Annexure - III

vedanta
transforming element

HZL/SKM/ENV/2018/09/220 Date 08.09.2018

To,
The Member Secretary
Rajasthan State Pollution Control Board
4, Institutional Area
Jhalana Doongri
Jaipur-302004

Subject : Environmental Statement (Form-V) for the year 2017-18 of Hindustan Zinc Ltd .Sindesar Khurd Mine.(Unit ID: 70896)

Reference:

1. FileNo.F(Mines)/Rajsamand(Railmagra)/1715/(1)/2017-2018/5288-5292dated 06.09.2017
2. File No. F(CPM)/Rajsamand (Railmagra)/3(1)/2016-2017/10306-10308 dated 08.02.2017
3. File No. F(CPM)/Rajsamand (Railmagra)/3(1)/2016-2017/8937-8939 dated 23.01.2018

Sir,

With reference to above subject please find enclosed Environmental Statement (Form-V) for financial year 2017-18 of Sindesar Khurd Mine located at Sindesar Khurd Village, Railmagra Tehsil Rajsamand District in Rajasthan.

Thanking You.

Yours Faithfully,

Rajeev Bora
Unit Head -Sindesar Khurd Mine.

Cc: 1. The Regional Officer
Rajasthan State Pollution Control Board
18, Azad Nagar, Near Pannadhay Circle
Mining office Road
Bhilwara-311001
2. The Director,
Ministry of Environment and Forests,
5th Floor, Kendriya Bhawan
Sector H – Aliganj,
Lucknow – 226024
3. Office copy

Hindustan Zinc Limited
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Registered Office : Yashad Bhawan, Udaipur (Rajasthan) - 313 004
CIN : L27204RJ1966PLC001208

Hindustan Zinc Limited
Sindesar Khurd Mine

ENVIRONMENTAL STATEMENT FOR SINDESAR KHURD MINE (FINANCIAL YEAR ENDING MARCH 31ST 2018)

PREPARED & SUBMITTED BY

Hindustan Zinc Limited,
Sindesar Khurd Mine ,
Village: –Sindesar, Tehsil:- Relmagra
P.O. - Dariba, District – Rajasmand
Rajasthan - 313211

Form –V (Environment Statement)

For the Financial Year Ending the 31st March 2018.

Part A

(i)	Name and address of the owner/occupier of the industry operation or process	:	Sunil Duggal CEO & Whole Time Director M/s. Hindustan Zinc Limited Sindesar Khurd Mine Hindustan Zinc Limited, P.O.- Dariba, Tehsil- Relmagra Dist. - Rajsamand Rajasthan – 313211
(ii)	Industry category	:	Red/ Large
	Primary – (STC Code)	:	GSTIN No.: 08AAACH7354K1ZB
	Secondary- (SIC Code)	:	Not Applicable
(iii)	Production Capacity	:	4.5 Million Tons Per Annum (Lead- Zinc Ore Production) 5.0 Million Tons Per Annum (Lead- Zinc Ore Beneficiation).
(iv)	Year of Establishment	:	December 2005
(v)	Date of Last Environmental Statement Submitted	:	25.09.2017

PART -B

WATER AND RAW MATERIAL CONSUMPTION

(1) Water consumption (m3 /d)*

Name of Product	Process water consumption per unit of product output(cum/MT)	
	During the previous financial year (2016-17)	During the current financial year (2017-18)
	(1)	(2)
Lead-Zinc Concentrate	2.23 M3/MT	2.72 M3/MT

Name of raw material	Name of products	Consumption of raw material per unit of output MT	
		During the previous financial year	During the current financial year
Lead –Zinc Ore	Lead & Zinc Concentrate	9.75 MT* per ton of concentrate produced	9.50 MT* per ton of concentrate produced
CuSo4		744.61 MT	1159.69 MT
Sodium Iso Propyl Xanthate (SIPX)		161.22 MT	367.2 MT
Sodium Cyanide		0.7 MT	Nil
Grinding Media (Rod)		367.6 MT	615.36 MT
Grinding Media (Ball)		1058.11 MT	1749.42 MT

(2) Raw material consumption:

*Ore is being treated to produce Lead and Zinc Concentrate at Sindesar Khurd Ore Beneficiation Plant

PART-C

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

Pollutants	Quantity of pollutants discharged (mass/day)	Concentration of pollutants in discharges (mass/ volume)	Percentage of variation from prescribed standards
a) Water	Not Applicable as Zero Discharge is maintained.		
pH			
TDS			
DO			
Suspended Solids			
Oil and Grease			
Chromium as hexavalent			

Manganese			
Nickel			
Copper			
Zinc			
Cadmium			
Lead			
Mercury			
Cyanide			
b) Air			
Particulate matter (SPM) from stack of Sec. crusher	110 Kg/day	76.15 mg/Nm3	Within Permissible Limit

PART-D

HAZARDOUS WASTES

As specified under Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008

Hazardous Waste	Total Quantity Generation (Kg.)	
	During the previous financial year (2016-17)	During the current financial Year (2017-18)
Used /spent Oil (Cat :5.1)	230.77 MT	317.19 MT
Waste or Residues containing oil (Oil Filters etc.) Cat : 5.2	---	19.84 MT
Discarded Containers/barrels/liners used for hazardous waste/Chemicals (Cat :33.1)	18 Nos (0.18 MT)	9.89 MT
(b) From pollution control facilities		
Not Applicable	Not Applicable	Not Applicable

PART-E

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

Details of Solid Wastes and Its Disposal Method :-

Sr. No.	Name of Waste	Chemical Characteristics	Quantity Generation / Annum (MT)	Mode of Storage	Mode of Disposal
1	Tailings generation from Beneficiation Process	Zn: < 0.3 % Pb: < 0.2 % Fe: 10-14 %	3955126 MT	Stored in various storage tanks and thickeners in the form of slurry.	Disposal in underground mine for void filling and remaining quantity sent in Tailing Dam.
2	Waste Rock	Zn : 0.01 to 0.03 % , Pb : 0.05 to 0.07 % Fe: 2.5 to 5.5 % , SiO2: 30-35 % , Graphite (C) : 1.5 to 2.5 %	767782 MT	Stored in designated waste storage yard.	Disposal in underground mine for void filling and part of remaining quantity is being used for height raising of Tailing Dam during construction

Details of Hazardous Wastes & Its Disposal Method :-

Sr. No.	Name of Waste	Characteristics	Quantity Generation / Annum (MT)	Mode of Storage	Mode of Disposal
1	Empty barrels /container /barrels /Liners contaminated with hazardous chemicals/ wastes	Flammable , Toxic	9.89 MT	Stored in designated storage area equipped with all necessary arrangement to prevent spill/leak/fire etc.	Disposal in CTDF Udaipur/ Sale to Registered Recyclers
2	Contaminated cotton rags and other cleaning material.	Flammable	---	Collected and stored in bins and bags in designated covered storage yard equipped with all necessary	Incineration

				arrangement to prevent spill/leak/fire etc.	
3	Sludge from treatment of waste water arising out of cleaning /disposal of barrels/containers.	Toxic, Reactive	---	Collected in Plastic barrels and kept in secured area of process for reuse.	Reuse in process/ Disposal in CTDF Udaipur
4	Used or Spent Oil	Flammable	317.19 MT	Collected in MS barrels and being kept in designated storage yard equipped with all necessary arrangement to prevent spill, leak or fire.	Sales to Registered Recyclers.
5	Wastes or residues containing Oil (Oil Filters, Hoses etc.)	Flammable	19.84 MT	Collections in bin and kept in designated storage yard equipped with all necessary arrangement to prevent spill, leak or fire.	Incineration/ Sale to Registered Recyclers

PART-F

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

Our aim is to preserve the long- term health of the natural environment affected by our operations. We set and achieve targets that promote efficient use of resources and include the reduction and prevention pollution.

Air Quality Management:

Control of Particulate Matter Emission:

- Dust Extraction systems are provided in crusher; outlet of the system is further connected to stack to reduce PM emission.
- Dust suppression system with sprinklers have been installed at crusher, transfer points and conveyors also conveyors kept closed to mitigate impact on surrounding.
- Wet Drilling is being ensured for dust suppression in under gr0und mine operations;
- Concrete road within the mine boundary and outside the mine area to avoid dust emission due to vehicular movement;
- Low profile Dumper Truck (LPDT) deployed with slow movement and low lift to reduce dust generation due to movement and handling of material;
- In underground, water-sprinkling arrangements is provided at the location of loading and mucking to suppress the dust;

- Greenbelt development ensured in various areas of mine along with all haul road, ore dump area etc.
- Avenue Plantation is ensured at the road from mine to smelter.
- Regular sprinkling of water on roads to suppress dust.
- All finished good from mines is being transported through trucks covered with tarpaulin.
- Truck mounted vacuum cleaners is being used to maintain the good housekeeping and proper maintenance for controlling air pollution.
- 3 nos of Continuous Ambient Air Monitoring Stations (CAAQMS) have been installed for dust monitoring.
- Regular monitoring of stacks and ambient air is being done through third party Laboratory approved from MoEF & CC.
- Successful Trial of Reagent (Dustron) with various proportion of water has been conducted to improve dust suppression by increasing dust settling time along the haal roads and same is being continued.

Water Management:

By considering the availability, demand, importance and value of water in life. we have developed sustainable water management plan and adopted for water conservation, recycling, reuse and reclaim policy in our operation. For effective implementation Following actions are ensured,

- Treated water from companies Sewage water plant located at Udaipur is main source of water and same is being used in priority.
- Water coming due to intersection from underground mining operation is being recycled and reused in process.
- Maximum use of Paste fill plant operation is being ensured to reduce water consumption for filling of voids in underground mine.
- Water going along with tailings in tailing dam is being reclaimed and reused in operation.
- Drip irrigation is provided to reduce water consumption for plantation.
- Regular monitoring of water table, quality of underground and surface water is being in core and buffer zone.
- Storm water ponds have been constructed inside mining area and water from the same is being used in operation
- Water conservation project has been done by deepening of water ponds from nine nearby villages

Waste Management:

We have adopted '4R' waste strategy - Reduce, Recycle, Reuse and Reclaim policy in our mines. Following action are being ensure for the same.

Waste rock generated during mining operation is being reused in void filling and also being used in height raisening during constrcution of tailing dam.Tailing genrated from Ore Beneficiation process is being reused for undergorund voids filling.

Hazardous Wastes generated in mine are being segregated at source and then stored in designated areas equiped with secondary containment, spill control kits ,impervious floor , covered shed with siffcient capacity of fire extinguishers to avoid contamination with water,air and soil and to control fire in case of emergency .disposal details are given in Part –E.

Noise Management:

- **Sources/ Impact:**
  The major surface sources of noise are ore handling operation, crushing, compressors, ventilation fans, DG sets, vehicular movement.
- **Mitigation Measures:**
  - Majority of mining activities is underground.
  - Compressors located in isolated building and having acoustic enclosure.
  - Ventilation fans are provided with dampeners.
  - DG sets having acoustic enclosure.
  - All vehicles and machineries are periodically maintained as per OEM to ensure noise level within permissible limits.
  - Regular monitoring of noise level.
  - PPEs (Ear plug & Ear Muff) are provided.

PART-G

Additional measures/investment proposal for environment protection including abatement of pollution /prevention of pollution.

Green belt Development

Implementation of afforestation program is of paramount importance for Sindesar Khurd Mine. Till date 76000 nos. of saplings have been planted successfully in various areas of mine. Drip irrigation facility has been provided to all the plant saplings.

The various plant species grown at Dariba Smelter Complex include; Neem (*Azadirachta indica*), Amaltas (*Cassia fistula*), Shisum (Dalbergia Shishoo), Ficus Religiosa, Terminalia Arjuna, Karanj (*Pongamia pinnata*) etc. While selecting the plant species for green belt, following points have been taken into consideration:

- Dust capturing efficiency;
- Plant's growth;
- Canopy cover; and
- Origin of plant
- Arid Climatic conditions

PART-H

Any other particular for improving the quality of the environment.

Environmental Monitoring.

Regular monitoring of important and crucial environmental parameters is of immense importance to assess the status of environment during Mining and Ore Beneficiation operation. With the knowledge of baseline conditions, the monitoring program can serve as an indicator for any deterioration in environmental conditions due to operation of the plants and suitable preventive steps could be taken in time to safeguard the environment. Monitoring is as important as that of control of pollution since the efficiency of control measures can only be determined by monitoring. The environmental attributes being monitored are as given below:

- Air Pollution and Meteorological Aspects
- Water and Waste Water Quality
- Noise Levels
- Soil Quality