To

Member Secretary
Jharkhand State Pollution Control Board
TA Division
HEC Campus, Dhurwa,
Ranchi – 834 004
(Jharkhand)

MD/ENV/275 /120/18
25th September, 2018

Sub: Environment Statement of Noamundi Iron Mine, TATA Steel Ltd. for FY 2017-18.

Dear Sir,

Kindly find attached herewith the Environment Statement in the prescribed format (FORM V) as per "Environmental (Protection) Amendment Rules, 1992", of our Noamundi Iron Mine, TATA Steel Ltd. for your kind perusal.

Thanking you
Yours faithfully,

f: Tata Steel Limited

Sr. Manager (Environment) OMQ
Encl: As above.

Copy to: Regional Officer, Jharkhand State Pollution Control Board, MB/12, New Housing Colony, Adityapur, Jamshedpur – 831 013 (Jharkhand).

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ENVIRONMENT STATEMENT
2017-18

NOAMUNDI IRON MINE
TATA STEEL LIMITED

FORM - V
(See Rule -14)

Environment statement for the financial year ending the 31st March, 2018

NOAMUNDI IRON MINE, TATA STEEL LIMITED

PART–A

i)	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,** **Post: Noamundi, Dist.-West Singhbhum, Jharkhand–833217**
	Nominated Owner	:	Mr T V Narendran, CEO & Managing Director, TATA Steel Limited Jamshedpur-831001
ii)	Industry Category	:	Opencast Iron Mining industry (Major)
iii)	Production Capacity units	:	Mine: 10 MTPA Iron Ore and Ore Processing Plant: 13 MTPA
iv)	Year of Establishment	:	1926
v)	Date of last Environmental Statement submitted.	:	26th September 2017 vide letter no. MD/ENV/597/120/17 for the year 2016-17

PART–B

Water and Raw Material Consumption

(i) Water Consumption

Consumption Head:	**2016-17 (in cum/day) (Annual average)**	**2017-18 (in cum/day) (Annual average)**
Process	5471.37	4256.86
Spraying in mine pit , services	157.37	164.39
Domestic	1171.37	1960.31
Name of the product	**Process water consumption/ product output (m3/MT)**	
	During the Previous financial Year (2016-17)	During the current financial Year (2017-18)
Iron Ore	0.35	0.22

(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 (2016-17)	During current financial year (2017-18)
High Speed Diesel	Iron Ore of steel grade	52,46,833 Litres	76,22,523 Litres
Lubricants		4,90,496 Litres	4,90,496 Litres
Grease		37,310 kgs	37,310 kgs
Explosives of all types (Explosive, codex, detonator)		12,95,062 kgs	19,16,480 kgs.
Gas		28,811 cum	26,616 cum
Tyres		152 nos.	169 nos.
Drill rods		88 nos.	179 nos.
Electric Power in KWh			
Consumed	Iron Ore of steel grade	4,80,14,600.00	4,84,43,000.00
Generated (From 3 MW Solar Plant)		--	48,82,460.40

PART–C

Pollution discharged to Environment / unit of output

(Parameters as specified in the consent issued)

Pollutants	Quantity of Pollutants discharged (mass / day)	Concentration of Pollutants in discharges (mass/day)	Percentage of variation from prescribed standards with reasons
a) Water	The Noamundi Iron Mine and 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 by 100% in various activities including dust suppression and iron ore processing. A sewage treatment plant (STP) of 50 KLD and 10 KLD are in operation and entire water is used for plantation and gardening purpose. An Effluent treatment plant (ETP) of 10 KLD is installed in hospital area and entire treated water is used in green park. All the water quality results are attached herewith in annexure-1.		

Pollutants	Quantity of Pollutants discharged (mass / day)	Concentration of Pollutants in discharges (mass/day)	Percentage of variation from prescribed standards with reasons
b) Air	The Noamundi Iron mine is an opencast iron mine and thus no point source is available. However, for area lighting small capacity of DG sets are used in mines. The air quality in the form of fugitive, dust fall, ambient, respirable is been measured and monitored regularly and is well within limits. To address the fugitive dust various dust sprinklers (fixed, mobile, mist cannon) are also installed in mines. In the Noamundi processing plant for various dust generating point sources, dust control measures are installed; such as dust extraction system, dry fog system, mist cannon etc. For emergency purpose DG sets of adequate capacity are also been operated as on when required. The air quality monitoring of all point sources are regularly been monitored and all results are well within limits. The average results of air quality monitoring is attached as annexure-2.		

PART–D

Hazardous Wastes

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

Hazardous Wastes	Total Quantity	
	During the previous financial Year (2016-17)	During the Current financial Year (2017-18)
I) From Process: ▪ Used Oil ▪ Waste containing Oil (jute etc) ▪ Waste Used Batteries ▪ Discarded containers	13,000 Litre 0.50 MT Nil Nil	1,09,620 Litre NIL 954 nos Nil
II) From Pollution Control Facility: ▪ Waste oil from oil & grease separation pit. ▪ Sludge from oil and grease separation pit.	Nil. All the Hazardous waste generated is disposed as per law	

PART–E

SOLID WASTES

Solid waste from Noamundi Iron Mine is been categories in two parts i.e. Overburden/rejects removed during mining operations and slime/tailings generated from beneficiation / processing of iron ore. All the material overburden and tailings are stocked in designated place inside the mine. However, other solid waste is also being generated from mining and processing / beneficiation activity.

Sources	TOTAL QUALITY	
	During the Previous Year (2016-17)	**During the Current Year (2017-18)**
a) From Process:		
▪ From Mining as Overburden	1525932MT	2346976 MT
▪ From OB plant as Tailing	519866 MT	610624 MT
b) From Pollution Control Facility Ash from Hospital incinerator	Nil	Nil
c) i. Quantity recycled or reutilized within the unit		
▪ Slime / Taillings	Slime beneficiation process is explored	Slime beneficiation process is explored
ii. Quantity sold		
▪ Used conveyors	92.27 tonnes	165.3 tonnes
iii. *Quantity disposed		
▪ Mining overburden	1525932 MT	2346976 MT

*Note: Solid waste in the form of steel scrap etc is also been disposed from site.

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 processing / beneficiation generates hazardous waste mainly in the form of used oil. The used oil is being generated from HEMM maintenance used in manning operations. The used oil is disposed to authorized agency for recycling and reuse. During handling and maintenance of HEMM, the oil soaked material (jute etc) is been kept & disposed in impervious pit. The hazardous waste such as used batteries are sold to authorized agency.

The other solid waste in the form of overburden, sub-grade mineral and slime/tailings are stocked in designated place.

PART-G

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

- Noamundi Iron Mine is a five-star rated iron mine as per Sustainable Development Framework (SDF) as declared by Govt. of India from last successive two years 2016-17 & 2015-16.

- For mineral conservation, various techniques are installed and operated by unit, such as blending of waste / subgrade material, use of wet beneficiation process to make waste /low grade ore to high grade for use.

- For conservation of natural resources such as water Zero effluent discharge is been maintained and all 100% process water is recycled - reused back. Which reduces the fresh water consumption and withdrawal.

- The unit has various rain water harvesting structures and about 22% of water from rainfall of area is been harvested by various structures.

- Sewage Treatment Plant (STP) of 50 KLD and 10 KLD are installed and been operated. Effluent Treatment Plant (ETP) of 10 KLD is also been installed at Hospital for smooth operations and all the treated water is been used for plantation and gardening purpose.

- A 3 MW 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

- In the year 2017-18, one Sewage Treatment Plant (STP) of 50KLD capacity and an Effluent Treatment plant for Canteen of 10 KLD capacity is been installed and under trial run at Noamundi area.

- Various toe wall, garland drains are made as per progressive mine plan. For mineral conservation measures, slime (processed waste) from pond is been stocked at designated place for future use. The slime stock is been covered with geo-green blanket for adequate stability.

- Two numbers of Continuous Online Ambient Air Quality monitoring station (CAAQMS) is also installed & operated regularly. Various ambient air quality parameters such as PM10, PM2.5, SOx, NOx, CO etc. is continuously been measured with 15 min interval via online.

- The dust extractor system of processing plant along with dry fog system is been extended for additional points with adequate maintenance.

- The unit has constructed various toilets / bio-toilets in a special swatchhata drive in year.

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.

In the year 2016-17 the mine has established a SABAL Centre for Abilities, Noamundi, which is a CSR initiative of Tata Steel, a joint venture between Tata Steel Skill Development Society, Jamshedpur and EnAble India, Bengaluru. It envisions life of dignity for people with disabilities (PWDs) and its mission is to empower the target group through qualitative programs of skill development and promotion of inclusiveness.

In the year 2016-17, a solar power plant of 3 MW is commissioned at Noamundi, which is one of its unique kind; in an Iron ore, mine of India. The power generated helps to reduce our dependency on renewal resources and caters the emergency, which also helps to reduce the greenhouse gases.

Various awareness programs throughout the year conducted in the area which included celebration of World Environment Day, World Water Day, Mine Environment and Mineral Conservation Week, World Bio-diversity Week, Annual flower and Vegetable Show etc. In which environment conservation models, current & future proposals are made, environment messages through nukkad natak, poems, slogans, swatchhata drive is been done every year. The mine has established a dense planation 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, nakshtra 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 makes the mine clean - green and sustainable.

In the year 2016-17, Rs 29.76 are been spend on environmental activities per tonne of iron ore produced from Noamundi Iron Mine.

Sr. Manager (Environment), OMQ

Annexure - 1

WATER QUALITY DATA 2017-18
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*	7.23	7.28	6.35	7.14	6.36	7.11	6.29	7.17	5.5–9.0
TSS mg/l	34.1	38.20	178.33	22.08	156.42	20.58	135.25	24.0	100
DO mg/l	5.80	5.92	-	-	-	-	-	-	>4
BOD 5 days mg/l	<1.8	<1.8	80.67	8.36	71.84	7.35	56.5	7.85	30
COD mg/l	10.30	13.60	210.0	28.91	189.0	24.58	151.0	24.00	250
Fe mg/l	0.40	0.43	0.94	0.26	0.85	0.25	1.23	0.29	3.0

Annexure 2

AIR QUALITY DATA 2017-18
Annual Average Air of Noamundi Iron Mine of FY' 18

Pollutants	Concentration of pollutants ($\mu g/m^3$)	Standards ($\mu g/m^3$)
MRSS Building		
1. PM_{10}	59.52	100
2. $PM_{2.5}$	29.58	60
3. SO_2	4.72	80
4. NO_x	12.98	80
Bottom Bin area		
1. PM_{10}	67.89	100
2. $PM_{2.5}$	34.94	60
3. SO_2	5.34	80
4. NO_x	14.24	80
GM's Office		
1. PM_{10}	46.78	100
2. $PM_{2.5}$	22.41	60
3. SO_2	4.37	80
4. NO_x	11.36	80
Near Hospital		
1. PM_{10}	55.48	100
2. $PM_{2.5}$	27.18	60
3. SO_2	4.52	80
4. NO_x	12.26	80