The Member Secretary
Jharkhand State Pollution Control Board
T A Division
HEC CAMPUS, Dhurwa
RANCHI–834004, Jharkhand

MD/ENV/393/120/16
Date: 29.09.2016

Dear Sir,

Sub: Environment Statement of Noamundi Iron Mine, Tata Steel Ltd. for FY 2015-16.

As required under "Environmental (Protection) Amendment Rules, 1992", we are submitting here with the Environmental Statement for our Noamundi Iron Mine for your kind perusal.

Thanking you,
Yours faithfully,

F: Tata Steel Limited

Head (Planning), OMQ

Encl: As above.

Copy to: Regional Officer, Jharkhand State Pollution Control Board, MB/12 New Housing, Colony, ADITYAPUR, Jamshedpur-831 013, 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 India
Tel 91 22 66658282 Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

ENVIRONMENT STATEMENT
2015-16

NOAMUNDI IRON MINE

TATA STEEL LIMITED

FORM - V

(See Rule -14)

ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31st MARCH, 2016

NOAMUNDI IRON MINE, TATA STEEL LIMITED

PART–A

1	Name and address of the owner/ occupier of the industry, operation or process	:	Noamundi Iron Mine, Tata Steel Limited, Noamundi, Dist.-West Singhbhun, Jharkhand–833217
	Agent	:	Mr Debasish Jena
	Nominated Owner	:	Mr T V Narendran, Managing Director, Tata Steel India & SEA, Jamshedpur-831001
2	Industry Category	:	Major
3	Production Capacity	:	10 MTPA Iron Ore
4	Year of Establishment	:	1926
5	Date of last Environmental Statement submitted.	:	29th September, 2015

PART–B
Water and Raw Material Consumption

(i) Water Consumption:

Consumption Head:	**2014-15 (in cum/day) (Annual average)**	**2015-16 (in cum/day) (Annual average)**
Process	5673.61	5329.95
Spraying in mine pit , services	156.42	192.70
Domestic	2120.14	1274.11
Name of the product	**Process water consumption per product output (m3/MT)**	
	During the Previous financial Year (2014-15)	During the current financial Year (2015-16)
Iron Ore	0.56	0.42

Based on industrial water consumption for processing of ROM of Noamundi & Katamati Iron Mine.

(ii) Raw Material Consumption

The following items have been consumed/ utilized:

Name of Raw materials	Consumption of Raw Material	
	During previous financial year (2014-15)	During current financial year (2015-16)
High Speed Diesel	3689112 Litres	4167470 Litres
Lubricants	248307 Litres	265091 Litres
Grease	14762 kg	16726 kg
Explosives of all types (Explosive, codex, detonator)	1038513.325 kg	1564987.475 kg
Electric Power:		
Consumed	37752552 KWH	41240288 KWH
Generated	0 KWH	0 KWH
Gas	22631 Cum	21705 Cum
Tyres	141 Nos.	105 Nos.
Drill rods	12 Nos.	13 Nos.

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

Air Pollution:

Average Air Quality of NIM of FY' 16:

Pollutants	Concentration of pollutants ($\mu g/m^3$)	Standards ($\mu g/m^3$)
600 m RL Mine face		
1. PM_{10}	52.53	60
2. $PM_{2.5}$	35.02	40
3. SO_2	7.47	50
4. NO_x	9.97	40
Bottom Bin area		
1. PM_{10}	51.20	60
2. $PM_{2.5}$	33.72	40
3. SO_2	7.33	50
4. NO_x	9.86	40
GM's Office		
1. PM_{10}	42.73	60
2. $PM_{2.5}$	25.13	40
3. SO_2	6.81	50
4. NO_x	9.03	40
Near Hospital		
1. PM_{10}	40.77	60
2. $PM_{2.5}$	22.83	40
3. SO_2	6.63	50
4. NO_x	8.78	40

PART–D
HAZARDOUS WASTES

As specified under the Hazardous Waste (Management, Handling and Trans boundary) Rules, 2008 and amendment thereof

Hazardous Wastes	Total Quantity	
	During the Current Financial Year (2014-15)	During the Current Financial Year (2015-16)
I) From Process: ▪ Used Oil ▪ Waste containing Oil ▪ Waste Battery	 53400 Litre 1.00 MT 187 Nos.	 80000 Litre 0.50 MT Nil
II) From Pollution Control Facility: ▪ Waste oil from oil & grease separation pit ▪ Sludge from oil and grease separation pit	Included in the Item I	Included in the Item I

PART–E
SOLID WASTES

Solid waste from this mine is generally of two categories i.e. Overburden/rejects removed during mining operations and slime generated in the process of iron ore washing.

Sources	TOTAL QUALITY	
	During the Previous Year (2014-15)	During the Current Year (2015-16)
a) From Process: ▪ From Mining as Overburden ▪ From OB plant as Tailing b) From Pollution Control Facility c) i. Quantity recycled or reused within the unit ii. Quantity sold ▪ General Office Waste iii. Quantity disposed ▪ Mining overburden ▪ Canteen and colony waste	 661100 MT 482608.22 MT Not Applicable Study under Progress Nil 661100 MT Organic wastes are disposed in dumps	 274608 MT 536074.56 Not Applicable Study under Progress Nil 274608 MT Organic wastes are disposed in dumps

PART-F

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 composition of hazardous wastes like used oil & waste containing oil are Gear oil: SP460, 320, 220 & 90, Hydraulic oil: 68, 10, 46, and 100, Mobil oil: 20W40, 30, 40 Transformer oil, Grease: Senogem EP2, KG 10. Solid waste generated as overburden, sub-grade mineral and slime are inert. The average chemical composition of OB and slime are as follows:

	Overburden/Sub-grade (in %)	Slime (in %)
Fe	51.43	55.60
SiO_2	9.77	6.90
Al_2O_3	8.04	7.30
Phos	0.00	0.11

DISPOSAL PRACTICE:-

a) SOLID WASTES:

The overburden is systematically and scientifically dumped on a geologically barren area and properly supported with hard material and the same is being reclaimed by plantation after being declared inactive.

The organic wastes from the canteen and other places are stored in individual different waste buckets and arrangement, which are later on disposed at defined place to enrich the nutrient content. This has been found to hasten the plant growth and the seeds contained in the vegetable waste have contributed to the green cover in the dumps.

The municipal solid wastes (other than above) are segregated as per their characteristics e.g. paper, jute bags, tins, bottles, plastics, metal scraps etc. and are sold to a party at Cuttack for recycling. The inert material like building debris etc. is used as landfills development of landscapes etc.

Slime from ore washing plant is separately stored in a slime dam.

b) HAZARDOUS WASTE:

Used Oil:

The waste oil generated at various sources is collected in leak proof barrels and then are kept under a covered roof and on concrete platforms (Capacity – 200 Kl) in the barrels very carefully and sealed properly to avoid any spillage or leakage. The storage area is properly fenced and caution board displayed.

During transfer of waste oil to barrels, a trough is placed underneath in order to prevent land contamination due to oil spillage. Then at a fixed interval, these barrels are disposed through auction to the authorized recycler after due intimation to State Pollution Control Board. After dispatch of same, intimation of auction along with copy of manifest is also being sent to State Pollution Control Board.

Waste containing Oil:

Oil soaked jutes, filter and filter materials are produced during the schedule maintenance and repair of the vehicles from the workshop. It is stored in the HDPE lined placer dumper buckets. The HDPE enclosure prevents contamination of land and water bodies. Oil soaked sand/soil are stored in a vat made before the oil and grease separation system. Water is added to make the waste free from oil. The oil containing water is led to oil and grease separation system and the sand/soil is disposed off like filters and filter material mentioned above.

Oily waste in solid form are being collected and kept in an impervious pit. It is then regularly handed over to M/s West Bengal Waste Management Ltd. for incineration as advised by OSPCB.

c) WASTE BATTERIES :

The used lead acid batteries with diluted acid and caps intact are kept under a shed having impervious floor. Then at a fixed interval, these batteries are disposed through auction to the authorized recycler after due intimation to State Pollution Control Board. After dispatch of same, intimation of auction along with copy of manifest is also being sent to State Pollution Control Board.

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

- Efforts were made to reduce the consumption of lube oil used in heavy mining equipment, by arresting leakages in time and by eliminating spillages. During the year 2015-16 the total consumption of lubricants was 248307 litres. The specific lubricant consumption during 2015-16 has been achieved as 0.24 liter/MT as compared to 0.25 liter/MT during 2014-15.

- Similarly, attempts were made to reduce the consumption of electricity in our operations. During the year 2015-16 the total electricity consumption was 41240288 KWH.
- Water spraying on mine haul ways by water tankers has reduced the dust levels in the ambient air. The cost of operation and maintenance of water sprinklers during 2015-16 was approx. Rs. 174.00 lakhs.
- Dust suppression and dust extraction systems employed in the beneficiation plant have improved the work zone environment in the plant. During 2015-16, the mine has spent an amount of Rs.5.50 lakhs towards the maintenance of DS & DE System.
- Wet drilling is in practice by each Drill machine. This helps in minimizing the dust generation during the drilling activity. During 2015-16, the mine has spent an approx. amount of Rs. 29.60 lakhs for the above measures.
- Company has spent approx. Rs. 3.86 Lakhs for stack emission monitoring during 2015-16.
- An amount of Rs.80.00 lakhs was spent towards de-silting of Check dam during 2009–10.
- For maintenance of slime dam the company has incurred an expenditure of Rs.100.00 lakhs.
- An amount of Rs. 500.00 lakhs was spent towards construction of rain water harvesting structures.
- An amount of Rs. 1.80 lakhs was spent towards environmental monitoring.
- Towards the procurement of Laboratory instruments as required in the Environment Laboratory an amount of Rs. 50.00 lakhs was spent in the year 2015-16.
- An amount of Rs.0.90 lakhs was spent as a part of Manpower Engagement in the Environment Department in the year 2015-16.
- An amount of Rs. 3.56 lakhs was spent towards the maintenance of electronic boards at Noamundi during 2015-16.
- An amount of Rs. 3.50 lakhs was spent towards ground vibration studies conducted at Noamundi.
- An amount of Rs. 2.15 lakhs have been spent towards rock fragmentation studies at Noamundi Iron Mine, by CMIFR, Dhanbad.
- An amount of Rs.4.69 lakhs was spent towards towards vehicle engaged in Environmental Monitoring at Noamundi during 2015-16.
- For landscaping, horticultural development in the lease area and development of Sir Dorabji Tata Botanical Park an amount of Rs. 40.84 lakhs was spent during 2015-16.
- To generate awareness among the employees and their families about environment, World Environment Day was celebrated at Noamundi. During 2015-16 an amount of Rs. 1.50 lakh was spent on this account.
- Annual Flower and Vegetable Show was conducted in the month of January 2016 to make the public appreciate the importance of greening efforts. An amount of Rs. 2.50 lakh was spent for the show.
- Environment Management Department is functioning at Noamundi to manage monitoring and other required activities. The administrative expenditure of the department for year 2015-16 was Rs.17.00 lakhs.

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, illuminating villages by tapping renewable source of energy with the installation of solar lights, 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-H

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

- Approx Rs.3.50 lakhs will be spent on monitoring of various environmental parameters during next financial year.
- During monsoon 2015, 5050 saplings will be planted in available sites inside the lease area with a budgetary provision of approximately Rs.6.00 lakhs. About 2000 nos. of saplings have already been plated till Aug'16.
- Approx. 55.00 lakhs will be spent towards peripheral development during the next year.
- Approx Rs. 1 Crore shall be spent towards buying scientific equipment and strengthening the environmental laboratory.

PART-I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF THE ENVIRONMENT

- The mine is having a full-fledged Environmental Management Department with personnel from science background to take care of all environmental aspects relating to mines of TATA STEEL.
- This department has in-house capabilities for monitoring various environmental parameters and suggesting to the management necessary abatement measures.
- Dust suppression and Dust extraction system are installed in the plant with to improve the air quality.
- To check run-offs during monsoon season from the mine lease, four check dams are provided across Balijhor Nalla, which is passing through the lease. An amount of Rs. 25 lakhs were spent during 2013-14 for de-siltation of the check dams.
- Old mining benches have been reclaimed by afforestation and these areas are now converted into a forest like.
- An independent Environmental Laboratory is in operation since 1994 to carry out the monitoring and analytical jobs, with a total expenditure of Rs. 30 lakhs.
- The mine is certified to ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007. All the three systems have been integrated since 1st August 2008.

Head (Planning), OMQ