सी.पी.पी.,ज़ावर माईन्स
पिन कोड - 313901
जिला - उदयपुर (राज.)

HINDUSTAN ZINC LIMITED
हिन्दुस्तान जिंक लिमिटेड

CPP, Zawar Mines
PIN Code – 313901
Dist - Udaipur (Raj.)

Telephone - (0294) 2726600, Fax-2726243

Ref.: HZL/ZM/CPP/ENV/2020-21/ Date - 14.09.2020

By Registered

The Member Secretary
Rajasthan State Pollution Control Board
4- Institutional Area, Jhalana Dungri
JAIPUR-302004 (Raj.)

Sub.: Environmental Statement for the year 2019-20 for Zawar CPP

Ref: F(Mines)/Udaipur(Sarada)/50(1)/2016-2017/6817-6819 dated 18.02.2019
Environment Clearance vide No.-J-13011/79/2007-IA-II (T) dated 05.02.2008

Sir,

Please find attached herewith the **Environmental Statement** for the year **2019-20** for **Zawar Captive Power Plant**

Thanking you

Yours truly

(Binu Raphael)
(Head – ZAWAR CPP)

Encl.: As above
CC: 1. The Director, Ministry of Environment and Forests, Regional Office (Central Region), Kendriya Bhawan, 5th Floor, Sector "H", Aliganj, Lucknow – 226024 (U.P.)
2. The Regional Officer, Rajasthan State Pollution Control Board, F-470, Near UCCI Building, Madri Industrial Area, Udaipur-313003 (Raj.)
3. Office Copy Env. Cell/CPP Zawar

FORM – V
(See Rule- 14)
ENVIRONMENTAL STATEMENT FOR FINANCIAL YEAR ENDING ON 31st MARCH 2020
PART – A

1	Name and Address of the Owner / Occupier of the Industry / Operation and Process	Sh. Sunil Duggal CEO & Whole Time Director Hindustan Zinc Limited, Yashad Bhawan, Udaipur-313001 (Raj)
2	Name and address of unit head	Sh. Binu Raphael Head CPP ZAWAR Hindustan Zinc Limited, Zawar Mines Dist.- Udaipur- 313901 (Raj)
3	Industry category	Red
4	Production capacity	90 MW Power Generation
5	Year of establishment	16.12.2008
6	Year of last environment statement submitted.	11.09.2019

PART – B

1. Fresh water consumption (Average)-

Details	**Water consumption**	
	2018-19	**2019-20**
Water Consumption (m^3)	1702499	1498963
Specific Water Consumption (m^3/MWh)	2.51	2.46

2. Raw material consumption-

Name of raw material	**Name of Product**	**Consumption of Raw material per unit of output***	
		2018-19	**2019-20**
Coal Consumption	Power	489.16	472.72

*** gm/kwh**

PART – C

Pollution generated (Parameter as specified in the consent issued)

Air & Water consent to operate - Validity up to 31st October 2022

Pollutants		Quantity of pollutants discharged (m^3/day)	Concentration of pollutants in discharges (m^3/day)	Percentage of variation from prescribed standards with
A	Water	Zero Discharge	Within the limits as prescribed by RSPCB in Consent to Operate	NIL
B	Air	Less than 50 mg/Nm^3 of SPM	Within the limits as prescribed by RSPCB in Consent to Operate	NIL

Annexure attached

PART – D

Hazardous Wastes

[As specified under Hazardous Waste (Management, Handling & Transboundary Movement) Rules 2016]

Hazardous wastes	**Total quantity during the year**	
	2018-19	2019-20
a. From Process		
Used/Spent Oil Sold	Nil	Nil
b. From pollution control facility	Nil	Nil

Used oil from entire location is collected and sold from central store. As Zawar Mines complex (including CPP) is having common HWs authorization, quantity of oil sold from

central store has been mentioned in Environment statement submitted for Zawar mines that includes for entire location including CPP. Therefore, separate quantity is not given here.

PART – E

Solid Waste

Solid Wastes	Total Quantity (MT)	
	2018-19	2019-20
FLY ASH		
Quantity recycled or re-utilized within the unit.	-	-
Sold	34639 MT	38235 MT
Disposed	-	-

Solid Wastes	Total Quantity (MT)	
	2018-19	2019-20
BOTTOM ASH		
Quantity recycled or re-utilized within the unit.	-	6728
Sold	-	207
Disposed	-	-

* The fly ash generated is transported & sent to cement plants by suitably designed bulkers owned by the cement plants and the bottom ash is given to brick manufactures and part of the bottom ash has been used as filling material or reuse.

PART – F

(Please specify the characteristics, in terms of composition and quantum of Hazardous waste and solid waste and indicate disposal practice for both of these categories of wastes)

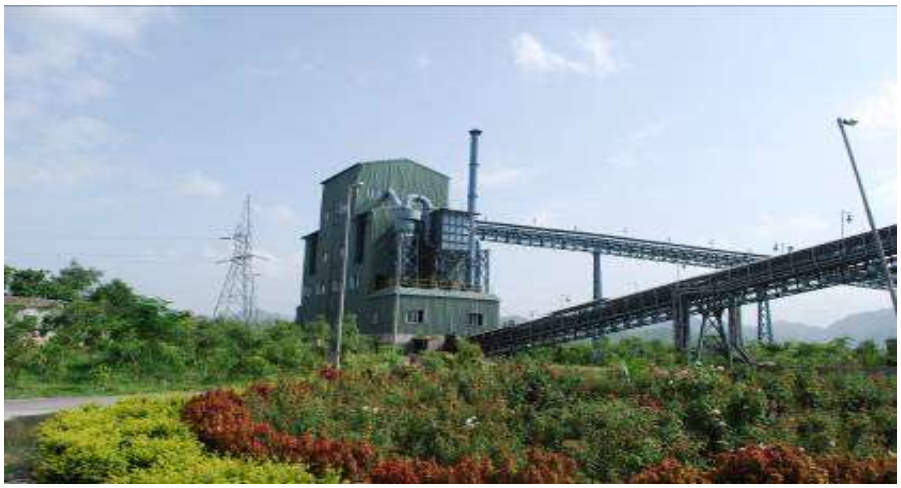
1. The Hazardous Waste generated is used / spent oil which is stored in 220 litre drums and then disposed to recyclers registered with CPCB.
2. Solid wastes generated are Fly Ash and Bottom Ash. The fly ash generated is sent to Cement Plants by suitably designed bulkers owned by the cement plants and the bottom ash is transported and disposed to tailing dam or reuse as per the conditions of Environment Clearance.

PART – G

Impact of the pollution abetment measures taken on conservation of Natural resources and on the cost of production

It may be noted that higher production of power is achieved taking following measures:

- Better capacity utilization of plant and equipment;
- Better maintenance practices resulting in lesser downtime and increased plant availability.
- 8 field ESP to arrest SPM going through chimney to maintain the emission below specified limit.
- Online monitoring system at stack for continuous monitoring of pollutants.
- Zero Discharge is followed. 100 % blow down water is sent to the beneficiation plant of mines for use which results a decrease in consumption of water.
- STP water after treatment is pumped to blow down tank of CPP which results in 100 % utilization of STP water.
- Cyclone separators and Bag filters at the transfer points so as to ensure minimum fugitive emission.
- Covered Coal conveyers for conveying of coal.



- Covered shade provided for storage of approximately 8000 tonnes coal.
- Dust suppression and Dust extraction system installed to improve emissions within the plant premises.

- Regular care of the plantation is being taken.
- Rain Water Harvesting system commissioned in CPP.

PART – H

Additional measures/investment for environmental protection including abatement of pollution,

1. Water spraying on approach roads to minimize fugitive dust outside the plant.
2. Monitoring of ambient air quality at a frequency of weekly twice at each of the four locations, monitoring of both the stacks as well as water sample analysis as per Consent to Operate.
3. Proper training given to employees through seminars/conferences conducted by various agencies like CII, RPCB etc.
4. Zawar location including Captive Power Plant is certified for **ISO-9001:2015(QMS), ISO-14001:2015 (EMS), OHSAS-45001:2018 (OHSMS) and SA-8000:2014 (Social Accountability)**

PART – I

Any other information on Environmental Protection and Pollution Control.

1. World Environment day was celebrated on **5thJune'2019.** Various competitions for employees and children were conducted. Prizes were given to the winners on spot.
2. Safety Day was celebrated in the CPP premises.

HINDUSTAN ZINC LIMITED					
STACK MONITORING (in mg/Nm3), CPP ZAWAR					
Stacks	**ESP**				**Coal Crusher**
Parameters	**PM**	**SOx**	**Nox**	**Hg**	**PM**
Limits	**50**	**600**	**300**	**0.03**	**50**
Apr-19	28.52	548	261	BDL (<0.001)	19.84
May-19	36.29	522	217	BDL (<0.001)	27.82
Jun-19	24.53	516	161	BDL (<0.001)	19.15
Jul-19	26.17	523	225	BDL (<0.001)	24.75
Aug-19	27.65	526	225	BDL (<0.001)	14.56
Sep-19	26.99	476	230	BDL (<0.001)	17.83
Oct-19	25.54	455	256	BDL (<0.001)	14.85
Nov-19	38.62	415	245	BDL (<0.001)	21.37
Dec-19	25.82	399	240	BDL (<0.001)	11.77
Jan-20	29.32	395	246	BDL (<0.001)	14.89
Feb-20	27.28	513	250	BDL (<0.001)	19.64
Mar-20	27.47	435.67	243.33	BDL (<0.001)	18.2

Ambient Air average values (in µg/m3) for 2019-20

Location	Parameters	Limits	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
Ashok Nagar	PM 10	100	71.51	78.4	78.15	69.75	57.77	60.12	64.29	70.90	74.86	71.72	77.81	74.81
	PM 2.5	60	26.58	29.97	26.29	25.83	23.95	23.65	28.34	32.75	36.56	32.69	29.50	32.59
	SOx	80	5.85	6.31	4.77	5.29	4.01	6.28	5.14	3.46	3.41	3.83	6.41	3.33
	NOx	80	13.37	14.3	11.08	11.43	10.45	11.15	11.57	15.15	15.30	14.61	12.08	13.4
	CO	4000	327.5	310	290	245	245	231.25	297.50	316.25	307.50	281.25	258.75	373.33
Weigh Bridge	PM 10	100	67.84	76.28	75.89	69.3	53.47	59.85	74.86	73.79	76.50	69.50	76.97	70.22
	PM 2.5	60	27.09	32.56	24.83	26.32	21.82	24.27	31.33	36.62	39.19	35.30	33.02	33.36
	SOx	80	6.12	6.3	5.02	5.67	4.44	5.91	5.32	3.33	3.20	3.69	6.52	3.22
	NOx	80	12.75	14.39	11.33	11.74	10.23	12.36	12.98	14.98	13.99	16.15	12.90	13.78
	CO	4000	331.25	310	296.25	266.25	182.5	235	298.75	351.25	313.75	271.85	265	298.33
Main Gate	PM 10	100	72.32	80.53	80.61	66.37	55.13	64.05	74.46	70.50	73.99	69.42	78.65	71.18
	PM 2.5	60	27.17	36.95	26.95	28.55	23.98	24.8	32.59	34.88	35.17	33.72	34.94	39.77
	SOx	80	5.68	6.62	4.97	5.38	4.25	6.02	5.95	3.49	3.29	3.66	5.22	3.16
	NOx	80	13.24	14.7	10.77	11.21	10.5	12	14.57	15.67	14.61	11.95	13.52	14.17
	CO	4000	312.5	318.75	293.75	261.25	215	231.25	315	338.75	315	261.25	268.75	311.67
MAS Office	PM 10	100	68.53	83.49	77.42	62.9	51.72	57.12	72.60	74.51	74.53	75.13	76.93	72.85
	PM 2.5	60	28.53	32.35	26.34	27.01	22.13	21.7	28.36	38.65	34.78	34.96	30.75	37.44
	SOx	80	6.11	6.36	5.31	5.35	4.03	5.93	5.54	3.59	3.38	4.18	5.41	3.27
	NOx	80	12.83	14.06	11.25	10.93	10.14	11.66	13.40	15.40	14.29	14.23	12.04	15.33
	CO	4000	293.75	291.25	311.25	263.75	213.75	228.75	328.75	293.75	355	277.50	266.25	298.33

Day time Noise Levels [in dB(A)] for 2019-20

Location	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
Main Gate	48	46	47	46	48	46	46	45	45	45	46	45
Switch Yard	64	64	63	61	64	61	63	62	62	59	63	59
Below ESP	73	74	72	73	72	73	71	73	70	72	70	72
Inside Chimney	57	55	62	61	63	61	56	53	61	59	62	59
Crusher Floor	74	74	72	74	72	73	72	73	70	73	70	72
Control Room	58	58	57	56	58	56	57	56	56	54	57	54
Outside Control Room	74	74	73	74	73	73	72	73	71	73	71	72
Security Office	48	47	49	47	50	47	47	45	48	45	49	45
Newatalai Panchayat Office	65	64	66	64	67	64	63	63	64	63	65	63
Near Cooling Tower	72	72	72	73	73	72	71	70	71	71	72	70

Night time Noise Levels [in dB(A)] for 2019-20

Location	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
Main Gate	44	43	45	42	43	44	42	42	43	41	41	43
Switch Yard	58	60	62	59	60	58	57	58	61	57	59	56
Below ESP	69	68	68	69	68	68	67	67	66	68	66	67
Inside Chimney	57	58	58	54	57	57	56	56	57	52	56	55
Crusher Floor	69	68	69	68	68	67	67	67	67	67	66	66
Control Room	57	56	57	57	56	57	56	54	56	55	55	55
Outside Control Room	69	69	68	69	69	69	67	68	66	68	67	68
Security Office	42	41	42	43	43	43	41	39	41	41	42	41
Newatalai Panchayat Office	63	61	60	60	61	63	61	60	58	59	59	62
Near Cooling Tower	69	69	68	69	69	69	68	67	67	67	68	67

Final Treated Water Analysis Report for 2019-20

Parameters	Limits	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20

TSS mg/lt	100	28	21	28	17	18	14	12	15	13	13	13	28
BOD mg/lt	30	8.23	8	7	12	8	5	6	3.2	3	3	6	7
COD mg/lt	250	30.07	25.86	24.58	43.01	25.86	18.43	38.02	35.55	38.78	16.64	26.62	24.58
pH	6.0-8.5	8.12	8.12	7.96	7.95	8.1	7.9	7.26	7.39	8.25	8.2	7.29	7.96
Phosphate as P mg/lt	5	2.54	1.78	BDL (<0.1)	BDL (<0.1)	0.84	0.55	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	0.67	BDL (<0.1)
Oil & Grease mg/lt	10	3	4	3	3	3	3	2	4	5	3	3	3
Free Available Chlorine mg/lt	0.5	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)
Copper mg/lt	1	0.05	BDL (<0.03)	BDL (<0.01)	BDL (<0.01)	0.02	0.02	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	0.03	BDL (<0.01)
Iron mg/lt	1	0.07	0.02	BDL (<0.01)	BDL (<0.01)	0.05	0.04	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	0.07	BDL (<0.01)
Total Chromium Cr+6 mg/lt	0.2	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
Zinc mg/lt	1	0.15	0.14	BDL (<0.01)	BDL (<0.01)	0.17	0.12	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	0.23	BDL (<0.01)
Sulphide mg/lt	2	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)
Temperture˚C Not more than 10˚C higher than the intake water temperature		31	31	38	30	28	29	27.2	25	18	22	26	38

Ashok Nagar STP Analysis Report for 2019-20

Except pH all values are in mg/lt

Parameters	Limits	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
pH	5.5-9.0	-	6.99	7.1	7.71	7.61	7.27	7.71	7.11	7.5	7.48	7.14	7.40
Total Suspended Solids	100	-	9	8	13	12	11	13	73	70	46	39	26
Oil & Grease	10	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Biochemical Oxygen Demand (3 days at 27^0C)	30	-	13	11	20	19	17	20	19	21	22	19	18
Chemical Oxygen Demand	250	-	138	135	212	211	195	212	148	200	143	135	100
Total Residual Chlorine	1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total kjeldahl Nitrogen (as N)	100	-	10	8	24	23	14	24	20	22	17	13	18
Amonical Nitrogen (as N)	50	-	5	4	10	9	6	10	9	11	8	7	10
Sulphide (as S)	2	-	0.4	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrate Nitrogen	10	-	5.22	5.15	4.89	4.85	3.66	4.89	3.8	4	4.2	4.9	4.9
Chlorides	1000	-	183.96	180.25	161.97	161.95	152.98	161.97	167.97	165	155.97	153.9	177.96
Sulphates	1000	-	155.7	152.5	126.4	126.3	114.6	126.4	152.9	140	268.3	341.2	310

Total Expenses for 2019-20

Particulars	Amount in Rs.
Plantation/Monitoring/Ash/RSPCB/Other Env Exp	**913859.33**