

POLLUTION CONTROL AND WASTE MANAGEMENT

STEEL AUTHORITY OF INDIA LIMITED(SAIL)

With a majority of Pollution Control Schemes having been implemented, with respect to compliance with norms for ambient air quality, stack emissions and effluent discharges improved during the year 2000-01.

An assignment from Central Pollution Control Board (CPCB) for Development of clean technology for iron and steel making and developing environmental standards for steel plants in India was successfully completed. Similar job for iron ore mines has also been assigned to company's Environment Management Division by CPCB for which the work is in progress.

BSP and RSP have received the Indo German Greentech Environment Excellence Award for the year 1999-2000 in the Metallurgical and Mining category and Achievements pertaining to Environment respectively.

Silicon Steel Mill of RSP has been accredited to EMS (ISO-14001) certification during the year.

Sustained efforts are under way towards obtaining EMS Certification to more units, solid waste recycling/reuse, reduction in consumption of water and energy, HRD and greenery peripheral development.

Indian Iron & Steel Company Limited(IISCO)

Environment Management and pollution control have become priority areas in the activities of the company. Ambient air quality, stack emissions and work environment quality were within specified limits of the statutory authority.

Environment awareness campaign through observance of the world Environment Day & Workshop/Training on Environment Management were organised for different sections of Employees at Burnpur, Chasnalla and Gua.

20 Nos. of Eco Clubs for schools were sanctioned by MOEF in 2000-2001.

About 2000 saplings of different plants were planted in Burnpur township and Works area.

Water consumption per tonne of crude steel reduced to 6.95 Cu.M in 2000-2001 which resulted in savings of Rs. 9.0 lakhs. Dust extraction system at A & B Boilers, Dolomite Plant and THF have been working effectively.

Authorisation of handling/disposal of hazardous wastes has been received from WBPCB and is valid upto 2005. Application for Consent for air emission and effluent discharge has been submitted to WBPCB.

MAHARASHTRA ELEKTROSMELT LIMITED

Environment management and Pollution Control continued to get top priority in the Company's activities during the year. To keep environment clean for ecological protection, thrust was given in the areas of green belt development in and around the plant premises, solid waste management, monitoring of liquid and air effluent for various environmental parameters. In addition to the regular maintenance of existing 14,500 teak plants further 1500 tree saplings were planted during the year.

To comply with the environmental standards set up by Maharashtra Pollution Control Board (MPCB), two nos. neutralization pits have been added in secondary treatment of trade effluents. Gas Cleaning Plant for SAF-II would also enhance the availability of clean gas for gainful utilization as a fuel to Sintering Plant, Lime Kiln and Gas based Captive Power Plant of 4.2 MW capacity.

Continuous steps were taken towards gainful utilization of High MnO Slag in SiMn Production, lumpy SiMn Slag as rail ballast and Sale of SiMn Slag for road construction.

RASHTRIYA ISPAT NIGAM LIMITED(RINL)

Environment Management is given topmost priority at VSP. Ambient air parameters, stack emissions, effluents and noise levels are monitored regularly and are maintained well below the norms fixed by the Central Pollution Control Board and State Pollution Control Board.

Major actions taken:

- Improvement in availability of DE Systems
- Increase in sale of Lime Dust, thereby improving Housekeeping
- Improvement in Water conservation
- Improvement in waste utilization.
- Usage of Tar Sludge in Coke Oven Batteries and Coke Dust in Sinter Plant

The expenditure on pollution control and waste management was Rs. 75 crores in 2000-01 and during the first half of 2001-02, the expenditure has been Rs. 37.5 crores. Environment management System as per ISO 14001 Standards has been implemented at VSP. The ISO 14001 certificate was awarded to VSP on 23.5.2001 by M/s BVQI.

NATIONAL MINERAL & DEVELOPMENT CORPORATION(NMDC)

Details of levels of achievement in respect of environmental quality vis-à-vis prescribed statutory standards are indicated below:

Ambient air quality :

(1) Total Suspended Particulate Matter (TSPM) in ambient air :

Typical production project	Observed Seasonal average TSPM values in $\mu\text{g}/\text{cum}$				CPCB standard in $\mu\text{g}/\text{cum}$
	Post-Monsoon/ Winter 1999-2000	Summer 2000	Post Monsoon 2000	Summer 2001	
Bailadila iron ore project. Dep-14/11c Kirandul					
Mine area	184	222	200	218	500 (Industrial & Mixed areas)
Crushing plant	177	255	213	181	500
Screening plant	152	204	212	166	500
Loading yard	114	154	207	158	500
Project Township	105	97	99	98	200 (Rural & Residential areas)

(2) Oxides of Sulphur (SO₂) in ambient air :

Typical production project	Seasonal average SO ₂ values in $\mu\text{g}/\text{cum}$				CPCB standard in $\mu\text{g}/\text{cum}$
	Post-Monsoon/ Winter 1999-2000	Summer 2000	Post Monsoon 2000	Summer 2001	
Bailadila iron ore project. Dep-14/11c Kirandul					
Mine area	17	26	14	16	120 (Industrial & Mixed areas)
Crushing plant	15	28	14	15	120
Screening plant	12	18	14	14	120
Loading yard	10	16	13	14	120
Project Township	10	16	11	10	80 (Rural & Residential areas)

(3) Oxides of Nitrogen in ambient air :

Typical production project	Seasonal average NO _x values in µg/cum				CPCB standard in µg/cum
	Post-Monsoon/ Winter 1999-2000	Summer 2000	Post Monsoon 2000	Summer 2001	
Bailadila iron ore project. Dep-14/11c Kirandul					
Mine area	19	32	14	18	120 (Industrial & Mixed areas)
Crushing plant	16	33	14	17	120
Screening plant	13	22	14	16	120
Loading yard	12	20	13	16	120
Project Township	12	20	12	12	80 (Rural & Residential areas)

(b) Water quality :

Name of the sampling location	Purpose of monitoring	Period of monitoring done	Observation of important parameters	Statutory limits of important parameters
Bailadila iron ore project, Dep-14/11c, Kirandul				
Discharge of Kadampal tailing dam	Industrial water pollution control	Summer 2001	Total suspended solids = 4.8 mg/l	GSR 422E limit for total suspended solids = 100 mg/l
Discharge of Oxidation pond	Domestic waste water treatment efficiency	Summer 2001	BOD = 4.0 mg/l COD = 10 mg/l Total suspended solids = 6.5 mg/l	GSR 422E limits for BOD = 30 mg/l COD = 250 mg/l Total suspended solids = 100 mg/l
Potable water supplied for drinking purposes	Safety & hygiene to human health	Summer 2001	pH = 7.48 Residual chlorine = 0.2 mg/l	IS 10500 limits for drinking water pH = 6.5 to 8.5 Residual chlorine = minimum 0.2 mg/l
Malinger nala	Potability assessment	Summer 2001	pH = 7.52 BOD = 2.0 mg/l DO = 7.1 mg/l	IS2296-ClassC limits: pH = 6.5 – 8.5 BOD = 3.0 mg/l DO = Min. 4.0 mg/l

Noise level measurements :

Name of the project and location of noise level monitoring	Purpose & season of monitoring	Observed noise level in dBA	Statutory standard in dBA
Bailadila iron ore project, Dep-14/11c, Kirandul			
Shovel working in Dep-14 mine pit	Work zone noise level measurement during Summer 2001	Leq = 85.7	Standard as per Noise pollution Regulation & control Rules, 2000 Leq = 90 dBA for 8-hr continuous shift
Kailash nagar hill top township adjacent to Dep-14 mine pit	Ambient noise level measurement for assessing human interferences during Summer 2001	Leq (day) = 43.7 dBA Leq(night) = 39.5 dBA	Standard as per GSR 1063E Leq (day) = 55 dBA Leq(night) = 45 dBA

(d) Ground Vibrations due to blasting :

Date of monitoring	Blast location	Location of sensor	Distance in mts	Max. charge per delay in Kgs	Peak particle velocity in mm/sec	Standard as per CMRI, Dhanbad and IS 6922	
		Sensor	RL				
26/4/01	1041m in Bailadila -14 mine pit						
		Umx-164 – same bench (ramp)	1053m	178	1875	6.86	12.5 mm/sec
		MM71- Adj. To Crushing plant	1134m	248	1875	7.06	12.5 mm/sec

Note : Peak particle velocity tabulated above is the vector sum of longitudinal, transverse and vertical propagation's.

It is thus observed that all the environmental parameters have been maintained within their permissible limits at all production projects both at work spots and in the adjoining township areas.

SPECIFIC POLLUTION CONTROL WORKS TAKEN UP/ PROPOSED DURING 2001-02 :

Bailadila Dep-5 :

1. Desilting of all check dams and Nerli dam.
2. A new check dam is proposed for the western side of Dep-5.
3. Regular water sprinkling on mine haul roads and at dumper platform.
4. Construction of ETP for service centre and Autosshop.
5. Maintenance of parks and gardens
6. Mosquito and pest control measures
7. 2,700m long RCC diversion channel has been constructed starting from upstream of existing fine ore dump at Bacheli for nala no. 25 upto the PWD road beyond railway crossing.
8. Regular environmental monitoring studies through reputed Environmental consultants having Laboratory recognition from MoEF, New Delhi.

Bailadila Dep-14/11C :

1. Afforestation of 50,000 saplings over an area of 91 ha at a cost of Rs 32.55 lakhs has been completed through Social Forestry division, Jagdalpur.
2. Desilting of 2.0 lakh cum of material from Kadampal tailing dam and Kirandul nala completed at a cost of Rs 68.40 lakhs.
3. A LOI for desilting of 10 lakh cum of material at a cost of Rs 322 lakhs has been issued in Oct'2001.
4. Maintenance of parks and gardens
5. Contour bunding at Dep-14 and Dep-11c mines
6. Improvements in water treatment plant.
7. Construction of ETP for Service centre complex
8. Regular water sprinkling on main haul roads and at dumper platform.
9. Use of completely atomized dust suppression system installed right from the Dep-11C Crushing plant till the loading yard. This system was installed by M/s F.Harley, Kolkata and it is working satisfactorily.
10. Regular environmental monitoring studies through reputed Environmental consultants having Laboratory recognition from MoEF, New Delhi.

Donimalai iron ore mine :

1. Construction of ETP at service centre and Autosshop
2. Plantation of 20,000 saplings at Donimalai and 5,000 saplings at Kumaraswamy projects have been completed during the current year.
3. 40,000 agave bulbs have been planted in Donimalai and 10,000 agave bulbs in Kumaraswamy mine areas during the current year.
4. Construction of an earthen dam at Ubbalagundi, east of South block at Donimalai is proposed.
5. Construction of pick up weir across the natural stream besides Govt. High school, Donimalai is proposed.
6. Planning a new earthen dam below the existing check dam of Block-B, Kumaraswamy mine with a water submergence area of 4.2 ha.
7. Regular environmental monitoring studies through reputed Environmental consultants having Laboratory recognition from MoEF, New Delhi are in progress in all the seasons.
8. After repairs, Automatic weather station at Donimalai hill top shall be shortly re-commissioned.

Diamond Mining Project, Panna :

1. Tendering action is on-hand for construction of Effluent Treatment Plant (ETP) at H.E.M. Workshop premises.
2. Development of Children park
3. Plantation of 5,000 saplings and maintenance.
4. Construction of a new check dam along Kaimason nala.
5. Desilting of material from Tailing pond is in progress.
6. Regular water sprinkling on mine haul road and road connecting the Processing plant with Coarse tailings dump being carried out.
7. Regular environmental monitoring studies

Expenditure incurred on Environmental protection & upgradation works excluding costs incurred for peripheral village community development works at all the 4 major production projects are given in the table below.

Sl. No.	Year	Expenditure incurred at the major production projects in Rs lakhs				Total in Rs lakhs
		Bailadila Dep-14/11c	Bailadila Dep-5	Donimalai Kumara-swamy	Panna	
1	1999-2000	156.83	102.37	76.01	14.09	349.30
2	2000-2001	305.64	214.18	51.95	11.25	583.02
3.	2001-2002 (Budget estimates)	429.50	175.00	109.00	88.90	802.40

The costs incurred towards peripheral village community development in Bailadila region is about Rs 3.0 crores per annum.

MANGANESE ORE INDIA LIMITED(MOIL):

Environmental Protection

The Company is conscious of its responsibility towards protection of environment in its leasehold areas. 45,000 saplings were planted during 2000-2001 at different mines. The total cumulative Plantation till date is more than 12 lakhs.

SPONGE IRON INDIA LIMITED(SIIL)

ANTI-POLLUTION MEASURES

All the provisions in the gazette notification dated 16.01.1991 and amendments thereof relating to anti dumping measures are complied with strictly. All the norms specified by A.P. Pollution Control Board/Central Pollution Control Board are strictly adhered and all the parameters are being well maintained within the stipulated limiting standards. The local Pollution Control Board Officials carry out periodical inspection and as recommended by them from time to time necessary steps are taken to ensure that prescribed standards are maintained.

WASTE LAND DEVELOPMENT

About 2.0 hectares of waste land is proposed to be levelled for developing greenery by planting 500 saplings as a part of clean and green programmes.

BHARAT REFRACTORY LIMITED(BRL)

All units of the Company has obtained/applied for valid "Consent" from the concerned State Pollution Board. Dedusting units have been installed at the Plant to control air pollution. BRL appointed experts for analysis of pollution levels and suggestions made by them are being implemented. The norms prescribed are strictly complied with.

MECON LIMITED

MECON does not have any industrial unit so industrial pollution does not take place. However, one sewage treatment plant is working at MECON's township at Shyamali, Ranchi. In our office premises the waste paper is incinerated after shredding and due precaution is taken as per statutory requirements with regards to DG Sets which supply emergency power.
