



CIN-L27101OR1984PLC001354

Ref. No. : BALB/ENV/MOEF/.....<sup>1124</sup>  
Date : 01.06.2015

To,  
The Chief Conservator of Forests (Eastern)  
Regional Office (EZ), A/3,  
Chandrasekharapur,  
Bhubaneswar-751023,  
Odisha  
Ref No: E.C letter No. J-11011/326/2008-IAII (I)  
Sub: Compliance Status Report (Oct'14 to March'15) for the proposed expansion  
project of 1X16.5 MVA.

Sir,

The proposed expansion of our project (95,000 TPA to 1,23,000 TPA) by installing one Submerged Arc Furnace of 16.5 MVA has not been started yet.

The compliance report for the month Oct'14 to March'15 is enclosed.

This is for your kind information.

Thanking You.

Yours Truly,

For Balasore Alloys Limited

Dr. J R SWAIN  
AGM (Env.)

CC: Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi-110032

The Secretary, Department of Environment & Forest, Govt. of Orissa,  
Bhubaneswar, Orissa

Chairman, Orissa Pollution Control Board, Parivesh Bhawan, A/118  
Neelkanthnagar, Unit-8, Bhubaneswar-751012, Orissa

**SIX MONTHLY COMPLIANCE STATUS OF EC LETTER No. J-11011/326/2008-IAII (I)**

SL. NO.	CONDITIONS	STATUS
<b>A) SPECIFIC CONDITIONS:</b>		
1.	Continuous monitoring facilities for all the stacks and adequate air pollution control equipments viz. Gas Cleaning Plant (GCP_ with spark arrester, forced draft cooler, bag filter etc. shall be provided to submerged arc furnace (SAF) to control particulate emissions below 100 mg/Mm <sup>3</sup> and shall be discharged into the atmosphere through stacks of adequate height as per CPCB guidelines. The Orissa Pollution Control Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time, the emission level shall go beyond the prescribed standards. Interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds the limit. Monitoring data shall be submitted to the Ministry's Regional office at Bhubaneswar and the OPCB, CPCB once in six months.	<p>We are having a separate cell for monitoring environmental conditions. Gas Cleaning Plant (GCP_ with spark arrester, forced draft cooler, bag filter devices are in place for the existing five furnaces and emission levels are maintained within the norms. A six monthly Stack monitoring report (October'14 to March'15) is attached in Annexure – I.</p> <p>Continuous monitoring of stack emission is in process of installation and completed by July'15.</p> <p>Interlocking facility to monitor and stop the process whenever emission level exceeds the limit is in process and will be in operation from July'15.</p>
2.	At least four ambient air quality monitoring stations shall be established in the downward direction as well as where maximum concentration of SPM, SO <sub>2</sub> and NO <sub>x</sub> are anticipated in consultation with the OPCB. Data on ambient air quality and stack emissions should be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and the OPCB / CPCB once in six months.	<p>Four monitoring stations are in place.</p> <p>Ambient Air Monitoring data for the period (October'14 to March'15) is given in Annexure – II</p>
3.	Dry fog dust suppression system shall be provided to the metal recovery plant to control fugitive emissions. Dust suppression system like water spraying shall be provided at raw material handling, conveyor transfer and feeding points to control fugitive dust emissions to meet the OPCB norms. Water spraying shall also be done to prevent the dust emanation due to vehicular movement.	<p>Dry Fog dust suppression arrangements are in place at fugitive emission points of raw material transfer and feeding points. Water spraying systems through mobile water tanker has been provided at RM handling yard and haul road to suppress dust emission due to vehicular movement and raw material handling.</p> <p>At Metal recovery plant water spraying system provided to arrest the fugitive emission.</p> <p>Photographs are attached in Annexure –III.</p>

4.	Secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the ministry and regularly monitored. Guidelines/Code of Practice issued by the CPCB shall be followed.	PM Level is measured in regular interval of time and is under control i.e. within permissible limits. Which indicates the particulate matter in ambient air quality is within the permissible limit. (attached in annexure –II)
5.	Vehicular pollution due to transportation of raw material and finished product shall be controlled. Proper arrangements shall also be made to control dust emissions during loading and unloading of the raw material and finished product.	Mobile water sprinkling system is provided at RM handling area, finish product yard and inside the plant premises And finish product is loaded to trucks in HDPE bags.
6.	Total ground water requirement from bore wells after expansion shall not exceed 1,699 m <sup>3</sup> /day as per the permission accorded by the Central Ground Water Authority vide letter dated 9 <sup>th</sup> June, 2008. Closed circuit cooling system shall be adopted to reduce water consumption. Cooling under blow down shall be treated. Effluent from jigging plant shall also be suitable treated in settling tank and recycled/reused in the process or for ash handling, dust suppression, Green belt development and other plant related activities within the plant premises. No wastewater shall be adopted. Domestic wastewater shall be treated in septic tanks followed by soak pit system and used for green belt development.	As this project has not been started, our water consumption is 802M <sup>3</sup> /day. Closed circuit cooling system has been adopted and all the cooling water blow down and jigging effluent has been recycled after treatment and used for dust suppression and green belt development. No process water is going outside plant premises. CGWA Letter no. 21-4(41)/SER/CGWA/2008-1601, dtd.-30.09.2014.
7.	Proper handling, storage, utilization and disposal of all the solid waste shall be ensured and regular report regarding toxic metal content in the waste material and its composition, end use of solid/hazardous waste shall be submitted to the Ministry's Regional Office at BBSR, OPCB & CPCB.	Solid waste as Ferro-chrome slag is processed for recovery of entrapped chrome metal through MRP and stored at earmarked area inside plant premises, sold to local area for low land filling and road construction. Analysis for content of hazardous material is tested by third party on regular basis. Detail is in Annexure-IV.
8.	Metal Recovery Plant shall be installed to recover metal through hydraulic jaxzing process. Slag tailing shall be dumped in own premises after recovery of the metal and used in environment-friendly manner. The fume dust collected from submerged arc furnace (SAF) shall be mixed with Chrome ore finest and fed into briquette plant for reuse. Used oils/lubricants shall be sold to authorized recyclers/processors.	As mentioned in Sl. 7 compliance, slag is processed in a environment-friendly manner as prescribed. Fume dust of SAF is collcted from bag houses and 100 % mixed with chrome ore for briquette making and fed to furnace as raw material. Used Oil is stored at a earmked area with covered shed and sold to authorized recycler. Photos are attached as Annexure-V

9.	Chromate slag shall be used for road making only after passing through Toxic Chemical Leachability Potential (TCLP) test. Otherwise, Ferro Chrome shall be recovered from the slag & output waste shall be disposed in secured landfill as per CPCB guidelines. All the other solid waste shall be properly disposed off in environment-friendly manner. No hazardous materials shall be spilled out and good housekeeping practices shall be adopted.	Fe-Cr is recovered from the Chromate slag through our Metal Recovery Plant and the ultimate waste i.e. slag tailings in form of chips & fines are reused for road making, construction of walls etc. Quantity of slag tailings generated and its disposal (October'14 to March'15) is given in Annexure – VI.
10.	As proposed green belt shall be developed in at least 34% area within and around the Plant premises as per the CPCB guidelines in consultation with DFO.	More than 34 % of total plant area is covered by green belt and now we are going for avenue plantation at nearby villages and Balasore city.  Please refer Annexure – VII.
11.	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Ferro Chrome units shall be strictly implemented.	Attached as An Annexure-VIII

**B) GENERAL CONDITIONS:**

1.	The project authorities must strictly adhere to the stipulations made by the Orissa Pollution Control Board (OPCB) and the State Government.	To be abide by the stipulated conditions of OSPCB.
2.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Any further expansion will be done with prior approval of ministry of environment and forest.
3.	In-plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fume and dust extraction system with bag filters shall be provided at the transfer and discharge points to control fugitive emissions. Further, specific measures like water sprinkling around the raw material storage areas and asphaltting or concreting of the roads shall be done to control fugitive emissions.	<ul style="list-style-type: none"> <li>Two nos. of Mobile water tankers are used for water sprinkling on roads throughout year with 4KL water carrying capacity each.</li> <li>Dry fog dust suppression system has been installed at underground bunkers and in respective conveyors of the Furnaces to avoid fugitive emission during loading, unloading &amp; feeding of raw materials.</li> </ul> 97% of internal roads are concreted. Rest part is under process of construction.
4.	Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 <sup>th</sup> May, 1993 and 31 <sup>st</sup> December, 1993 or as amended form time to time. The treated wastewater shall be utilized for plantation purpose.	Process Waste water collected and treated inside the plant premises and reused for dust suppression and plantation. Please refer Annexure – III.



5.	The company shall develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	<p>We have one artificial recharging pit and one rain water harvesting pit inside the plant premises for utilization in the lean season as per the guideline of CGWA.</p> <p>Tank size :</p> <ul style="list-style-type: none"> <li>➤ Rain water harvesting pit: carrying capacity 2538M<sup>3</sup></li> <li>➤ Artificial injection <ul style="list-style-type: none"> <li>Length – 4.0 m</li> <li>Breadth – 3.0 m</li> <li>Height – 3.0 m</li> </ul> </li> </ul> <p>Ground water recharging volume – 18 m<sup>3</sup>  Injection Well : Dia – 150 mm  Depth – 45 m</p> <p>Photograph is attached in Annexure – IX</p>
6.	The overall noise levels in and around the plant area shall be kept well within the standards (85dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	<p>All the machineries are covered and regular, checking, lubrication, inspection and trial run done to reduce the noise generation also PPEs are provided to the workmen work at respective area.</p> <p>The overall noise level around the Plant is 72.6 dB(A) in Daytime &amp; 65.5 dB(A) in Night Time.</p>
7.	Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	<p>Employees as well as workers are being monitored regularly for any occupational health problem. Records are maintained by our medical department.</p> <p>Detail pathological test with ECG of all employees &amp; contractual workers is done once in every year.</p> <p>Photographs are attached in Annexure – X</p>
8.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.	<p>Socio-Economic Developments Undertaken through our CSR division on regular basis as below</p> <ul style="list-style-type: none"> <li>• Women Empowerment</li> <li>• Rural Education &amp; Skill Development</li> <li>• Environment Conservation through Plantation</li> <li>• Health</li> <li>• Sanitation</li> <li>• Drinking Water Provision</li> <li>• Communication</li> <li>• Building of roads and culverts in nearby villages</li> </ul> <p>Photographs are attached in Annexure – XI</p>

9.	As proposed, Rs. 5.20 Crores and Rs. 1.55 Crores shall be earmarked towards capital cost and recurring cost/annum for the environment pollution control measures shall be judiciously utilized to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. The funds so provided shall not be diverted for any other purpose.	(October'14 to March'15) GCPs Maintenance Cost - Rs. 1724453.43. GCP's Running Cost (30MW/Day) @ Rs. 5600/MW = Rs. 30240000.00. Mobile Water Sprinkler @ Rs. 30000/Month = Rs. 180000.00.
10.	The Regional Office of this Ministry at Bhubaneswar / CPCB / OPCB shall monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.	Complied
11.	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the OPCB and may also be seen at Website of the Ministry of Environment and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional office at Bhubaneswar.	Complied Copy of published news is attached in Annexure – XII.
12.	Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Existing 5Nos. Furnaces are in operation with production capacity 94800 TPA. The expansion activity now not in process.

**STACK GAS MONITORING REPORT**

(October'14 to March'15)

Month	PM LEVEL (mg/Nm <sup>3</sup> )				
	Furnace-I	Furnace-II	Furnace-III	Furnace-IV	Furnace-V
October'14	59.0	61.0	62.0	56.5	57.5
November'14	62.0	63.5	65.0	64.0	60.5
December'14	60.0	58.0	62.5	64.5	59.0
January'15	59.5	61.5	67.0	70.5	70.0
February'15	61.5	64.0	63.0	69.0	66.5
March'15	63.5	64.5	68.0	71.5	60.5
Average	60.9	62.1	64.6	66.0	62.3

**AMBIENT AIR MONITORING DATA**

(October'14 to March'15)

Month / Year	Ambient Air Monitoring result ( $\mu\text{g}/\text{m}^3$ )															
	Near Security Office				Near Old DG Set				Near Furnace-3 Metal Breaking Yard				Near MRP Metal Shorting Area			
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>
Oct.'14	53.8	23.0	4.5	10.8	58.0	27.8	4.7	11.0	56.4	26.2	4.7	10.9				
Nov.'14	55.3	22.3	4.4	10.7	51.5	25.0	4.5	10.6	57.5	24.8	4.7	10.6				
Dec'14	55.2	24.0	4.4	10.6	54.2	25.8	4.6	10.7	59.4	23.6	4.7	10.7				
Jan'15	54.3	23.0	4.5	10.5	54.5	24.5	4.6	10.7	54.8	24.0	4.5	10.5	56.0	24.0	4.3	10.2
Feb'15	55.5	25.5	4.5	10.7	55.0	25.3	4.5	10.5	54.0	25.5	4.4	10.5	58.0	24.3	4.4	10.6
Mar'15	55.3	25.5	4.4	10.5	56.0	24.5	4.6	10.6	55.3	23.5	4.3	10.6	55.0	24.3	4.6	10.7
Avg.	54.9	23.9	4.4	10.6	54.9	25.5	4.6	10.7	56.2	24.6	4.5	10.6	56.3	24.2	4.4	10.5

**Fugitive Emission control Measures taken:**

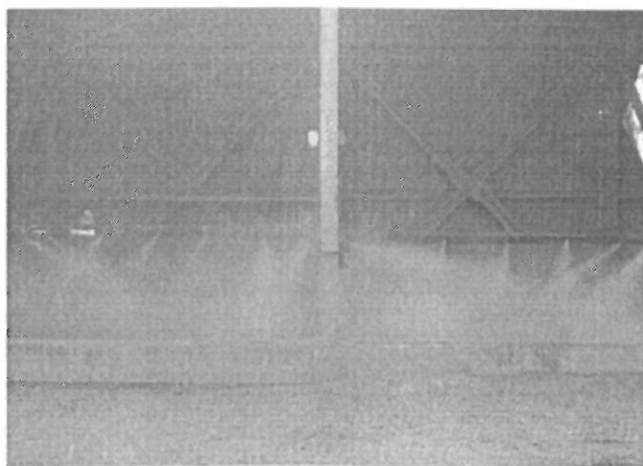
- Regular Water sprinkling on roads through mobile water tanker
- Dry Fog dust suppression system installation at underground bunkers as well as Conveyors of Furnace.



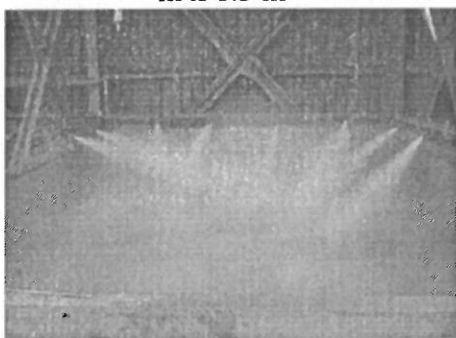
CONTROL OF FUGITIVE DUST EMISSION & STACK EMISSION



Water sprinkling on roads through mobile water tanker of size – 2.9 m x 1.5 m x 1.3 m



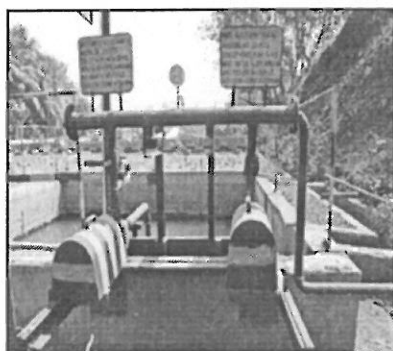
Dry Fog Dust suppression system installed at underground bunker & conveyors to control fugitive emission.



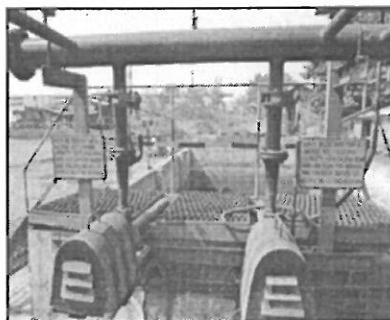
Installation of Dry Fog dust suppression system at screen house to control fugitive emission



GPCs attached to the furnaces



Water Recycling for Hot Metal Cooling



# KALYANI LABORATORIES PVT. LTD.

844-A, RANIGARH, BHUBANESWAR-751016, ODISHA

## TEST CERTIFICATE

Test Report No.: KLPL-TR/09/S1258

Issue Date: 20/09/2014

Name and address of the Customer: M/s Balasore Alloys Limited  
Balgopalpur-756020  
Dist-Balasore, Orissa, India

Customer's reference: Nil

Date Of sampling: 15/09/2014

Testing Dt.: 16/09/2014

Test completion Dt: 20/09/2014

Date of Sample Receipt: 16/09/2014

Sample Description : Slag

No. of Samples: 1 No.

Sample Condition: :

Sampling Method used, if any:

### RESULTS OF SLAG LEACHATE ANALYSIS

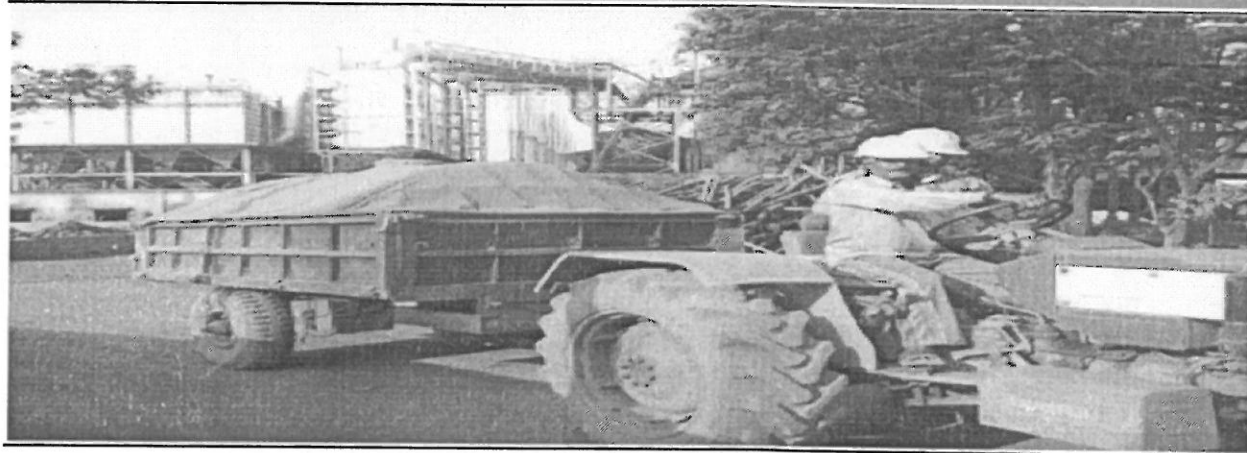
(As per TCLP criteria of hazardous waste characterization procedure)

Sl. No	1	2	3	4	5	6	7	8
Parameters	Cr(VI)	Total Cr	Cu	CO	Zn	Pb	Ni	Cd
Results (mg/l)	0.013	0.09	BDL	0.05	0.02	0.021	0.03	BDL
Regulatory levels (mg/l) as per CPCB	5.0	--	--	--	--	5.0	--	1.0

End of Test Report

*Signature*  
20/09/2014  
Authorized Signatory  
Kalyani Laboratories Private Limited

Note: This test report shall not be reproduced in full or in part without prior written consent from Kalyani Laboratories Pvt. Ltd.  
Page-1/1



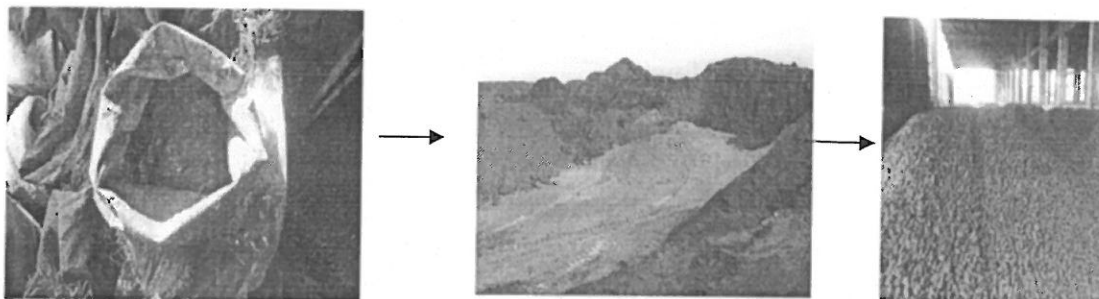
**SLAG TAILINGS GENERATION & DISPOSAL**  
(October'14 to March'15)

Opening Balance (MT) on 1 <sup>st</sup> Oct 2014	Generated Slag after Metal Recovery (MT)	Slag Disposal (Sold) (MT)	Closing Stock (MT)
2094	85121	81000	4121

➤ **Flue Dust (Hazardous):**

Flue dust is collected and transported to the briquette Plant where it gets reused in making briquettes by mixing with chrome ore fines with suitable binders and finally fed into the furnaces.

Thus 100% recycled in the process. In the period of last six months (April'14 to September'14), 656.2 MT flue dust was generated that has already been reused & recycled in the production process.



➤ **Used Oil:**

Used Oil mainly from Transformer and other machineries is collected in trays and then stored Drums/Barrel and ultimately sold to SPCB authorized vendor.

In the period of last Twelve months, 15.54 KL Used Oil was generated and disposed through SPC authorized vendor.

**FLUE DUST & USED OIL GENERATION, STORAGE & DISPOSAL**

(October'14 to March'15)

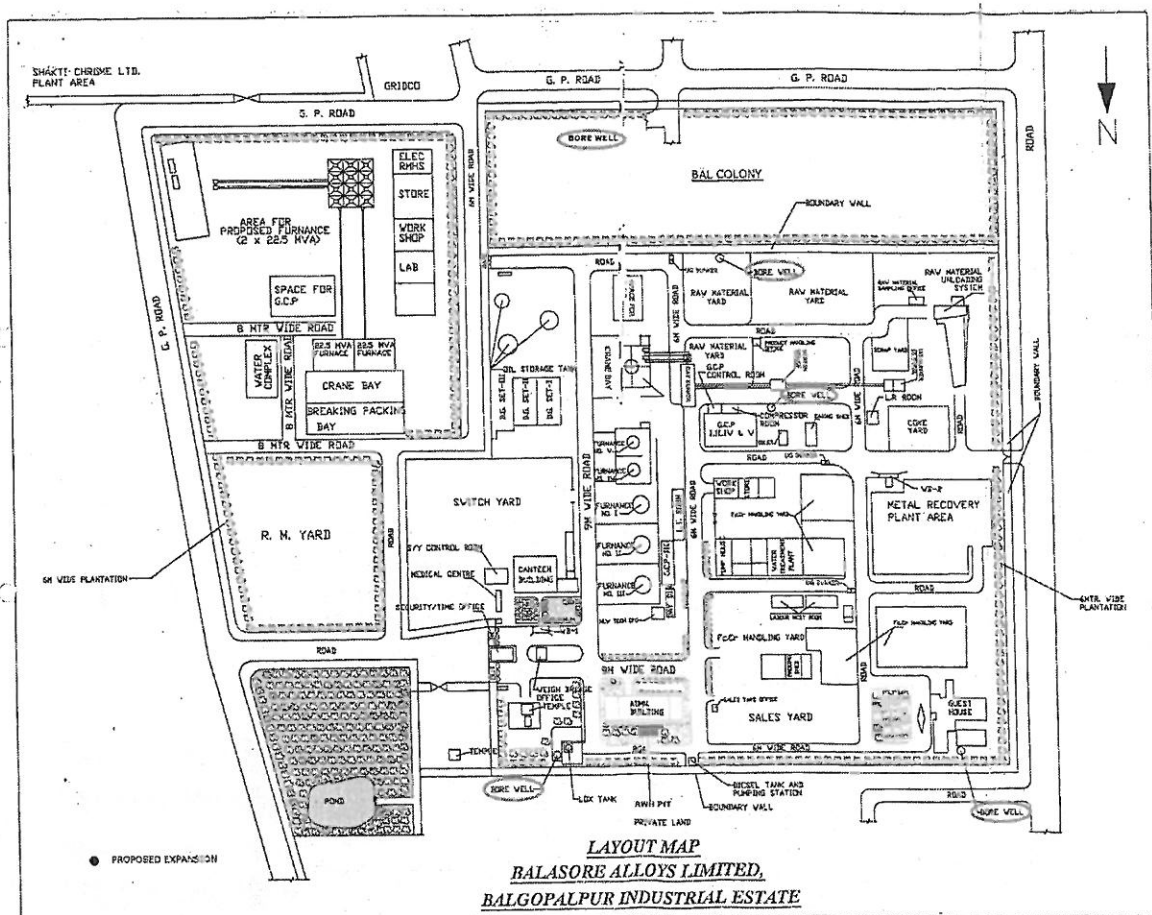
**FLUE DUST**

Month	Flue Dust Generation (In MT)
October'14	123.1
November'14	114.7
December'14	124.6
January'15	119.6
February'15	116.6
March'15	137.5
Total	736.1

**Disposal –** Collected flue dust is transported to our briquette plant and mixed with chrome ore fines to make briquettes & finally fed to the furnaces. Thus 100% recycled.

**USED OIL**

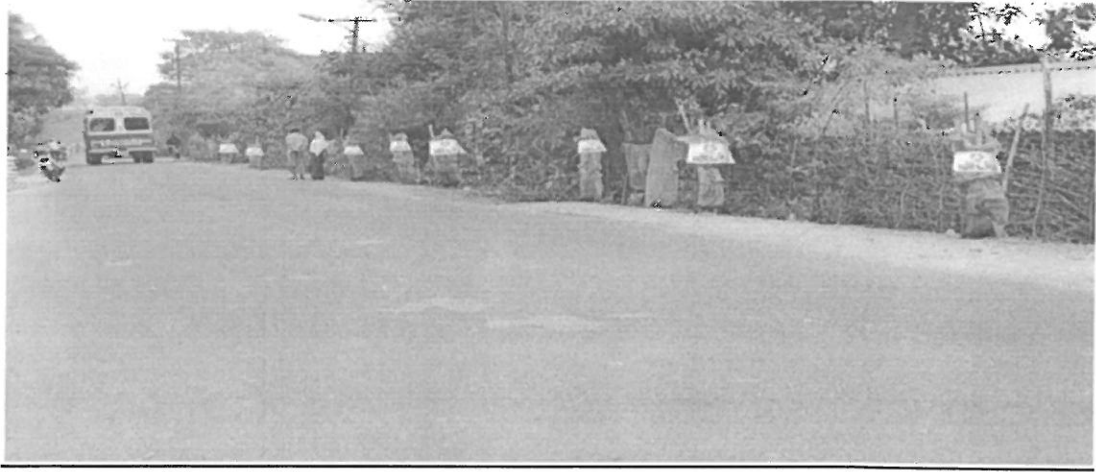
15.54 KL Used Oil was generated and disposed through SPCB authorized vendor.

**PLANTATION STATUS (October'14 to March'15)**

SL. NO.	TYPE OF PLANTATION	PLANTATION (IN NOS.)
		WITHIN THE INDUSTRY
1.	Avenue plantation at village MUKHURA	1500
2.	Avenue Plantation (Block)	8000
Total		9500

In and around the Plant area approx. 34.7% of total area is covered by Green Belt and now we are concentrated in Road Side & Block Plantation.





Annexure-VIII

CREP POINTS	STATUS
<b>Integrated Iron and Steel Plant</b>	
A.- Coke Oven ( by- product type)	Not applicable
B.- Sintering Plant	Not applicable
C.- Blast Furnace	Not applicable
D.- Steel Making Shop- Basic Oxygen Furnace	Not applicable
E.- Rolling Mills	Not applicable
F.- Arc Furnaces	
Particulate matter (mg/Nm <sup>3</sup> )= 150	All the five furnaces are equipped with pollution control device (gas cleaning plant) and emission level is less than 150 mg/M <sup>3</sup> .
G.- Induction Furnaces	Not applicable
H.- Cupola Foundry	Not applicable
1.- Calcination Plant/Lime Kiln/Dolomite Kiln	Not applicable
J.- Refractory Unit	Not applicable
Emission Standards	
Particulate matter- 150 (mg/Nm <sup>3</sup> )	
1. The height of the each process stack shall be a minimum of 30 metres or as per the formula $H = 14 (Q)^{0.3}$ (whichever is more), where "H" is the height of stack in metre; and "Q" is the maximum quantity of SO <sub>2</sub> in kg/hr expected to be emitted through the stack at rated capacity of the plant(s) and calculated as per the norms of gaseous emission.	$Q = 1.7 \text{ Kg/Hr.}$ and $H = 14(Q)^{0.3} = 16.41 \text{ Mtr.}$ And height of our five stacks are 40 mtr.
2. The plants having separate stack for gaseous emission for the scrubbing unit, the height of this stack shall be equal to main stack of the plant or 30 metres, whichever is higher.	Not applicable

3. It is essential that stack constructed over the cupola beyond the charging door and emissions shall be directed through the stack which should be at least six times the diameter of cupola.	Not applicable
4. In respect of Arc Furnaces and Induction Furnaces provision shall be made for collecting the fumes before discharging the emissions through the stack.	Furnace flue gas passed through bag filter of gas cleaning plant before emission through stack. Fumes are collected and clean gas is emitted through stack (Particulate matter below the limit prescribed by state pollution control board)
5. Foundries shall install scrubber, followed by a stack of height atleast six times the diameter of the Cupola beyond the charging door.	Not applicable
6. Recovery type converters shall be installed in new plants or expansion projects.	Not applicable
Storm water	
(i) Storm water shall not be allowed to mix with effluent, scrubber water and/or floor washings.	Separate storm water drain is constructed around the plant premises and plant effluent is not connected with the storm water drain.
(ii) Storm water shall be channelized through separate drains as per natural gradient, passing through High Density Polyethylene (HDPE) lined pits, each having holding capacity of 10 minutes (hourly average) of rainfall.	Storm water drain is constructed separately as per natural gradient and pits lined with HDPE are provided for discharge of water.

**RAIN WATER HARVESTING STRUCTURE WITHIN THE PLANT PREMISES**

Rain water during rainy season is collected from the roof of our administration building and recharged to underground water level through rain water harvesting structure. Also rain water harvesting pond constructed for use of water in lean season.



HEALTH CHECK UP OF EMPLOYEES & WORKERS AT OUR PLANT



Eye check up of employees & workers in the year 2014.



Annual Health check up of employees in the year 2014.

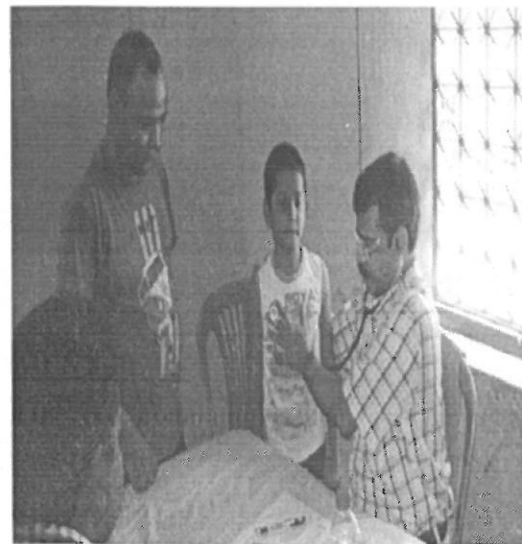
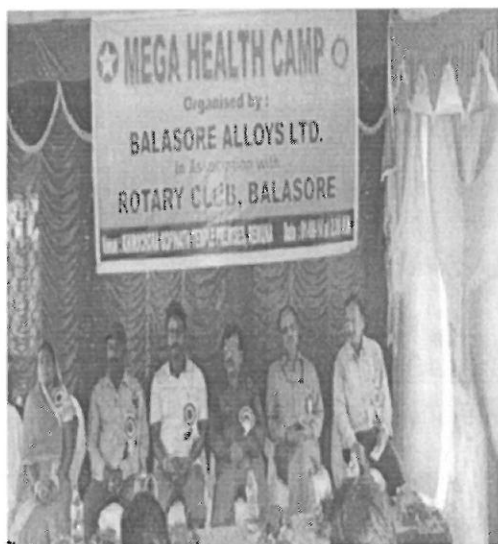


ECG of the employees & workers in the year 2014

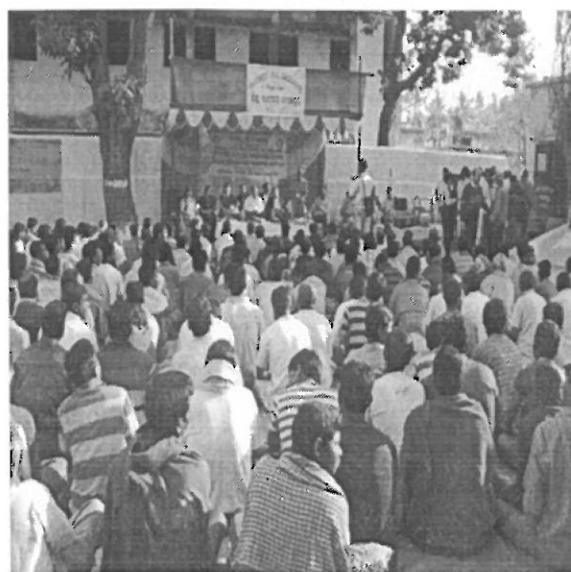
**SOCIO ECONOMIC DEVELOPMENT PLAN**

Balasore Alloys Ltd. has been at the forefront in extending benefits of the local communities in and around its projects.

**Mega Health Camp**

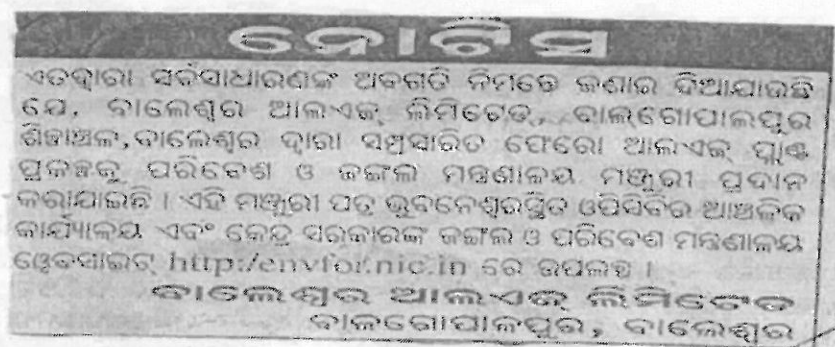


**Training Programme for Jail inmates**





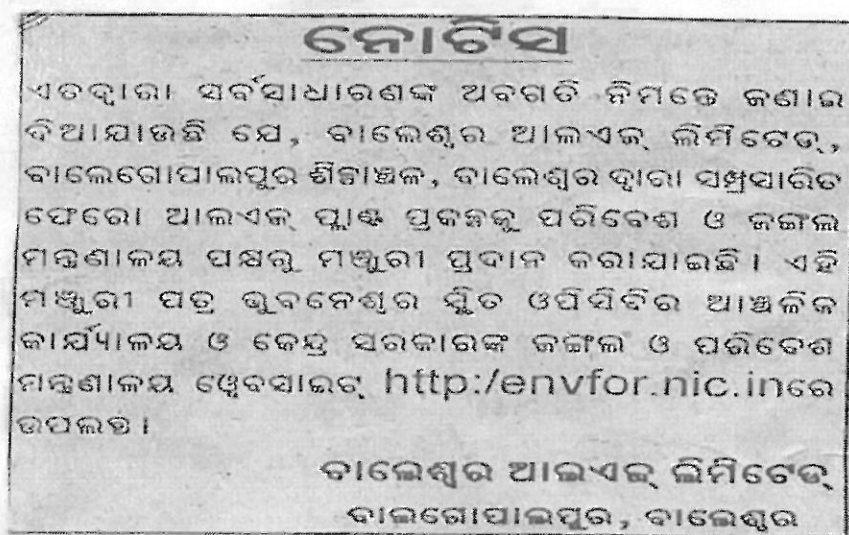
COPY OF NEWS PAPER PUBLICATION REGARDING EC FOR THE EXPANSION UNIT (FURNACE-I, IV & V)



" THE SAMAJA "

Date: 16.09.2008

Tuesday



" ASIKALI "

Date: 25.09.2008

Thursday