

Ref. No: FACL/BDK/ SPCB/851/2023-24
Date: 29.09.2023

To,

**The Member Secretary,
State Pollution Control Board,
Paribesh Bhawan, A/118,
Nilakantha Nagar, Unit-VIII,
Bhubaneswar.**

Sub: Submission of Environmental Statement for the year 2022-23 by M/s Ferro Alloys Corporation Limited (Power Plant), Randia, Bhadrak.

Sir,

With reference to the above cited subject, please find enclosed copy of Environmental Statement for the financial year ending 31st March,2023 in **Form-V** by M/s Ferro Alloys Corporation Limited (Power Plant) for your kind perusal.

Thanking you,

Yours faithfully,
For **Ferro Alloys Corporation Limited**



**Girish Chandra Mohanty
Factory Manager-PP**

Encl: As above

Copy to: The Regional Officer, SPCB, Balasore.

M/s. Ferro Alloys Corporation Ltd. (A subsidiary of Vedanta Ltd.)

Registered Office:

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**ENVIRONMENTAL STATEMENT
REPORT**

**FOR THE FINANCIAL YEAR
2022-23**

IN RESPECT OF

FERRO ALLOYS CORPORATION LIMITED (POWER PLANT)

Randia, Bhadrak, Odisha.

FORM – V
(See Rule – 14)

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-23

PART - A

01. Name and address of the : **M/s. Ferro Alloys Corporation Limited**
owner/occupier of the industry : **(Power Plant)**
operation At:D.P.Nagar, Po:Randia,
District – Bhadrak-756135, Odisha.
02. Industry Category : Red category
:
Primary (STC Code)
Secondary (SIC code)
03. Production Capacity : Captive Power Plant - 100 MW
04. Year of Establishment : July'2011
05. Date of last Environmental : 30.09.2022
Statement submitted

PART - B

WATER CONSUMPTION & RAW MATERIAL CONSUMPTION

1. <u>Water Consumption</u>	<u>M³/day (Max.)</u>
Process	63
Industrial Cooling	2263
Domestic (Potable)	114

2. Process Water Consumption

Name of the Products	Generation		Process water consumption / unit of Output	
	21-22	22-23	21-22	22-23
Power	290377 MWH	290365 MWH	2.71 m ³ /MW	3.31 m ³ /MW

3. Raw Material Consumption

Name of raw materials	Name of the product	Consumption of raw materials / unit of product output	
		21-22	22-23
Coal	Power	1.00T/MW	0.99 T/MW
LDO	Power	4 to 5 KL in every startup	4 to 5 KL in every startup

PART - C

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

A : WATER

Month of April 2022 to March 2023(average)

Sl. No.	Parameters	Quantity of Pollutants Discharged (load)
		Service Water Sample Water
01.	Color (Hazen)	<1.0
02.	Odour	Agreeable
03.	pH	7.78
04.	Temperature (°C)	29.9

05.	Total Suspended Solids (TSS)	36.1
06.	Oil & Grease	2.23
07.	Total Residual Chlorine	0.24
08.	Free Ammonia (NH ₃)	<0.5
09.	Chemical Oxygen Demand (COD)	13.26
10.	Arsenic (As)	<0.004
11.	BOD of 27 °C	3.74
12.	Hexavalent Chromium (Cr+6)	<0.05
13.	Total Chromium (Cr)	<0.1
14.	Copper (Cu)	<0.02
15.	Zinc (Zn)	0.41
16.	Selenium (Se)	<0.001
17.	Nickel (Ni)	<0.1
18.	Cyanide (CN)	<0.02
19.	Fluoride as F	0.66
20.	Dissolved Phosphates (P)	4.25
21.	Sulphide (S)	ND
22.	Iron (Fe)	1.47
23.	Nitrate Nitrogen	6.85
24.	Phenolic compounds (C ₆ H ₅ OH)	<0.001
25.	Sulphate as (SO ₄)	8.02
26.	Manganese (Mn)	0.026
27.	Total Coliform (MPN/100ml)	278.3
28.	Vanadium as V	<0.02
29.	Cadmium (Cd)	<0.03
30.	Lead (Pb)	<0.2
31.	Mercury (Hg)	<0.004

B. AIR

April 2022 to March 2023(average)

Sl.No.	Location	Pollutant concentration			
		PM (mg/Nm ³)	SO ₂ (mg/Nm ³)	NO _x (mg/Nm ³)	
01.	ESP outlet of CFBC Boiler	31.1	78.13	91.15	
		CO ₂ (%)	CO (%)	Hg (%)	
		6.6	<0.1	0.014	
02.	Ambient Air	PM 2.5 (µg/m ³)	PM 10 (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)
		39.3	68.3	10.8	18.5

PART - D

HAZARDOUS WASTE

(As specified under hazardous waste management and handling rules, 1989)

Hazardous Waste	Total Quantity	
	21-22	22-23
Used Oil	0.40 KL	1.36 KL
Waste containing Oil	0.16 T	0T
Spent Resin	1.60 KL	0 KL

PART- E

SOLID WASTE

Source	Total Quantity (MT)	
	21-22	22-23
Fly ash from Silos	114165	47306
Bottom ash from Boiler	18599	6493

PART - F

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

Solid Waste	Total Quantity (22-23)	Characteristics of fly ash	Remarks
Fly ash & Bottom Ash	53800 MT	SiO ₂ – 65% Al ₂ O ₃ – 22% Fe ₂ O ₃ – 6% CaO – 2.66% MgO – 2.03% TiO ₂ – 0.81% P – 0.023% S – 0.48%	We have provided 800M ³ volume of 3 nos of ash silo for CFBC Boiler and we have pneumatic ash handling system to control fugitive emission. Then ash is unloaded from silo into trucks and utilized for Fly ash brick manufacturing plants and low lying area land filling etc. We are constantly achieving 100% utilization of fly ash & bottom ash.

PART-G

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

1. Power plant has taken adequate pollution control measures at source level, so that the operation of the plant does not have any adverse impact on natural resources and environment.
2. High efficiency electro-static precipitators have been installed in CFBC boiler to reduce particulate emission from these units.
3. We have installed 10KLD STP for sewage water treatment and recycling the water for gardening purpose.
4. Similarly, 1000KLD Surface Runoff Treatment Plant has been installed to treat all runoff water inside the plant to achieve Zero Liquid Discharge.
5. Power plant has installed Wheel washing system to clean the wheel of vehicles to maintain the road clean.
6. Green belt has been developed inside the plant premises to reduce spread of noise and dust pollution.
7. All internal roads have been concreted to reduce the fugitive dust emission inside the plant premises.
8. Power plant has provided fixed and flexible water sprinkling system at various dusts generating area such as raw material carrying conveyer, coal circuit, rotary breaker etc. and also 1 no of mobile water tanker (capacity of 5KL) has been engaged for sprinkling of water at raw material yard, ash disposal site and inside & outside road of the factory.
9. Housekeeping has been taken on top priority and engaged 12 nos. of manpower on daily basis for maintaining neat & clean environment in the plant premises.

PART- H

Additional measures / investment proposal for environmental protection Including abatement of pollution

Expenditure for Environmental Protection FY 2022-23

i)	Installation of Online Continuous Effluent Monitoring Station with RTDAS system	:	10,07,720/-
ii)	Installation of Digital Flow meter in intake well	:	12,00,000/-
iii)	Installation of Temperature, Velocity, Flow measurement in CEMS	:	8,50,000/-
iv)	Installation of SOx & NOx Analyzers for CEMS	:	20,10,000/-
v)	ETP revamp	:	9676000/-
vi)	Energy consumption for Pollution control devices	:	12,22,523/-
viii)	Expenditure for Dust suppression system	:	6,58,350/-
ix)	Engagement of Labor for housekeeping & Plantation maintenance work	:	23,06,880/-
x)	Engagement of Water Tanker for dust suppression	:	216000/-

Investment Proposal for Environmental Protection FY 2023-24

- Installation of SOx & NOx analyzers in CAAQMS– Rs.15,000,000/-
- Supply and installation of IOT flowmeter in intake well- Rs. 28305/-

PART – I

Any other particulars for improving the quality of the environment

Power plant has taken various initiatives for abatement of pollution control and environment protection measures. We have installed 10KLD STP for sewage water treatment and recycling the water for gardening purpose. Similarly, 1000KLD Surface Runoff Treatment Plant has installed to treat all runoff water inside the plant to achieve Zero Liquid Discharge. Unit has constantly achieving 100% ash utilization since April-2013 as a result we are utilizing the waste material as a resource for flyash bricks plant. We are continuously developing greenbelt wherever the open space is available to improve the plant beautification as well as prevention and control of pollution.



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