

**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 : **K010**) **Kotriwal B.L.**
Officer and ID No.
- (ii) Designation : Regional Controller Mines
- (iii) Accompanying mine : Sh. Sanjay Sharma, Mine Agent
Official with
Designation
- (iv) Date of Inspection : 28-AUG-19
- (v) Prev.inspection date : 19-JUN-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 : 50
- (d) Date of Expiry : 19-MAR-49
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 : SUNIL DUGGAL
 YASHAD BHAWAN UDAIPUR
 UDAIPUR RAJASTHAN
 Phone: 0294-6604120
 FAX : 0294-6604120

Agent : Vinod Jangir
 Sindesar Khurd Mine Distt.
 Rajsamand Rajasthan-313211
 RAJSAMAND RAJASTHAN
 Phone: 7742842411
 FAX : (02952) 265143

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/ : 15-OCT-19
 Termination date

Manager

Name : RADHA RAMAN
 Qualification : B E Mining
 Appointment/ : 02-JUL-19 30-MAY-21
 Termination date

Manager

Name : Anshul Kumar Khandelwal
 Qualification : BE (Mining Engg)
 Appointment/ : 31-MAY-21
 Termination date

6. Date of approval of Mining : Mining Scheme rule 12 MCDR1988 10-JUL-02
 Plan/Scheme of Mining 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	There was no backlog of previous year 2017-18. During the year 2018-19 following proposal of exploration was given: U/G- 800 nos. bore holes(85000m) Surface-50 nos. bore hole (20000m)	There was no backlog of previous year 2017-18. During the year 2018-19 following expolration work has been carried out: U/G- 595 nos. bore holes(94780m) Surface-23 nos. bore hole (17044m)	Due to shortfall in exploration during the year 2018-19 violation letter was already issued by the previous inspecting officer vide letter dated 26.07.2019.
1b	Exploration over lease area for geological axis 1 or 2	To convert resource to reserve and explore the Ore Zone in depth, a total of 4125 number of BH from surface and UG have been proposed during the plan period from 2018-19 to 2022-23.	A total of 618 BH have been drilled during the year 2018-19.	Violation for less drilling issued vide letter of even number dated 26/07/2019 by the previous inspecting officer. Entire lease area has been explored under G1/G2 level of exploration.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal of exploration agency and expenditure.	Hindustan Zinc Limited & Hardrock Rohita Engeering Co. and TDMA Expenditure: Around 25 Crore.	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	As per approved document entire lease explored under G1/G2 level of exploration. Drilling has been proposed to upgrade the resource and in-depth exploration.	Exploratory drilling has been carried out to upgrade resource and to explore ore body in-depth.	Nil

1e	Balance reserve as on 01/04/20	No specific proposal for reserve and resource on year to year basis.	As on 01/04/2019, the position of reserve and resources are 32.52 and 81.17 million tonnes respectively.	Nil
1f	General remarks of inspecting officers on geology, exploration etc	Exploration work has been proposed to upgrade the resource and to explore ore zone in depth.	Exploratory drilling has been carried out to upgrade resource and to explore ore body in depth.	Violation for less drilling in comparison to the proposed drilling has been issued vide letter dated 26/07/2019 by the previous inspecting officer.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Ramp 425-315mRL 290-215mRL 195-160mRL B & C BLOCK SKA2 SKA6 SKA14 D Block E Block Vertical Development	Ramp 425-315mRL 290-215mRL 195-160mRL B & C BLOCK SKA2 SKA6 SKA14 D Block E Block Vertical Development	Nil
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not proposal of benches as mining is being carried out through UG mining method.	Mining operations are being carried out through UG mining method.	Nil
2c	Stripping ratio or ore to OB ratio	Not proposed	It is U/G Mine, hence not applicable.	Nil
2d	Quantity of topsoil generation in m3	Not proposed	It is U/G Mine, hence not applicable.	Nil
2e	Quantity of overburden generation in m3	No proposal	It is U/G Mine, hence not applicable.	Nil

2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	(1)During the year 2018-19 development was less than the proposed , hence violation of rule 11(1) of MCDR 2017 issued to the lessee by the previous inspecting officer vide this office letter 26.07.2019.(2) during the current inspection ventilation condition was found poor at - 55mRL level in Meain Lens, hence violation of rule 11(1) of MCDR issued to the lessee (3)South ramp haul condition from 100mRL to -55mRL was very bed hence violation of rule 11(1) of MCDR issued to the lessee.
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Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	2018-19 1.425-315 mRL 2. 290-215-mRL 3. 130-15mRL 4. SKA2 (300-215) 5. SKA6 6. SKA14 7. C Block	2018-19 1.425-315mRL 2. 290-215-mRL 3.130-15mRL 4.SKA2(197-160) 5.SKA6 6. SKA14 7. C Block NO of stopes-31 Nos	During the inspection Stopping operation has been commenced in three stopes without prior approval of competent authority hence violation of Rule 30(1) issued to the lessee vide this office letter dated 12.09.2019.

3b	Quantity of ROM mineral production proposed	2018-19: 60,00,000 T	2018-19: 53,10,794 T	Geotechnical issues encountered in C-Block and back filling Plant-2 commissioning delayed which had impact on back filling of primary stopes and delay in mining of secondary stopes. Resulting less production.
3c	Recovery of sailable/usable mineral from ROM production	2018-19: 60,00,000 T	2018-19: 53,10,794 T	Nil
3d	Quantity of mineral reject generation	No proposal of Mineral Reject generation during the year 2018-19.	No mineral reject has been generated mineral excavation. However, mill tailing quantity of 4594548 T having grade of 0.38% TMC (Pb+Zn) generated.	Nil
3e	Grade of mineral rejects generation and threshold value declared.	Not specifeid.	Mill tailing quantity of 4594548 T having grade of 0.38% TMC (Pb+Zn).	Nil
3f	Quantity of sub grade mineral generation.	No proposal of Sub-grade ore generation during the year 2018-19.	No Sub-grade ore has been generated during the year 2018-19.	Nil
3g	Grade of sub grade mineral generation	No proposal.	Not applicable.	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	No specific proposal of segregation of ROM. Entire ROM is subject to the beneficiation.	ROM obtained is being beneficiated.	Nil

3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal of analysis or beneficiation study. Proposed to beneficiate entire ROM through well-defined process like Crushing, grinding, flotation cell, Pb-Zn concentrate thickening, filtration section, Tailing thickening, dewatering etc.	No proposal of analysis or beneficiation study. Proposed to beneficiate entire ROM through well-defined process like Crushing, grinding, flotation cell, Pb-Zn concentrate thickening, filtration section, Tailing thickening, dewatering etc.	Nil
3j	Provision of drilling and blasting in mineral benches	No proposals as operations are proposed through underground mining method. Under Ground - Drilling pattern in ore- Burn Cut method of development, Drilling pattern in Stopes- Ring/parallel holes drilling.	The drilling and blasting is being carried out as per proposal	Nil
3k	Provision of mining machineries in mineral benches	LHD, LPDT, Dumper, Explosive Van, Rock Drill, Blast Hole Drill, Water Tanker, Pumps, Air Compressor, Ventilation Fan etc.	LHD, LPDT, Dumper, Explosive Van, Rock Drill, Blast Hole Drill, Water Tanker, Pumps, Air Compressor, Ventilation Fan etc.	Nil

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	No proposals as operations are proposed through underground mining method.	Not applicable as operations are being carried out through UG mining Method.	Nil
3m	Total area covered under excavation/pits	No proposal.	U/G mine, hence not applicable.	Nil
3n	Ore to OB ratio for the pit/mine during the year.	No proposal.	U/G mine, hence not applicable.	Nil
3o	Total area put in use under different heads at the end of year	As per approved RMP dated 23/01/2018, total area put under different heads at the end of the plan period i.e. 2022-23 is 121.89Ha.	Total area degraded during at the end of the year 2018-19 was 93.10 Ha.	Nil
3p	Production of ROM mineral during the last five year period as applicable	2014-15- 2.0 mt 2015-16- 2.5 mt 2016-17- 4.5 mt 2017-18- 4.5 mt 2018-19- 6.0 mt (mT-million tonnes)	2014-15-1.91 mt 2015-16-2.96 mt 2016-17- 3.66 mt 2017-18- 4.50 mt 2018-19- 5.31 mt (mt-million tonnes)	Nil
3q	General remarks of inspecting officers on method of mining etc.			(1)Method of mining is suitable to the type of deposit. (2) During the inspection Stopping operation has been commenced in three stopes without prior approval of competent authority hence violation of Rule 30(1) issued to the lessee vide this office letter dated 12.09.2019.

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 and Mineral Reject generation. However U/G development waste is proposed to dump at existing waste dump.	Top soil and Mineral Reject has not been generated during the reporting year. Waste generated from U/G mine development during the year has been dumped at designated place.	Nil
4b	Location of topsoil, OB and mineral reject dumps	Top soil- No proposal OB- No proposal Waste dumping- E/W 1296-1502 & N/S 7134-7490	Top soil- Not generated OB- Not generated. Waste dumping-E/W 1296-1502 & N/S 7134-7490	Nil
4c	Number of dumps within lease area and outside of lease area	01 within lease area	01 within lease area	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable as operations are being carried through UG mining method.	Not applicable as operations are being carried through UG mining method.	Nil
4e	Number of active and alive dumps.	01	01	Nil
4f	Number of dead dumps.	No proposal	Nil	Nil
4g	Number of dumps established.	No proposal.	Nil	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Proposal has been given.	The work of construction of retaining wall and garland drain was under process.	The violation of MCDR has been pointed out the lessee vide letter dated 26/07/2109 by the previous inspecting officer.
4i	Length of Retaining wall or garland drain all along dumps	Proposed construction of 200 mts of parapet wall along the waste dump.	The work of construction of parapet wall was under process.	The violation of MCDR has been pointed out the lessee vide letter dated 26/07/2109 by the previous inspecting officer.
4j	Number of settling ponds	No proposal	Not applicable	Nil

4k	Specific comments of inspecting officer on waste dump management	(1)The violation of MCDR has been pointed out to the lessee vide letter dated 26/07/2109 by the previous inspecting officer for not construction of parapet walls along the dump. (2) During the current inspection no propoer terrecing of waste dump was observed hence violation of rule (1) of MCDR 2017 issued vide this office letter dated 12.09.2019.
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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 of U/G stopes has been proposed.	Underground stopes back filled after extraction of minerals.	Nil
5b	Area under backfilling of mined out area	2018-2019 1330000 cubic meter	2018-2019 1179054 cubic meter	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal	U/G Mine hence not applicable.	Nil
5d	Total area fully reclaimed and rehabilitated	An area of 2.0 ha has been proposed to rehabilitate by the way of plantation.	Around 2.0 Ha areas has been rehabilitate by the way of plantation within lease area.	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Backfilling has been carried out after full extraction of mineral from U/G stopes.

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 of MCDR, 2017 holder of mining lease shall submit PMCP before 1st day of July every year.	PMCP report for the year 2018-19 has been submitted.	Nil
6b	Area available for rehabilitation (ha) .	4 hect.(2018-19)	4 hect. (2018-19)	
6c	afforestation done (ha).	2.0 Ha area was proposed for plantation.	Afforestation has been carried out over 2.0 Ha area.	Planation has not been carried out over proposed area hence Violation of rule 11(1) vide letter dated 26/07/2019 issued by the previous inspecting officer.
6d	No. of saplings planted during the year	3000 number of saplings have been proposed to plant.	During the reporting year 3000 number of plant has been planted over 2.0 Ha. area.	Nil
6e	Cumulative no .of plants	Not specified.	1,02,000 nos.	Nil
6f	Any other method of rehabilitation	Not specifeid	None	Nil
6g	Cost incurred on watch and care during the year	Not specified	Cost incurred on watch & care During 2018-19 was Rs/-1760355.00	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	2018-19- 1500000 cubic meter	2018-19- 1701513 cubic meter	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	2018-19- 1330000 cubic meter	2018-19 1179054 cubic meter	Nil

6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	No proposal	It is U/G Mine , hence not applicable.	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal	It is U/G Mine , hence not applicable.	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No proposal	Nil	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	2 hect.	2 hect.	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	2 hect. by plantation.	2 hect. by plantation.	Nil
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)	Provision of environment monitoring stations has been given in the Core and Buffer zone.	Environment monitoring parameters are found to be within permissible limit.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			PMCP compliance is staisfactory.

Mineral Conservation:

Sl.No.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	No proposal of grade wise sorting of ROM. Entire proposed ROM to produce is subject to well-defined beneficiation plant like Crushing, grinding, flotation cell, Pb-Zn concentrate thickening, filtration section, Tailing thickening, dewatering etc.	ROM generated is being beneficiated as per proposal.	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 .	A well-defined beneficiation plant exists in within the lease area that includes Crushing, grinding, flotation cell, Pb-Zn concentrate thickening, filtration section, Tailing thickening, dewatering etc.	A 6.50mtpa capacity beneficiation plants is in operation at SK mine and the ore produced is processed by milling and sequential froth floatation to obtain lead and zinc concentrate.	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			No issue related to beneficiation and mineral conservation in the mine was observed.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No occurrence of top soil has been anticipated due to underground mining operation.	No top soil has been generated during the year 2018-19.	Nil
8b	Concurrent use or storage of topsoil	No proposals as mining operations are being carried out through UG.	Not applicable.	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumping of waste has been proposed.	Waste has been dumped at its designated place.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal of use of overburden/ waste rock for restoring the land to its original use. However, waste has been proposed to use in backfilling of stoped out area.	Waste generated during the year has been dumped partially over designated dump and partially disposed of in underground stoped out area.	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Waste land of 2.0 Ha areas has been proposed to rehabilitate during the year 2018-19 within lease area by the way of plantation.	Plantation work has been carried out within the lease area.	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	No specific information for existing plantation and survival rate. During the year 3000 number saplings have been proposed to plant over an area 2.0 hect.	A total of 3000 number of saplings were planted over an area 2 hect.	Nil

8g	Survival rate	No specific proposal.	82%	Nil
8h	Water sprinkling on roads to control airborne dust	To control the air born dust particle, water sprinkling has been proposed.	Water sprinkling has been observed during the mine inspection.	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			The aesthetic beauty is good around the mine area.

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 2018-19 has been submitted by the lessee on time.	Nil
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Information of Mining Engineer, Geologist and Manager has been furnished.	Mining Engineer, Geologist and Mine Manager as per MCDR, 2017 has been appointed at the mine.	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Used for waste disposal-6.09 Ha, reclaimed and rehabilitated-25 Ha, Occupied by plant, building, workshop, roads, plantation-50.40 Ha, Other-118.353 Ha, Total-199.843 Ha	At the end of the year 2018-19, area degraded under different heads area as follows: Used for waste disposal-6.09 Ha, Mineral Storage: 07 Ha, reclaimed and rehabilitated-7.11 Ha, Occupied by plant, building, workshop, roads, plantation-50.40 Ha, Other-29.61 Ha, Total-93.10 Ha	Land use furnished is not matching with the approved document. Violation for same has been pointed out and communicated to the lessee vide letter dated 26/07/2019 by the previous inspection officer.

9d	Scrutiny of Annual return on afforestation	Information of 3000 number of saplings plantation of 3000 number of saplings has been furnished.	3000 number of saplings have been planted during the year.	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	No Mineral Reject generation during the excavation of ore. However, mill tailing quantity of 4594548 MT having grade of 0.38% TMC (Pb+Zn) has been furnished as mineral reject.	No mineral reject has been generated during mineral excavation. Entire ROM is subject to beneficiation. Mill tailing has been furnished as Mineral reject.	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM closing stock: 18358 tonnes, Closing stock of concentrate: Pb- 2085.50, Zn- 7985.60	The information furnished found to be correct.	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex mine price- Rs. 2148.00 per tonne, Production cost per tonne- Rs. 37836.00 per tonne. Sale value-not applicable in case of captive consumption.	As the mine is captive mine, in such cases the cost of production should be same as the Ex-mine price.	Violation for not matching Cost of production and Ex-mine price has been issued vide letter dated 26/07/2019 by the previous inspecting officer.
9h	Scrutiny of Annual return on fixed assets	The value of fixed asset furnished is Rs. 30174130061.00	The information furnished appears to be correct.	Nil
9k	Scrutiny of Annual return on mining machineries	LHD, LPDT, Dumper, Explosive Van, Rock Drill, Blast Hole Drill, Water Tanker, Pumps, Air Compressor, Ventilation Fan etc.	The information furnished in respect of mining machineries appears to be correct.	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-SEP-19			
MCDR17	Rule 30(1)	12-SEP-19			

Date :

(Kotriwal B.L.)

Indian Bureau of Mines