



**The Member Secretary
Jharkhand State Pollution Control Board
T A Division Building,
HEC Campus, Dhurwa
Ranchi – 834004**

MD/ ENV/ 810 /120 / 2020
Date: 15th September 2020

**Sub: Environmental Statement of Noamundi Iron Mine, M/s Tata Steel Limited
for 2019-20.**

Dear Sir

Kindly find attach herewith the Environmental Statement in the prescribed format (Form V) as per “Environmental (Protection) Amendment Rules 1992” of our Noamundi Iron Mine for your kind perusal.

Thanking you,

Yours faithfully
f: Tata Steel Limited

+ 
Head (Planning), OMQ

Encl: As above

**Copy to: The Regional Officer,
Jharkhand State Pollution Control Board, MB/12 New Housing Colony
Adityapur, Jamshedpur - 831013, Jharkhand**

TATA STEEL LIMITED

Mines Division Noamundi 833 217 India
Tel 91 9234301340 Fax 91 6596 290737
Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001
Tel 91 22 66658282 Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

ENVIRONMENT STATEMENT

Year - 2019-20



Rain water harvesting pond Noamundi



First feet - shoe recycling facility at Noamundi

NOAMUNDI IRON MINE

TATA STEEL LIMITED

September - 2020

FORM - V
(See Rule -14)

ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31st MARCH, 2020

NOAMUNDI IRON MINE, M/S TATA STEEL LIMITED

PART-A

1	Name and address of the owner/ occupier of the industry, operation or process	: Mr. R. P. Mali, Chief (Noamundi) Noamundi Iron Mine, TATA Steel Limited PO.: Noamundi, Dist.-West Singhbhum Jharkhand - 833217
	Nominated Owner	: Mr. Sanjit Kumar Adhya, Mines Manager (Noamundi) Noamundi Iron Mine, Tata Steel Limited PO.: Noamundi, Dist.-West Singhbhum Jharkhand - 833217
2	Industry Category	: Opencast Iron Mining Industry (Major)
3	Production Capacity	: Mine: 10 MTPA Iron Ore, Ore Processing & Dispatch: 18 MTPA
4	Year of Establishment	: 1926
5	Date of last Environmental Statement submitted.	: 25 th September 2019, vide letter no. MD/ENV/350/120/2019 for the year 2018-19

PART-B

Water and Raw Material Consumption

(i) Water Consumption:

<u>Consumption Head:</u>	2018-19 (in cu.m/day) (Annual Average)	2019-20 (in cu.m/day) (Annual Average)
Process	3297.28	3084.08
Spraying in mine pit, services	189.25	208.89
Domestic	1755.07	2092.78
Name of the product	Process water consumption per product output (m³/MT)	
Iron Ore	0.16	0.12

ii) Raw Material Consumption

The following items have been consumed/ utilized:

Name of Raw Materials	Name of Product	Consumption of Raw Material		
		During previous financial year (2018-19)	During current financial year (2019-20)	
High Speed Diesel	Iron Ore of steel grade	6535508 Ltrs	6872209 Ltrs	
Petrol		111531 Ltrs	102793 Ltrs	
Lubricants		354682 Ltrs	246749 Ltrs	
Grease		24952 kg	24156 kg	
Explosive		Nitrate mixture and Slurry explosivesh	Large dia (above32mm)- 2478242 Kg	Large dia. (above 32mm)-3200416 Kg
		Detonators	47767 no.	53372 no.
		Detonating Fuse	9955 mts	8275 mts
Gas		12890 cum	10402 cum	
Tyres		243 nos.	121 nos.	
Drill rods		493 nos.	713 nos.	
Electric Power in KWH				
Consumed	Iron Ore of steel grade	47575300.00	55031902.00	
Generated (From 3 MW Solar Plant)		4441230.00	4473261.00	

PART-C

POLLUTION DISCHARGED TO ENVIROMENT/ UNIT OF OUTPUT
(Parameters as specified in the consent issued)

Pollutants	Quantity of Pollutants discharged (mass / day)	Concentration of Pollutants discharges (mass / day)	Percentage of variation from prescribed standards with reasons
a) Water	<p>The Noamundi Iron Mine with the processing plant is a zero effluent discharge unit; all the effluent generated from the processing of iron ore is collected from slime pond and recycled & reused by 100% in various activities including dust suppression and iron ore processing.</p> <p>Two sewage treatment plant (STP) of 50 KLD are installed & in operation and entire treated water is recycled & reused for plantation and gardening purpose.</p> <p>Two Effluent treatment plant (ETP) of 10 KLD is installed & operational in Hospital area and Canteen area(in Bottom Bin) and entire treated water is used in green park.</p> <p>All the water quality results of ETP & STP are attached herewith in annexure-1.</p>		
b) Air	<p>The Noamundi Iron Mine is an opencast iron mine with processing plant & dispatch unit. The air quality in the form of fugitive, dust fall, ambient, respirable is been measured and monitored regularly and is well within limits.</p>		

Pollutants	Quantity of Pollutants discharged (mass / day)	Concentration of Pollutants discharges (mass / day)	Percentage of variation from prescribed standards with reasons
	<p>All the dust generating points such as loading -unloading devices are equipped with dust arresting system such as dry fog, fixed & mobile water sprinklers, mist spray, dust extractors -bag filters, water scrubbers etc.</p> <p>There are two stationary point sources such as stack of dust extractor from crushing point & DG set used for emergency powers. Both are designed as per standards and regular monitoring is been done.</p> <p>Two continuous ambient air quality monitoring stations with PM₁₀, PM_{2.5}, SO_x, NO_x, (NO₂ & NO) & CO parameters are continuously been monitored with online data connectivity at State Pollution Control Board server.</p> <p>A thick & dense vegetation is also placed in all surrounding the area which significantly reduced the pollution load.</p> <p>The results of air quality monitoring is attached as annexure-2.</p>		

PART-D

HAZARDOUS WASTES

As specified under the Hazardous & Other Waste (Management & Trans boundary Movement) Rules, 2016 and amendment thereof

Hazardous Wastes	Total Quantity	
	During current financial year (2018-19)	During current financial year (2019-20)
i) From Process <ul style="list-style-type: none"> • Used Oil • Waste containing Oil (Jute etc.) • Lead Bearing residues (Batteries etc) • Empty barrels / discarded containers etc 	34820 Ltrs Nil 560 nos 662 nos	87870 Ltrs Nil 164 nos. Nil
ii) From Pollution Control Facility <ul style="list-style-type: none"> • Waste oil from oil & grease separation pit • Sludge from oil and grease separation pit 	Nil (Included in process) All the Hazardous waste generated is disposed to authorised recyclers as per law.	

PART-E

SOLID WASTES

Solid wastes from Noamundi Iron Mine is been categories in two parts i.e. Overburden removed during mining operations and slime/tailings generated from beneficiation of Iron Ore. All the materials overburden and tailings are stocked in designated places as per approved mine plan within the mine lease.

Sources	During previous financial year (2018-19)	During current financial year (2019-20)
a) From Process <ul style="list-style-type: none"> From mining as Overburden From OB Plant as Tailing 	35,02,151 Tonne 963261 Tonne	2389191 Tonne 592282 Tonne
b) From Pollution Control Facility Ash from Hospital Incinerator	13.0kg	17.7kg
c) i. Quantity recycled or reutilized within the unit <ul style="list-style-type: none"> Slime / Tailings 	Slime beneficiation process being explored at R&D dept.	Slime beneficiation process being explored at R&D dept.

PART-F

PLEASE SPECIFY THE CHARACTERISTICS (IN TERMS OF COMPOSITION AND QUANTUM) OF HAZARDOUS AS WELL AS SOLID WASTES AND INDICATE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES

The Noamundi Iron Mine and beneficiation plant generate hazardous waste mainly in the form of used oil. The used oil is being generated from HEMM maintenance, which are used in mining operations. The used oil is disposed to authorized agency for recycling and reuse. During handling and maintenance of HEMM, the oil soaked materials (jute etc) is been kept and disposed in impervious pit. The hazardous waste such as used batteries is sold to authorized agency.

The other solid waste in the form of overburden and sub-grade mineral are stocked in designated place and the same is being reclaimed by plantation after being declared inactive. Slime from ore washing plant is separately stored in a slime dam.

PART-G

IMPACT OF POLLUTION ABATEMENT MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION

- Noamundi Iron Mine is continuously a five-star rated iron mine as per Sustainable Development Framework (SDF) has declared by Indian Bureau of Mines, Ministry of Mines, Govt. of India from last successive several years.
- For mineral conservation techniques are installed and operated by unit, such as blending of waste / subgrade materials, use of low-grade ore etc as per customer quality requirements.
- For conservation of natural resources, high efficiency HEMM are used with adequate maintenance to reduce the fuel consumption. Zero effluent discharge is been maintained & all process water is recycled – reuse 100% back which reduces the fresh water consumption and withdrawal.
- For ground water augmentation, various rain water harvesting structures are made, which harvest ~ 2.5 million m3 per year. Which is ~1.3 times of the water consumed by mine through various RWH structures.
- A 3MW Solar Power Plant is also been installed and operated at Noamundi area from May 2017.

PART-H

ADDITIONAL MEASURES/ INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION, PREVENTION OF POLLUTION

- The material dispatched mainly from conveyor belts. Various toe wall, garland drains are made as per progressive mine closure plan. For mineral conservation measures, slime (processed waste) from pond is been stocked at designated place for future use. The slime stock is covered with geo-green blanket for adequate stability.
- For biodiversity conservation, a niche -nesting project implemented at Noamundi. Which provides artificial wooden nest boxes for birds in reclaimed area for enhancing their population naturally. Nursery of 1 Lakh sapling developed in area and only local trees are planted, tree transplantation work is initiated in area.
- Approx Rs. 1 Crore shall be spent towards buying scientific equipment and strengthening the environmental laboratory
- In addition to the above Tata Steel Rural Development Society (TSRDS) is engaged in peripheral developmental activities in villages around the mine like various civil amenities projects, digging ponds in support to provision of irrigation water and for other domestic use irrigation and agricultural extensions and in recharging groundwater by arresting the flow of rainwater in downstream, plantation programmes, medi-care and health, education, rural sports and skill development, rural cultural promotion activities taken up in these villages.

PART-I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF THE ENVIRONMENT

Noamundi Iron Mine of TATA Steel Ltd. is a captive mine and is certified for the Integrated Management System (ISO-9001:2015, ISO-14001:2015 & OHSAS-18001:2007 and SA:8000) from last two decades. The unit has obtained various prestigious accolades and is the only a five star rated mine of Jharkhand State.

The unit is having a full-fledged Environmental Management department with well qualified personnel from environmental background to take care of all aspects relating to mines and processing plant of unit. Various parameters are measured in Env lab, which is recommended from State Pollution Control Board. The lab in future is under expansion and shall be accredited for NABL.

A small shoe recycling facility namely "First Feet" is installed at Mine with support of others.

Various awareness programs throughout the year conducted in the area which included celebration of World Environment Day, World Water Day, Mine Environment & Mineral Conservation Week, World Bio-diversity Week, Annual Flower & Vegetable Show etc. In which environment conservation models, current & future proposals are made, environment messages through Nukkad natak, poems, slogans, swachhata drive is been done every year.

The mine has established a dense plantation in mine out area of 126 ha known as Hill 1 & 2 which makes the mine very unique. For conservation of biodiversity in the area, various initiatives such as niche nesting - an artificial nesting box for bird are placed in area, Butterfly Park, Medicinal Park, Green Park, Dorabji Park, Nakshatra Park etc. developed in area. The mines has performed various examples of mineral conservation, upgradation of low grade mineral by various unique techniques, strengthening the social progress by various skill development and job orientation of programmes for stakeholders.

All above efforts make the mine clean - green and sustainable. In the year 2019-20, Rs 17.97 Cr are spent on various environmental activities from Noamundi Iron Mine.



Manager (Environment), OMQ

WATER QUALITY DATA 2019-20
Noamundi Iron Mine
(Annual Average)

Parameters	SURFACE WATER		SEWAGE TREATMENT PLANT				EFFLUENT TREATMENT PLANT		Standard
	Balijharan Nalla Upstream	Balijharan Nalla Downstream	50 KLD Inlet	50 KLD Outlet	10 KLD Inlet	10 KLD Outlet	10 KLD Inlet	10 KLD Outlet	
pH*	7.47	7.54	6.98	7.23	7.08	7.36	7.07	7.32	5.5-9.0
TSS (mg/l)	38.00	42.20	61.17	24.67	62.17	26.34	67.50	22.09	100
BOD 5 days (mg/l)	2.20	3.57	33.80	13.70	34.90	11.90	29.17	22.26	30
COD (mg/l)	28.67	34.67	225.67	66.00	210.67	53.68	201.67	165.16	250
Oil & Grease (mg/l)	--	--	3.60	ND	4.65	ND	ND	ND	10.0
Iron (mg/l)	0.38	0.49	0.57	0.25	0.61	0.26	3.00	0.84	3.0
Faecal Coliform	-		180.50	55.64	182.50	<1.8	<1.8	<1.8	MPN/100 ml

Note: ND – Not Detected

AIR QUALITY DATA 2019-20
Annual Average Air quality of Noamundi Iron Mine of FY'20

Pollutants	Concentration of pollutants ($\mu\text{g}/\text{m}^3$)	Standards ($\mu\text{g}/\text{m}^3$)
MRSS Building		
1. PM ₁₀	51.42	100
2. PM _{2.5}	25.16	60
3. SO ₂	4.74	80
4. NO _x	13.72	80
Bottom Bin area		
1. PM ₁₀	58.40	100
2. PM _{2.5}	29.83	60
3. SO ₂	4.83	80
4. NO _x	15.54	80
GM's Office		
1. PM ₁₀	53.36	100
2. PM _{2.5}	26.18	60
3. SO ₂	4.60	80
4. NO _x	15.80	80
Near Hospital		
1. PM ₁₀	50.62	100
2. PM _{2.5}	25.28	60
3. SO ₂	4.84	80
4. NO _x	15.36	80