb-0.17% | Nil |
| 3f | Quantity of sub grade mineral generation. | No proposal for sub-grade generation | No sub-grade generated during the year | Nil |
| 3g | Grade of sub grade mineral generation | No Proposal | No sub-grade generated during the year | Nil |
| 3h | Manual / Mechanised method adopted for segregating from ROM | Froth Flotation method proposed | Froth Flotation method adopted for segregation during mineral beneficiation | 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 facility of 6.5MTPA is already in place | Nil |
| 3j | Provision of drilling and blasting in mineral benches | Being UG no proposal for mineral bench. However proposal given for drilling & blasting in UG with Blast hole stoping method | Blast hole stoping method with post filling adopted in mine | Drilling and blasting have been carried out as per proposal in UG development and stopes. |

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| 3k | Provision of mining machineries in mineral benches | Being UG mine there is no proposal for mineral bench. In UG Dumper, Laud haul dumper, Rock Drills, Air Compressors, Blast Hole Drill Machine, Others (Non Elec), Other HEM Machinery being used in UG mining | Dumper, Laud haul dumper, Rock Drills, Air Compressors, Blast Hole Drill Machine, Others (Non - Elec), Other HEM Machinery being used in UG mining | Nil |
| 3l | Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM | Being UG mine there is no such proposal | Not applicable being a UG mine | Nil |
| 3m | Total area covered under excavation/pits | Being UG mine no such proposal | Not applicable being a UG mine | Nil |
| 3n | Ore to OB ratio for the pit/mine during the year. | No proposal | Not applicable being a UG mine | Nil |
| 3o | Total area put in use under different heads at the end of year | Total area of 121.89 hectare has been proposed to put in use under different heads at the end of the year 2023-24 | An area of 120.98 ha. has been utilized under different heads at the end of the year 2023-24 | Nil |
| 3p | Production of ROM mineral during the last five year period as applicable | 2019-20: 6000000 MT 2020-21: 6000000 MT 2021-22: 6000000 MT 2022-23: 6000000 MT 2023-24: 6000000 MT | 2019-20: 5077640 MT 2020-21: 4842247 MT 2021-22: 5230488 MT 2022-23: 5598709 MT 2023-24: 5650483 MT | Nil |
| 3q | General remarks of inspecting officers on method of mining etc. | | | The method of mining proposed is suitable for the type of the deposit and to recover maximum ore from the UG. |

Solid Waste Management - Dumping:

| Sl.No. | Item | Proposals | Actual work | Remarks |
|--------|--|--|--|---------|
| 4a | Separate dumping of topsoil, OB and mineral rejects (Rule 32,33) | No proposal of topsoil. Proposed UG waste generation is 625607 cum or 1751702 MT, out of which 27846 cum Waste is proposed to dispose in UG stopes voids and 597761 cum on surface dumping. 2587389cum or 5485265 MT reject (Mill tailing) generation has been proposed. Out of which 883904 cum utilization & 1703485 cum disposal in Tailing Pond. | Being UG mine no Topsoil generation. 520236 cum or 1456661 MT waste generated. Out of which 272067 cum or 761787 MT dumped on surface Dump and rest of the waste dumped in UG voids. 2623282cum/ 5561570 MT reject in the form of tailing reject generated . Out of this 1573969 cum/3336815MT utilized and rest quantity dumped in Tailing Dam. | Nil |
| 4b | Location of topsoil, OB and mineral reject dumps | No Top soil dump. Location of Waste dump is 2765716N to 2766204N, 413915E to 413846E and Tailing Reject in Tailing Dam | No Top Soil generation. UG waste dumped on location 2765716N to 2766204N, 413915E to 413846E and Tailing Reject dumped in Tailing Dam | Nil |
| 4c | Number of dumps within lease area and outside of lease area | 01 Waste Dump proposed within lease area | 01 Waste Dump exist within lease area | Nil |
| 4d | Location of dumps w.r.t. ultimate pit limit (Rule 16) | Being UG mine No such proposal | Being UG mine not applicable. | Nil |
| 4e | Number of active and alive dumps. | Proposed for One active dump within lease area | One active dump exist within lease area | Nil |
| 4f | Number of dead dumps. | No proposal | None | Nil |
| 4g | Number of dumps established. | No proposal | None | Nil |

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| 4h | Whether Retaining wall or garland drain all along dumps are there. | No proposal for the year 2023-24 | As there was no proposal no work done for retaining wall & Garland drain | Nil |
| 4i | Length of Retaining wall or garland drain all along dumps | No proposal for the year 2023-24 | Not applicable | Nil |
| 4j | Number of settling ponds | No proposal for the year 2023-24 | Not applicable | Nil |
| 4k | Specific comments of inspecting officer on waste dump management | Waste is proposed to dispose in UG stopes voids as well as surface dumping on existing waste | Waste has been disposed off in UG stopes voids and surface dumping on existing waste dump | Waste dump management has not been carried out properly by spreading waste over dump and forming terraces for which violation of rule 11(1) of MCDR,2017 has been pointed out. |

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 by UG waste & paste filling in UG stopes voids have been proposed after full extraction of mineral | Backfilling by UG waste & paste filling in UG stopes voids have been carriedout after full extraction of mineral | Nil |
| 5b | Area under backfilling of mined out area | 1203081 cum area of UG mined out voids proposed for backfilling | 1525303cum area of UG mined out voids backfilled | More area available is because of backlog of previous years was also available for backfill |
| 5c | Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32) | No proposal of topsoil generation during reporting year. | Being UG mine no topsoil has been generated during the year. | Nil |
| 5d | Total area fully reclaimed and rehabilitated | No proposal of full reclamation and rehabilitation | Not applicable as there was no proposal | Nil |

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| 5e | General remarks of inspecting officers on backfilling and reclamation etc. | After full extraction of mineral, backfilling by waste dumping & Paste filling in UG voids have been proposed. | After full extraction of mineral, backfilling by waste dumping & Paste filling in UG voids have been carried out during the year | During inspection no issue related to backfilling 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., 2023-24 is submitted | Nil |
| 6b | Area available for rehabilitation (ha) . | No proposal | Not applicable as there was no proposal | Nil |
| 6c | afforestation done (ha). | Proposal was for 0.50 Ha | During the year afforestation done in 0.50 Ha area | Nil |
| 6d | No. of saplings planted during the year | Plantation of 1250 sapling proposed | During the year 3000 sapling planted | Fresh plantation & Gap Filling |
| 6e | Cumulative no .of plants | No specific proposal was given | Cumulative no. of plants is 112350 | Nil |
| 6f | Any other method of rehabilitation | Other than plantation, no specific proposal of any other method of rehabilitation | Not applicable as there was no proposal | Nil |
| 6g | Cost incurred on watch and care during the year | Expenditure of Rs. 210000 proposed | During the year 2023-24 expenditure on watch & care of plants is Rs.683579. | Nil |
| 6h | Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D | 1850000 cum voids proposed to be available during the reporting year | Actual 1765775 cum voids available during the year. | Void less available due less production |

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| 6i | Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings | 1203081 cum | 1525303cum | Backlog of previous year was available for backfill |
| 6j | Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area | No proposal | Being UG mine not applicable | Nil |
| 6k | Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir | No proposal | Being UG mine not applicable | Nil |
| 6l | Compliance on reclamation and rehabilitation by backfilling (v)any other specific means. | No proposal | Being UG mine not applicable | Nil |
| 6m | Compliance of rehabilitation of waste land within lease (i)afforestation | 1250 saplings covering 0.50 ha area | 3000 sapling planted in 0.50 ha area | Fresh plantation & Gap Filling |
| 6n | Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha) | 0.50 ha area proposed by plantation | 0.50 ha area rehabilitated by plantation | Nil |
| 6o | Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation | Planation | Planation | Nil |
| 6p | Compliance of environmental monitoring (core zone and buffer zone) | Proposal of environment monitoring in core & buffer zone has been given | Environment monitoring in core & buffer zone is being carried out and parameters are found to be within permissible limit. | Nil |

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| 6q | General remarks of inspecting officers on PMCP compliance and progressive closure operations etc. | An area of 0.50 hectare with 1250 number of saplings | A total of 3000 saplings have been planted in a area of 0.50 hectare as Fresh plantation & Gap Filling | No issue related to compliance of PMCP observed |
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Mineral Conservation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|--|--|---|
| 7a | ROM Mineral dispatch or grade-wise sorting within lease area | No proposal for grade-wise sorting within lease area | Entire ROM ore is being transported to Ore beneficiation plant. | Nil |
| 7b | Method of grade-wise mineral sorting i.e. manual or mechanical. | No proposal for grade-wise sorting within lease area | Entire ROM ore is being transported to Ore beneficiation plant. | Nil |
| 7c | Different grade of mineral sorted out at mines. | No proposal for grade-wise sorting within lease area | Entire ROM ore is being transported to Ore beneficiation plant. | Nil |
| 7d | Any beneficiation process at mines . | No fresh proposal | Currently Three beneficiation plants are in operation with capacity of 3.0mtpa, 2.0mtpa & 1.50mtpa | Nil |
| 7e | General remarks of inspecting officer on Mineral conservation and beneficiation issues | Benefication of ore was proposed | Entire ROM is benificiated to get the concentrate. | No issue 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 removal & utilization of Top Soil | Being UG mine no topsoil generated & utilized during the year | Nil |
| 8b | Concurrent use or storage of topsoil | No proposal | Being UG mine no topsoil generated & utilized during the year | Nil |

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| 8c | Separate dumps for overburden, waste rock, rejects and fines (Rule 33) | No proposal for OB & Fine. Proposed to Dump UG waste at Waste Dump as well as in UG voids & Tailing Reject in Tailing Dam as well as utilized for paste filling | UG waste & Tailing has been disposed as per proposal | Nil |
| 8d | Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use | No specific proposal. Proposal given for filling the UG voids with waste rock | Waste rock used for filling in underground voids, stacking at waste dump yards and Tailing utilized for Paste filling & dump in Tailing Dam | Nil |
| 8e | Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc) | No proposal | Being UG mine there is no pit as well as there is no dead dump for reclamation & rehabilitation. | Nil |
| 8f | Baseline information on existence of plantation and additional plantation done (Rule 41) | An area of 0.50 hectare with 1250 number of saplings. | Cumulative plantation upto last year 109350 covering 31.00 ha area with total expenditure of Rs. 4572856. During the year 2023-24 a total 3000 nos. of saplings were planted with expenditure of Rs. 683579. The cumulative plantation upto 2023-24 is 112350. | Nil |
| 8g | Survival rate | 90% | 90% | 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 | Water sprinkling has been observed during inspection | Nil |

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| 8i | General remarks of inspecting officer on aesthetic beauty in and around mines area | Waste rock & Tailing Reject proposed to dispose in stoped out area and surface dumping on waste dump & Tailing Dam | As per proposal the Waste rock & Tailing Reject disposed in stoped out area and surface dumping on waste dump & Tailing Dam | Aesthetic beauty in and around mine is satisfactory as the working is being carried out through UG mining method. |
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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, holder of mining lease should submit Monthly and Annual return in prescribed format. | Monthly and Annual return of the year 2023-24 has been submitted by the lessee | Nil |
| 9b | Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager | Information of Mining Engineer, Geologist and Manager has been furnished | As per rule the Mining Engineer, Geologist and Mine Manager have been appointed at the mine. | Nil |
| 9c | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | Details of land use pattern given | Seems to be OK | Nil |
| 9d | Scrutiny of Annual return on afforestation | Information of plantation of 3000 number of saplings has been furnished. | 3000 number of saplings have been planted during the year against the target of 1250 | Nil |
| 9e | Scrutiny of Annual return on mineral reject generation (Grade and quantity) | No Mineral Reject generation during the year | Whole ROM beneficiated and 5561570 MT of tailing with grade Pb-0.15%, Zn-0.17% generated during the year | Nil |
| 9f | Scrutiny of Annual return on ROM stock and/or graded ore | Closing Stock of ROM- 21338 MT with grade Pb-2.06%, Zn-3.07% | Seems to be OK | Nil |

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| 9g | Scrutiny of Annual return on sale value, Ex. Mine price and production cost | 5802.13 Rs/per Tonne Ex mine price & Production cost given | Exmine price & production cost given. Being captive use sale value is not given. | Nil |
| 9h | Scrutiny of Annual return on fixed assets | The value of Fixed Asset given as Rs. 5349.90 crores | Seems to be OK | Nil |
| 9k | Scrutiny of Annual return on mining machineries | Details of mining machineries given | LHD, LPDT, Dumper, Explosive Van, Rock Drill, Blast Hole Drill, Water Tanker, Pumps, Air Compressor, Ventilation Fan etc. given in AR | 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) | 29-JUL-24 | 22-AUG-24 | | | |

Date :

(DR A Z KHAN)

Indian Bureau of Mines