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HINDUSTAN ZINC
Zinc & Silver of India

Ref: HZL/KYD/ENV/2024-2025/109

September 14, 2024

Member secretary
Raj. Pollution Control Board
4, Institutional Area
Jhalan Doongri
JAIPUR

Sub : Environment Statement of Kayad Mine for year 2023-24

Ref: Env clearance vide No. : J-110115/47/2012-IA.II (M) dated 5th Feb, 2018
CTO granted vide No.: F(Mines)/Ajmer (Ajmer)/303(1)/2017-2018/5559-5563 dated 06/01/2023

Dear Sir/Madam,

Please find enclosed herewith the environmental statement for financial year ending on 31st March 2024.

Thanking you

Yours truly,

14/09/24

(Nirmalendu Kumar)
Director SBU (Kayad Mine)

cc to: Regional Officer : for kind information please

Raj. State Pollution Control Board
SPL-II RIICO Industrial aera, Phase-V,
Kishangarh, Dist. Ajmer

The Deputy Director (S) /Scientist -C,
Ministry of Environment, Forest & Climate Changes,
Integrated Reginal Office, A-209&218,Aranya Bhawan,
Jhalana Institutional area Jaipur-302004

O/C Env.

FORM – V
(Rule 14)

ENVIRONMENTAL STATEMENT FOR FINANCIAL YEAR ENDING ON 31ST MARCH 2024

PART – A

(i).	Name and address of the owner / Occupier of the industry/ operation or process	:	Sh. Arun Mishra Chief Executive Officer & Whole Time Director Hindustan Zinc Limited Yashad Bhawan Udaipur 313 001
	Name and address of unit head	:	Sh. Nirmalendu Kumar Director- SBU Kayad Mine Hindustan Zinc Limited PO & Village : Kayad, Dist. Ajmer-305023, Rajasthan
(ii).	Industry category Primary (STC code) Secondary (STC code)	:	Red 1031-98 (Lead & Zinc Ore)
(iii).	Production Capacity -Units	:	1.2 million Tons per annum of Lead Zinc Ore and Associated Minerals
(iv).	Year of establishment	:	June 2011
(v).	Date of last environmental statement submitted	:	26/09/2023

PART – B
Water and Raw Material Consumption

1. Water Consumption (m3/day)

	Cum/day
Process	-
Cooling / Services	135.5
Domestic	7.1

Name of Product	Process water consumption (fresh water) per unit of product output (Ore treatment)	
	During Previous Financial year 2022-23	During current year 2023-24
Lead- Zinc Ore	0.037 cum/MT	0.044 cum/MT

2. Raw material consumption

Name of raw material*	Name of product	Consumption of raw material per unit of output	
		2022-23	2023-24
Nil	Lead-Zinc Ore	Nil	Nil

* Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw material used.

PART – C

POLLUTION DISCHARGED TO ENVIRONMENT/UNIT OF OUTPUT

(Parameters as specified in the consent issued)

Sr. No	Pollutants	Quantity of pollutants discharged (mass/volume)	Concentration of pollutants in discharge (mass/volume)	Percentage of variation from prescribed standards and reason
a	Water	Zero discharge being maintained		

B	Air	Annexure-A

PART – D

HAZARDOUS WASTE

[As specified under Hazardous Wastes (Management and Handling) Rules, 2016]

Hazardous wastes	Total quantity (Kg)	
	During the previous financial year (2022-23)	During the current financial year (2023-24)
a). From Process		
Decontaminated drums	559 Nos	462 Nos
Used oil *	87. 413KL	83.17 KL
Oil Contaminated Cotton Waste **	3.50 MT	2.19 MT
b). From pollution control facility	Nil	Nil

PART – E

Solid Waste

Sr. No.		Total quantity	
		During the previous financial year (2022-23)	During the current financial year (2023-24)
a	From process	303,513 MT	265625 MT
b	From pollution control facility	Nil	Nil
c	1. Quantity recycled or reutilised	100% used for back filling of stoped voids	100% used for back filling of stoped voids
	2. Solid	Nil	Nil
	3. Disposed	Nil	Nil

PART – F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Hazardous Waste:

S.No	Type of Hazardous Waste	Category		Hazardous Waste Disposal
		Schedule	Code	
1	Used Oil	1	5.1	Sold to registered Recycler
2	Waste/ residues containing oil	1	5.2	Approved Incinerator
3	Discarded containers/barrels contaminated with hazardous waste	1	33.3	Reused for filling of used Oil

Solid Waste:

The composition of the waste rock generated from development activities mainly consists of Amphibolite's, Calc- silicate, Quartz which are being used for back filling in voids developed by stopes.

PART – G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production:

The following are the abatement measures taken on conservation of natural resources.

1. Air Management
    - Wet Drilling
    - Ore Transportation by covered trucks
    - Regular maintenance of Heavy machinery
    - Backfilling of waste in voids developed by stopping
    - Regular sprinkling of water on haul roads
    - Plantation around the acquired area
2. Water Management
    - Garland drain around the waste dump to collect run-off water and connected to a pond with de-silt provision
    - Reuse of vehicle wash water
    - STP treated water used for horticulture.
    - Reuse of mine water for drilling, dust suppression and plantations
    - Rainwater harvesting for roof top, greenbelt and open area developed.
    - Zero discharge maintained
3. Noise Management
    - The mining equipment are designed with low noise level

- All vehicles are undergoing periodic maintenance
- Mine ventilation fan designated with sound attenuation system and installed underground
- Vehicle within the acquired area will have low volume horns
- All personnel in the mine are provided with ear protection PPE's
- A green belt around the acquired area for attenuate noise level
- Diesel generator is provided with acoustic enclosure and silencers

4. Green Belt Development
   - 48000 nos. of plantation done in and around mine area and along the boundary.

   - Mass Plantation of 58000 no done in the nearby community
   - Nursery developed and maintained for rare & native species.
   - Medicinal Plants developed within the mine premises.
   - Gardens developed within the mine area.

PART – H

Addition measures/investment proposal for environmental protection including abatement of pollution, prevention of pollution.

The following works are completed to improve the working environment

1. Haul road dust suppression by use of dust suppression chemical along with water to reduce the water consumption and air born dust.
2. Cleaning of industrial roads and yards by Mechanical Road Sweepers.
3. Regular plantation in and around acquired area, periphery etc.

PART-I

Any other particulars for improving the quality of the environment:

1. **Air pollution control**
   - Road sweeper is being operate on industrial road to control the dust,
   - Haul road fugitive emission controlled by regular water sprinkling with dust suppression chemicals.

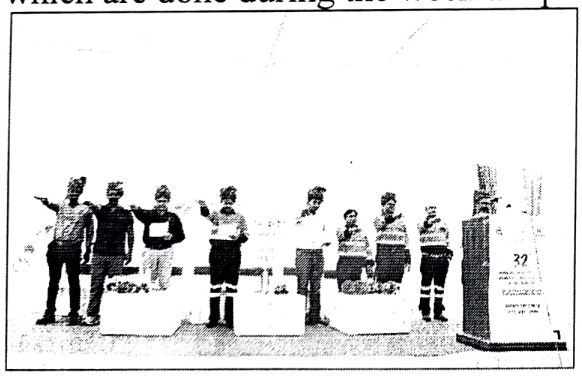
- Fortnightly monitoring of ambient air quality at 5 locations.
- Continuous Ambient Air Quality Monitoring System Installed and monitored.

2. **Water pollution control**:
   - Water quality of mine water, workshop and STP water is regularly monitored.
   - Water quality of ground water (Piezometers) is monitored quarterly basis
   - Drip irrigation for plantation and Popup system for gardens are implemented
   - Online monitoring of pH and Turbidity of STP treated water.

3. **Noise and vibration control**
   Cabins of HEMM equipment are air-conditioned.
   Sound level for mining equipment are monitored regularly.
   Ground vibrations are regularly monitored.

4. **Plantation**:
   - Till March 2023, 46000 Plants in 16.8 Hectares area planted.
   - Plantation are also carried out in vicinity 58000, vishram sthali and in schools and residential area.
   - Road side plantation from highway to vishram sthali

5. **Environmental awareness**:
   - IBM, Ajmer region organizes Mine Environment and Mineral Conservation Week. During celebration of Week, numbers of activities were carried out to increase environmental awareness among the employees. Some of the activities, which are done during the week are posters, slogans and speech competitions.



   - Celebration of World Env. Day on 5th June 2024 . Mass Plantation in mine premises, Quiz competition, Poster competition and slogan competition were conducted successfully.
   - Legal training on Environmental rules & regulations and sustainability etc.

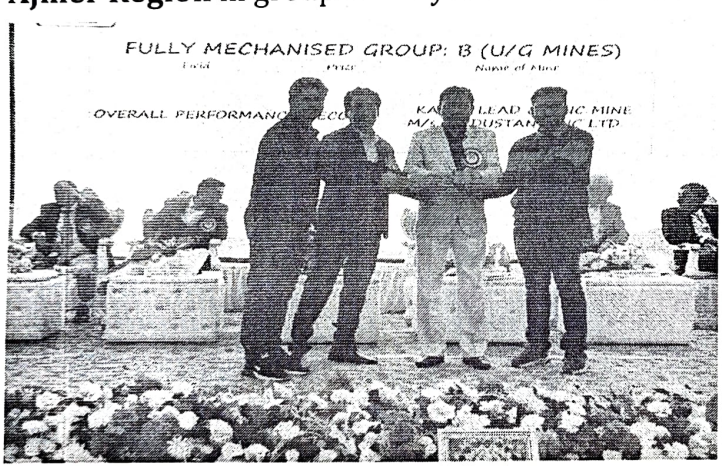
6. **Water Conservation Measures:**
   - Drip Irrigation system for plantation implemented
   - Pop-up system for garden maintained to reduce water consumption

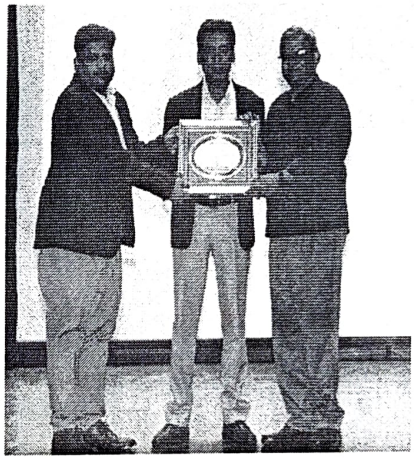
- Efficient operation of 50 KLD Sewage Treatment Plant at Mine to reuse the treated water.
- Use of Evaporation Retardant Chemical on the surface of water in summer
- Plastic Ban awareness and cloth bag distribution.

- A Skit on water conservation was arranged for Awareness among employees on world water day.

7. **Awards:**

- Overall Excellence Performance - **First in 32nd MEMC Week** under aegis of **IBM, Ajmer Region** in group of Fully Mechanized Mine





- Received the prestigious '5 Star Rated Mines' award by Ministry of Mines, Government of India
- Jaswant Singh Gill Memorial Industrial Safety Excellence Award for Underground Metal mining in Country.
- National Safety Award Received by kayad Mine
- BHAMASHAH AWARD

- Golden Peacock Award

- FIMI's Bala Gulshan Tandon Award of Excellence.
- 5-S certified by QCFI jointly with JUSE and certificate.
- Kayad Mine is Certified by Energy Management System ISO-50001
- Kayad Mine recertified by ISO 14001:2015, ISO 9001:2015, ISO 45001:2018.

Annexure-A

Pollution discharged to environment / unit of output (Parameters as specified in the consent issued)

Period : April 2023 - March 2024

Location	Concentration of pollutants in discharge (mass/volume)			Percentage of variation from prescribed standards and reason
	Pollutants	Max (µg/m3)	Min (µg/m3)	
Mine Area Near SSB	SPM	159.55	108.05	No variation is observed during the period. All parameters are within the limits
	PM10	81.77	55.98	
	PM2.5	40.50	23.59	
	SO2	7.55	3.66	
	NOx	16.68	14.06	
	CO	390.00	240	
Mine area (CRF)	SPM	161.82	104.73	No variation is observed during the period. All parameters are within the limits
	PM10	82.75	51.66	
	PM2.5	37.43	23.52	
	SO2	8.96	4.02	
	NOx	16.90	12.08	
	CO	410.00	260.00	
Mine Area (ANFO)	SPM	233.56	78.62	No variation is observed during the period. All parameters are within the limits
	PM10	77.24	39.9	
	PM2.5	43.42	16.53	
	SO2	5.79	2.03	
	NOx	15.98	8.82	
	CO	340	106	
Kayad Village	SPM	165.27	108.21	No variation is observed during the period. All parameters are within the limits
	PM10	79.44	50.4	
	PM2.5	39.79	23.06	
	SO2	7.94	3.14	
	NOx	16.55	11.32	
	CO	340	207	
Lohagal Village	SPM	164.78	109.14	No variation is observed during the period. All parameters are within the limits
	PM10	80.1	50.13	
	PM2.5	35.23	23.38	
	SO2	7.79	3.74	
	NOx	16.02	11.83	
	CO	350	250	
Gagwana Village	SPM	162.45	106	No variation is observed during the period. All parameters are within the limits
	PM10	78.81	49.19	
	PM2.5	45.08	18.48	
	SO2	8.13	4.01	
	NOx	16.53	11.03	
	CO	370	250	