Aloke Steels Industries Private Limited

REGD. OFFICE : OPP. ASHOK CINEMA,
RANCHI ROAD, MARAR -829 117
DIST. - RAMGARH (JHARKHAND)
CIN : U27103JH2004PTC010725
Email : asipl.ramgarh@gmail. com

WORKS :
Vill : Budhakhap
Post : Karma -829137
Dist.-Ramgarh,(Jharkhand)

Ref. No..... ASIPL/041/ 2023-24

O/C

Date..... 22/06/2023

To,
The Additional Principal Chief Conservator of Forests (C),
Government of India,
Ministry of Environment, Forest & Climate Change,
Integrated Regional Office (Eastern Central Zone),
2nd Floor, Headquarter-Jharkhand State Housing Board,
Harmu Chowk, Ranchi, Jharkhand- 834002

Sub:-Regarding compliance for the period October, 2022 to March, 2023 to the conditions of Environment Clearance for Expansion of existing 1,20,000 TPA Sponge Iron Plant by installation of new facilities for production of Steel Melting Shop for 1,08,000 TPA of Billets, Rolling mill (90,000 TPA), Iron Ore crushing & Beneficiation plant (2,70,000 TPA), Slag Crushing Plant (16,200 TPA), Captive Power Plant 18 MW (4X2MWWHRB :1X10 MW AFBC) and Briquetting unit for Iron ore fines(40,100 TPA).

Ref: - Environment Clearance Letter No. F. NO. J-11011/205/2016-IA.II (I) Dated-23rd July, 2018.

Dear Sir,
In reference to the above subject matter & reference letters, the point wise Half Yearly compliance status for the period of October, 2022 to March, 2023 is being submitted. The soft copy is also sent through e-mail for your kind perusal please.

Hope you will find this in order and oblige.

Thanking you.
Yours faithfully
For Aloke Steels Industries Pvt Ltd.

Authorized Signatory

Enclosures: Compliance status Report,

Cc to:-

1) The Zonal office Incharge, Central Pollution Control Board, Southernd Conclave, Block 502, 5th & 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700 107 (W. B.).
2) The Member Secretary, Jharkh... T.A. Division Building (Ground Floo... 834004, Jharkhand.
3) Regional Officer, Regional Office, S... Jharkhand.

- Apply For Consent
- Change Password
- Industry Profile
- Compliance Management
- Laboratory Monitoring Report
- Online Payment Verification
- Fee Calculator
- e-Wallet Management
- Delete InProgress Applications
- Delete InProgress LAB Applications
- View Notices 0

Send us your feedback and suggestions

click here for any kind complaints or query

Welcome ALOKE STEELS INDUSTRIES PRIVATE LIMITED

Date : 26-6-2023

Your Compliance details has been Submitted. Your Acknowledgement Number is 16638987. Thank You!.

General

General Details

Industry Name:	**ALOKE STEELS INDUSTRIES PRIVATE LIMITED**
Industry Address:	**VILL: BUDHAKHAP, PO: DIGWAR, RAMGARH**
Industry Pin:	**829137**
Industry S.T.D. Code(Phone):	**06553**
Industry Phone No:	**226846**
Industry E-Mail Address:	**asipl.ramgarh@gmail.com**
Occupier Name:	**KAMENDRA MISHRA**
Occupier Designation:	**DIRECTOR**
Occupier Address:	**NEAR PNB, MAIN ROAD**
Occupier Pin:	**829122**
Occupier Mobile No:	
Occupier Email Address:	**asipl.ramgarh@gmail.com**
Industry Category:	**RED**
Industry Type:	**Iron & Steel involving processing from ore/integrated steel plan**
Last Consent Granted App. No:	13199098
Last Consent Granted Uploaded Certificate:	View Uploaded Certificate
Last Consent Granted App. Type:	**CTO**
Authorization to file Compliance:	View File

Proposal No.	State	Proposal Name	Category	User Agency Name	Proposal Recieved on	File No	Date of grant

Environment Clearance letter issued vide F. NO. J-11011/205/2016-IA.II (I) Dated- 23rd July, 2018 from MOEF&CC, New Delhi.

General Condition: View

Specific Condition: View

Environment Clearance Compliance Status
Period from October-2022 to March -2023

Name of Project:	Aloke Steels Industries Pvt. Ltd.
Capacity:	Expansion of existing 1,20,000 TPA Sponge Iron Plant by installation of new facilities for production of Steel Melting Shop for 1,08,000 TPA of Billets, Rolling mill (90,000 TPA), Iron Ore crushing & Beneficiation plant (2,70,000 TPA), Slag Crushing Plant (16,200 TPA), Captive Power Plant 18 MW (4X2 MW WHRB: 1X10 MW AFBC) and Briquetting unit for Iron ore fines (40,100 TPA).
Location:	Village - Budhakhap, P.O – Karma, Distt. – Ramgarh, Jharkhand.
EC letter No.	F. NO. J-11011/205/2016-IA.II (I) Dated- 23rd July,2018.

A. SPECIFIC CONDITION:

Sl.No	CONDITION	COMPLIANCE
i)	The project proponent shall revise the layout by removing the tailing pond, providing additional entry gate, sufficient parking area and green belt in 8.24 Ha, space for storage of filter cakes, etc.	Complied the layout is revised as directed.
ii)	The project proponent shall install the filter press/belt filter and make a filter cake of the tailing and sent to dispose to the users of the same.	Noted, will be complied with project installation.
iii)	The project proponent shall install the briquetting plant for briquetting / amalgamation of dust collected from air pollution control device including mill scales.	Noted, will be complied with project installation.
iv)	No ground water shall be extracted during construction and operation of the project.	Agree with. Surface Water drawl agreement executed with DVC for drawl of water from Damodar River.

GENERAL CONDITIONS:

S.No	CONDITION	COMPLIANCE
1	An amount of Rs 160 Lakhs proposed towards Corporate Environment Responsibility shall be utilized as capital expenditure in project mode. The project shall be completed in concurrence with the implementation of the expansion and estimated on the basis of Scheduled Rates.	Being complied, Unit has purchased Ambulance (24X7) for the villagers. Photograph of Ambulance is enclosed as **Annexure – 1.**

2	Green belt shall be developed in 8.24 Ha of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant.	Being complied, for 8.24 ha will be completed in due course.
3	The Capital cost Rs. 945.0 Lakhs and annual recurring cost Rs. 105.50 Lakhs towards the environment protection measures shall be earmarked separately. The funds so provided shall not be diverted for any other purpose.	Noted, will be complied in due course.
4	The project proponent shall (Air Quality Monitoring):	
a)	Install 24x7 continuous emission monitoring system at process stacks to monitor stacks emission with respect to standards prescribed in Environment (Protection) Rules 1986 (G.S.R 414 (E) dated 30th May 2008 as amended from time to time S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time) and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (protection) Act, 1986 or NABL accredited laboratories.	Being complied for existing coal based Sponge Iron plant online monitoring systems are installed for monitoring of PM & SO2 emission of stack and it is connected online with Central Pollution Control Board and Jharkhand State Pollution Control Board URL server. Compliance regarding expansion project we have noted and will comply in due course.
b)	Monitor fugitive emissions in the plant premises at least once in every quarter through laboratories recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	Being complied for existing coal based Sponge Iron plant. Noted for compliance in expansion project. Fugitive monitoring test report is enclosed as **Annexure – 2.**
c)	Install system carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM_{10} and $PM_{2.5}$ in reference to PM emission, and SO_2 and NO_xin reference to SO_2 and NO_xemission) within and outside the plant area (at least at four location one within and three outside the plant area at an angle of 120^0 each), covering upwind and downwind direction; and	As per direction of Jharkhand State Pollution Control Board vide letter no B-19 issued on 28/02/2019, we have installed Continuous Ambient Air Quality Monitoring Station for PM 10 parameter and it is connected online with Jharkhand State Pollution Control Board URL server. JSPCB submitted copy regarding

		installation with commissioning of PM10 analyzer is enclosed as **Annexure -3.** Further we have order to install PM2.5, SO2 and NOx parameter to M/s Vasthi Instrument Private Limited. Order copy is enclosed as **Annexure – 4.**
d)	Submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality/fugitive emission to Regional office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-Monthly monitoring report.	Monthly summary report is enclosed as **Annexure – 5.** Noted for compliance in expansion project.
5	The project proponent shall (Water Quality Monitoring):	
a)	Install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 (G.S.R 414 (E) dated 30th May 2008; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plant) as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	No industrial effluent is generated, domestic discharge are made in close circuit. In compliance to Zero Liquid Discharge (ZLD), the web camera and flow meter are installed and it is connected online with Central Pollution Control Board and Jharkhand State Pollution Control Board URL server. Noted for compliance in expansion project.
b)	Monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognized under Environment (protection) Act, 1986 and NABL accredited laboratories; and	Being complied on regular basis. Ground Water quality monitoring report & Piezometer reading are enclosed as **Annexure – 6.**
c)	Submit monthly summery report of continuous effluent monitoring and result of manual effluent testing and manual monitoring of ground water quality to Regional Office of SPCB along with six–monthly monitoring report.	No industrial effluent is generated, domestic discharge are made in close circuit. In compliance to Zero Liquid Discharge (ZLD), the web camera and flow meter are installed and

		it is connected online with Central Pollution Control Board and Jharkhand State Pollution Control Board URL server. Noted for compliance in expansion project.
6	The project proponent shall (Air Pollution Control):	
a)	Provide appropriate Air Pollution Control (APC) system for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.	Being complied for existing plant, noted for compliance in expansion project.
b)	Provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags;	Being complied for existing plant, noted for compliance in expansion project.
c)	Provide pollution control system in the steel plant as per the CREP Guidelines of CPCB;	Noted, will be complied in due course.
d)	Provide sufficient number of mobile or stationary vacuum cleaners to clean plant roads, shop floors, roofs regularly;	Adequate arrangement of cleaning and sprinkling of water has been made. Noted, will be complied in due course in expansion project.
e)	Recycle and reuse iron ore fines, coal and coke fines, lime fines and such other fines collected in the pollution control devices and vacuum cleaning device in the process after briquetting/agglomeration;	Being complied for existing plant, noted for compliance in expansion project.
f)	Ensure covered transportation and conveying of ore, coal and other raw material to prevent spilling and dust generation;	Being complied for existing plant, noted for compliance in expansion project.
g)	Provide wind shelter fence and chemical spraying on the raw material stocks pipe.	For existing plant, units has provided coved storage shed have been provided for all raw materials like coal, Iron ore etc. Noted, will be complied in due course in expansion project.
7	The project proponent shall (Water pollution Control):	
a)	Adhere to 'Zero liquid discharge,;	Being complied for existing coal

		based sponge iron plant, noted for compliance in expansion project.
b)	Provide Sewage Treatment Plant for domestic wastewater ; and	Being complied for existing plant, noted for compliance in expansion project.
c)	Provide garland drains and collected pits for each stock pipe to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run-off.	Being complied for existing plant, noted for compliance in expansion project.
8	The project proponent shall (Water Conservation)	
a)	Practice rainwater harvesting to maximum possible extent; and	Being complied. Photographs of Rain harvesting pit & report enclosed as **Annexure – 7**.
b)	Make efforts to minimize water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water.	Being complied for existing plant, noted for compliance in expansion project.
9)	The project proponent shall (Energy Conservation):	
a)	Provide waste heat recovery system on the DRI kilns;	Being complied, installation of WHRB is the part of the project.
b)	Use dolochar generated for power generation;	Being complied, installation of AFBC is the part of the project.
c)	Provide solar power generation on roof tops of building, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly ; and	Noted, will be complied in due course.
d)	Provide the project proponent for LED lights in their offices and residential areas;	Being complied for existing plant, noted for compliance in expansion project.
10	Used refractories shall be recycled as far as possible.	Noted, will be complied in due course.
11	The project proponent shall prepare GHG emission inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.	GHG emission inventory report is enclosed as **Annexure – 8.**
12	Emergency preparedness plan based on the	Being complied for existing plant,

	Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	noted for compliance in expansion project.
13	The project proponent shall carry out heat stress analysis for the workmen who work in the high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of factory Act.	In sponge iron unit PPE is provided. The high temperature work zone of expansion unit will be complied in due course.
14	The project proponent shall adhere to the corporate environmental policy and system of the reporting of any infringement/non-compliance of EC condition at least once in a year to the Board of Directors and the copy of the board resolution shall be submitted to the MoEF&CC as a part of six-monthly report.	Noted, will be complied in due course.
15	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the steel plants shall be implemented.	Being complied on regular basis.
16	A dedicated environmental cell with qualified personnel shall be established. The head of the environment cell shall report directly to the head of the organization.	Organization of Environment Management Cell is enclosed as **Annexure – 9.**
17	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, Mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Noted for compliance in due course with start of the construction activities.
18	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	Noted, will be complied in due course.
19	No further expansion or modification in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change (MoEF&CC).	Noted, will be complied in due course.
20	The waste oil, grease and other hazardous waste shall be disposed of as per the	Being complied for existing plant, noted for compliance in

	Hazardous & Other waste (Management &Tranboundary Movement) Rules, 2016.	expansion project.
21	The ambient noise levels should confirm to the standards prescribed under EPA Rules, 1989 viz. 75 dB during day time and 70 dB during night time.	Being complied for existing coal based Sponge Iron plant. Test monitoring report is enclosed as **Annexure – 10**. Noted for compliance in expansion project.
22	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Periodical health check-up are being carried and record are maintained.
23	The project proponent shall also comply with all the environment protection measures and safeguards recommended in the EIA/EMP report.	Being complied for existing plant, noted for compliance in expansion project.
24	100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding shall be submitted to the Ministry's Regional Office.	Noted, will be complied in due course.
25	Kitchen waste shall be composted or converted to biogas for further use.	Being complied for existing plant, noted for compliance in expansion project.
26	The project proponent shall (Post-EC monitoring):	
a)	Send a copy of environment clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government;	Complied.
b)	Put on the clearance letter on the web site of the company for access to the public.	Complied. The copy of environment clearance letter is available on the web site of www.asipl.in.
c)	Inform the public through advertisement within seven days from the date of issue of the clearance letter, at least two local newspaper that are widely circulated in the region of which one shall be in the vernacular language that the project has been accorded environment clearance by the Ministry and copies of the clearance	Complied. The notice has been published (English language) in 2 newspapers "DainikJagran" dt-02/08/2018 and "PrabhatKhabar" dt-

	letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forest and Climate Change (MoEF&CC) at http://envfor.nic.in.	01/08/2018. As per direction it is published in the vernacular language in 2 newspapers "DanikJagaran" dt 15/07/2020 & "PrabhatKhabar" dt 12/07/2020. The copy of environment clearance letter is available on the web site of http://envfor.nic.in.
d)	Upload the status of compliance of the stipulated environment clearance conditions including results of monitored data on their website and update the same periodically;	Noted. Status of compliance available on the company web site www.asipl.in.
e)	Monitor the criteria pollutants level namely; PM_{10}, SO_2, NO_x (ambient levels as well as stack emission) or critical sectoral parameters, indicated for the project and display the same at a convenient location for disclosure to the public and put on the website of the company;	Being complied for existing plant, noted for compliance in expansion project. Display board has been displayed on main gate.
f)	Submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB;	Noted, will be complied in due course. Compliance report submitting on regular basis to the Regional Office of MoEF&CC, the Zonal office of CPCB and the SPCB. Last six monthly submitted compliance reports with email copy enclosed as **Annexure -11.**
g)	Submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (protection) Rules, 1986 as amended subsequently and put on the website of the company;	Being complied for existing plant, noted for compliance in expansion project. Environment Statement Report has been uploaded on the company web site www.asipl.in. Environment Statement Report enclosed as **Annexure -12.**
h)	Inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the	Noted, will be complied in due course.

	concerned authorities and the date of commending the land development work.	
24.0	The ministry may revoke or suspend the clearance, if implementation of any of the above condition is not satisfactory.	Noted the content to adhere the compliance.
25.0	The ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Noted the content, will be complied in due course.
26.0	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and that during their presentation to the EAC. The commitment made by the project proponent to the issue raised during Public Hearing shall be implemented by the proponent.	Noted, will be complied in due course.
27.0	The above condition shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of pollution) Act, 1974 the air (Prevention & Control of Pollution) Act, 1981, the environment (protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules.	Noted the content, will be complied in due course.
28.0	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Noted the content to adhere the compliance.

Annexure - 1


AMBULANCE
PATIENT TRANSPORT
सौजन्य से,
आलोक स्टील्स इन्डस्ट्रीज प्राइवेट लिमिटेड
बुढ़ारवाप, रामगढ, झारखण्ड।

GST NO. : 20AYCPM5560D1ZX

TAX INVOICE

Mob.: 9334435164
7979704434

NATIONAL CAR WORKSHOP
SERVICE CENTER

Engine Work Diesel/ Petrol, Electrical Works, Denting/Painting Works, Camera Works, Center Locking Works, A/C Works, Car-Scaning, Check Engine Light Problem, Codding Problem, Key Problem

To M/s ALOKE STEELS INDUSTRIES PRIVATE LIMITED (C.ANIL KUMAR PATHAK

Address VILL-BUDHAKHAP, KARMA Post-KARMA RAMGARH CANTT. RAMGARH 829122

GST IN .....Vehicel No. .....

Sl. No	Description	HSN CODE	Amount Rs.	P.
①	Cylindes stand, oxygen cylindes setup Making		2200/-	
②	Sliding staches Complite set		4200/-	
			Total	6400/-
			SGST@9%	576/-
			CGST@9%	576/-

Sl. No 102

Date 15-01-2023

Rupees In Words

We prefer and accept through Electronic mode i.e. RTGS/NEFT/IMPS/Internet Banking
Our Bank Details are : Beneficiary : Premsons Motor Udyog Private Limited
Bank Name : **SBI Bariatu Road Ranchi** A/c No. : **40299311766** IFSC **SBIN0017473**

Rel 2.5.26

Premsons Motor

PREMSONS MOTOR UDYOG PRIVATE LIMITED

Next to Raj Apartments, Bariatu Road, Ranchi - 834009
Ph. : 9386256421, 9386256836, 9308212121, E-mail : premsonsmotor@gmail.com
GSTIN : 20AADCS8337C1ZR CIN : U51109WB1996PTC078593

NO. : 20AYCPM5560D1ZX TAX INVOICE Mob.: 9334435164 7979704434

NCW

NATIONAL CAR WORKSHOP
SERVICE CENTER

Engine Work Diesel/ Petrol, Electrical Works, Denting/Painting Works, Camera Works, Center Locking Works, A/C Works, Car-Scaning, Check Engine Light Problem, Codding Problem, Key Problem

To M/S ALOKE STEELS INDUSTRIES PRIVATE LIMITED IC ANIL KUMAR PATHAK

Address VILL- BUDHAKHAP KARMA POST- KARMA RAMGARH CANTT RAMGARH 829122

GST IN .... Vehicel No. ....

Sl. No	Description	HSN CODE	Amount Rs.	P.
1	Oxygen cylinder including Meter and opener		11500/-	

Sl. No 101	Date 15-01-2023	Total	11500/-	
		SGST@		
Rupees In Words Eleven Thousand five Hundred only		CGST@		
		G.Total		

Bariyatu Basti, Ranchi

NATIONAL CAR WORKSHOP SERVICE CENTER Bariatu Basti, Ranchi

For NATIONAL CAR WORKSHOP

Signature

NO. : 20AYCPM5560D1ZX

TAX INVOICE

Mob.: 9334435164
7979704434

NATIONAL CAR WORKSHOP
SERVICE CENTER

Engine Work Diesel/ Petrol, Electrical Works, Denting/Painting Works, Camera Works, Center Locking Works, A/C Works, Car-Scaning, Check Engine Light Problem, Codding Problem, Key Problem

To M/s Aloke Steels industries Privet Limited i.e. Anil kumar Pathak

Address Vill - Budhakhap, Karma Post - karma Ramgharh Cantt

GST IN .... Vehicel No. ....

Sl. No	Description	HSN CODE	Amount Rs.	P.
1	LH side Pataient seat stacher slider coloumn with full frame and cover sheet/seat		5930/-	
		Total	5930/-	
		SGST@	533/-	
		CGST@	533/-	
		G.Total	7000	

Sl. No 195

Date 21-01-2023

Rupees In Words seven thousand only

Bariyatu Basti, Ranchi

NATIONAL CAR WORKSHOP SERVICE CENTER Bariatu Basti, Ranchi

For NATIONAL CAR WORKSHOP

Signature

Bariyatu Basti, Ranchi

NATIONAL CAR WORKSHOP SERVICE CENTER Bariatu Basti, Ranchi

For NATIONAL CAR WORKSHOP

Signature

MARUTI SUZUKI ARENA

ORIGINAL FOR RECIPIENT/DUPLICATE FOR TRANSPORTER/TRIPLICATE FOR SUPPLIER
TAX / VEHICLE & CHARGES INVOICE

Sold To : M/S. ALOKE STEELS INDUSTRIES PRIVATE LIMITED IC ANIL KUMAR PATHAK
Address : VILL-BUDHAKHAP,KARMA POST-KARMA RAMGARH CANTT,RAMGARH RAMGARH
Pin:829122,(M):9624618402 JHARKHAND (20)
Customer ID : 2249288975 PAN No : AAECA7250R
Customer Aadhar No. :
Place of Supply : JHARKHAND(20)
Vehicle ID : MA3JDT08WNMB30102
Customer Mobile No. : 9624618402

Invoice No. : 1/VSL/22001845
Invoice Date : 05/01/2023 06:47 PM
Order No. : SOB22003025
Order Date : 05/01/2023
Key No. : 6139
Booking Dealer :
Delivery Dealer : 5106
Customer GST No. : 20AAECA7250R1ZJ
Dealer GST No. : 20AADCS8337C1ZR
Dealer PAN No. : AADCS8337C

IRN : 4efc319bea5e93a1e3e9e8bf3a63df355d9524e1461fcf3fc1ac31c1ffc38431

		Dr Amount	Cr Amount
Price		4,96,083.77	
1 PRICE OF ONE MARUTI EECO AMBULANCE SHELL 1.2L 5MT-VRMPEH1			
CHASSIS NO.	ENGINE NO. / COLOR / HSN / EMISSION NORM		
MA3JDT08WNMB30102	K12NN 4016404 / Superior White-26U / 87032291 / Bharat Stage 6		
2 Exchange / Loyalty Bonus Discount		0.00	0.00
3 CGST @ 14%		69,451.72	
4 SGST @ 14%		69,451.72	
5 Cess @ 1 %		4,960.83	
Sub Total Amount (Assessable Value + Tax) :		6,39,948.04	
			0.04
Total Round Off Amount :		6,39,948.00	

Total Invoice Amount :
Invoice Amount in words : Rupees Six Lakh Thirty Nine Thousand Nine Hundred And Forty Eight Only

Loyalty Exchange Benefit :
Loyalty Points Redemption :

Terms & Conditions

For PREMSONS MOTOR UDYOG PVT. LTD.

Customer Name & Signatory

(Authorized Signatory)

(M/S. ALOKE STEELS INDUSTRIES PRIVATE LIMITED IC ANIL KUMAR PATHAK)

Created By : VIKASH KUMAR

Created Date : 05-JAN-2023 18:47:54

We prefer and accept through Electronic mode i.e. RTGS/NEFT/IMPS/Internet Banking
Our Bank Details are : Beneficiary : Premsons Motor Udyog Private Limited
Bank Name : **SBI Bariatu Road Ranchi** A/c No. : **40299311766** IFSC **SBIN0001747**

Rel 2.5.26

MARUTI SUZUKI ARENA

DEBIT NOTE

Debit Note No : VOU22003712

Date : 14-JAN-23

M/S ALOKE STEELS INDUSTRIES PRIVATE LIMITED IC ANIL
KUMAR PATHAK
'VILL-BUDHAKHAP,KARMA, POST-KARMA, RAMGARH
CANTT,RAMGARH
RAMGARH
Pin:829122

Model	:	EECO
Chassis No	:	B30102
Vehicle ID	:	MA3JDT08WNMB30102
Engine No	:	4016404
Invoice No	:	VSL/22001845
Invoice Date	:	05-JAN-23

Sr.No	Particulars/Remarks	Amount
1	INSURANCE AMOUNT	19782
2	TEMPORARY REGISTRATION	3072
	Total	22854

Financer :
Sales Executive : VIVEK SINGH

Prepared by

Checked by

Authorised Signature

Rel 1.1.2

We prefer and accept through Electronic mode i.e. RTGS/NEFT/IMPS/Internet Banking
Our Bank Details are : Beneficiary : Premsons Motor Udyog Private Limited
Bank Name : **SBI Bariatu Road Ranchi** A/c No. : **40299311766** IFSC **SBIN0017473**

झारखंड का सर्वाधिक प्रसारित दैनिक

अखबार नहीं आंदोलन

प्रभात खबर

क्षेत्र के विकास एवं ग्रामीणों की खुशहाली प्राथमिकता

कुजू. बुढ़ाखाप स्थित आलोक स्टील इंडस्ट्रीज प्रा लि फैक्ट्री प्रबंधन द्वारा फैक्ट्री के आस-पास रहने वाले ग्रामीणों की सुविधा को लेकर एंबुलेंस सुविधा उपलब्ध कराया गया. सोमवार को झामुमो जिलाध्यक्ष विनोद किस्कु ने एंबुलेंस सेवा का शुभारंभ किया. इस दौरान मौजूद ग्रामीणों ने कहा कि फैक्ट्री प्रबंधन द्वारा ग्रामीणों के हितों को ध्यान में रखकर एंबुलेंस सेवा दिया है. जो हम सभी ग्रामीणों के लिए खुशहाली का पल है. एंबुलेंस मिलने से आस-पास के गांवों के हजारों ग्रामीण लाभान्वित होंगे. साथ ही तत्काल चिकित्सा सुविधा उपलब्ध कराने में काफी सुविधा होगी. वहीं प्रबंधन ने कहा कि फैक्ट्री हमेशा जनहित के मुद्दों पर विशेष ध्यान रखती है. जिसके तहत आज ग्रामीणों की जरूरत को देखते हुए निःशुल्क एंबुलेंस सेवा से.फैक्ट्री के आस-पास के गांवों के ग्रामीणों में खुशी है, और उन्होंने प्रबंधन को धन्यवाद दिया. इधर विनोद किस्कू ने फैक्ट्री द्वारा ग्रामीणों को दी गयी एंबुलेंस सेवा की सराहना की. साथ ही कहा कि आने वाले समय में सीएसआर के तहत आस-पास के गांवों का भी विकास किया जायेगा.

हिन्दुस्तान
भरोसा नए हिन्दुस्तान का

शहर 30

बूढ़ाखाप में सोमवार स्टील प्लांट प्रदत एंबुलेंस सेवा का शुभारंभ करते अतिथि।

बूढ़ाखाप में शुरू की गई एंबुलेंस सेवा

कुजू। क्षेत्र के बूढ़ाखाप में स्थित आलोक स्टील्स इंडस्ट्रील प्राईवेट लिमिटेड प्रबंधन ने ग्रामीणों को सुविधा उपलब्ध कराने के तहत सोमवार से नि:शुल्क एंबुलेंस सेवा शुरू की है। एंबुलेंस सेवा की शुरुआत झामुमो रामगढ़ जिला अध्यक्ष विनोद किस्कू ने की। उन्होंने नारियल फोड़कर विधिवत पूजन कर सेवा शुरू की। मौके पर भुनेश्वर महतो भुन्नू व विनोद महतो मौजूद थे। मौके पर प्लांट प्रबंधन के सोमन पांडेय, प्रकाश झा, सुखेंद्र दास आदि मौजूद थे।

YUGANTAR BHARATI

ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Accredited by: - Jharkhand State Pollution Control Board (JSPCB)
Certified by : - An ISO 9001:2015 & ISO 45001:2018

JHARKHAND State Pollution Control Board

Test Certificate

Discipline	Chemical	**Group**	Atmospheric Pollution	**Sample Description**	Fugitive Dust Emission
Report Release Date		25th January, 2023		**Report ID**	YBAEEL-230125-123547-F01
W. Order/ JSPCB App. No.		ASIPL/111/2022-23		**Work Order Date**	06/01/2023
Type of Industry (If any)		Sponge Iron Unit		**Job code/ Ref. no.**	YBAEEL/WA/L/A/Jan-23/40
Report Issue to		M/s Aloke Steel Industries Private Limited Vill.- Budhakhap, Post - Karma, 829137, Dist.- Ramgarh			
Sampling Period		22/01/2023		**Mode of sample collection**	By YBAEEL Team
Sampling Protocol		IS:5182			
Sampling Locations		A. Material Handling Area		23°39'43"N, 85°33'08"E	
		B. Product Handling Area		23°39'49"N, 85°33'05"E	
Meteorological Cond. of Field		W.C.– Clear	RH % - 54	Temp. - 25°C	W.D.– NW-SE
Sample receipt Date		23/01/2023	**Analysis Started on** 23/01/2023	**Analysis completed on**	25/01/2023

******Test Results ******

Parameters	Test Methods	Units	Sampling Location		Limits
			Site A	Site B	
Particulate matter (RSPM)	Gravimetric Method	µg/m³	461.9	551.5	2000

******End of Report******

Limit is specified as	G.S.R. 414 (E), 30th May, 2008
Abbreviation	MDL : Minimum detection limit, BDL : Below detection limit,
Env. Condition of Lab	Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).
Specific contractual notes	All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility.
	This report, in full or in part, shall not be used for advertising or as evidence in any court of law.
	This report cannot be reproduced, except when in full, without the written permission of the CEO.
	The samples collected shall be destroyed after 7 days from the date of issue of the certificate unless specified otherwise
	The liability of the laboratory is limited to the invoiced amount.
	All disputes are subjected to the Ranchi Jurisdiction.
Remarks	**Samples comply with prescribed limits.**

Sample Drawn By – Niraj Kumar
Tested By – Sumit Kant Srivastava (Lab Analyst)

Akash Khalkho 25/1/23	25/01/23
Verified by	Issued by
Akash Khalkho	Sanjeev Kumar Singh
(Sr. Lab Analyst)	(Technical Manager)

Authorized Signatory
Atmospheric Pollution
Yugantar Bharati Analytical & Environmental Engineering Laboratory

Annexure - 3

O/C

Aloke Steels Industries Private Limited

REGD OFFICE : OPP. ASHOK CINEMA,
RANCHI ROAD, MARAR - 829 117
DIST.- RAMGARH (JHARKHAND):
CIN : U27103JH2004PTC010725
Email : asipl.ramgarh@gmail.com

WORKS :
Vill : Budhakhap
Post : Karma -829137
Dist.-Ramgarh, (Jharkhand)

Ref. No.....
ASIPL/670/2019-20

Date.....
Date:-20/12/2019

To
The Member Secretary,
Jharkhand State Pollution Control Board,
T.A. Division Building (Ground Floor),
H.E.C., Dhurwa, Ranchi – 834004
Jharkhand

Sub: Regarding installation, commissioning and data transmission to Jharkhand State Pollution Control Board URL server of Online Continuous Ambient Air Quality Monitoring Station (CAAQMS) for PM 10 parameter.

Ref: Your letter no B-19, Dated 28/02/2019.

Respected Sir,

Kindly refer to above, we would like to inform your good self that online Continuous Ambient Air Quality Monitoring Station for PM 10 parameter are installed by M/s Environment SA India Pvt. Ltd., Navi Mumbai and it is connected online with Jharkhand State Pollution Control Board URL sever on 19/12/2019.

The location co-ordinate of CAAQMS for PM 10 parameter is given below:-

Sr. No.	CAAQMS location	CAAQMS location Co-ordinate
1	Near temple area	Lat – 23°39'34 (N) Long – 85°32'46 (E)

This is for your information.

Thanking you.

Yours faithfully,
For **Aloke Steels Industries Pvt. Ltd.**

20/12/19

Authorized Signatory

Cc to: - Regional Officer, Regional Office, State Pollution Control Board, Hazaribagh (Jharkhand)

Encl.:- 1) PM 10 analyser photograph.

Received 23/12/19


भारतीय डाक
India Post
EU826418935IN IVR:EU826418935IN
SP RANCHI CANTT H.O (829122)
Counter No:2,23/12/2019,11:46
To:REGIONAL OFFI, REGIONAL OFFICE
PIN:825301, Hazaribagh H.O
From:ALOKE STEEL,MARAR
Wt:20gms
Amt:41.30(Cash)Tax:6.30
(Track on www.indiapost.gov.in)
(Dial 1800 266 6868)

Aloke Steels Industries Pvt Ltd

PM 10 Analyser

Annexure - 4

ALOKE STEELS INDUSTRIES PRIVATE LIMITED

REGD OFFICE : OPP. ASHOK CINEMA
: RANCHI ROAD, MARAR- 829 117
: DIST. – RAMGARH (JHARKHAND)
CIN : U27103JH2004PTC010725
Email : asipl.ramgarh@gmail.com

WORKS:
VILL. BUDHAKHAP,
POST: KARMA -829137
DIST. RAMGARH
(JHARKHAND)

Ref. No. PO/ASIPL/1187/2022-23

Date: 21.12.2022

M/s. Vasthi Instruments Pvt Ltd.
Plot Number 21 & 22,
Block Number 24, P
Phase-4, Auto Nagar ,
Guntur (Andhra Pradesh)

Kind Attn: Mr. Mithun Jaiswal (Mobile Number: 9523057530)

Dear Sir,

Vide our order number PO/ASIPL/1187/2022-23 Dt.21.12.2022 we hereby place an order on you for supply of below materials:

SN	Item description	Qty	UOM	Rate in Rs.	Amount in Rs
01	Vasthi Make TUV Certified Online AAQMS for continuous monitoring of air quality Including supply, installation, configuration	01	No.	20,00,000=00	20,00,000=00

Parameters to be monitored:

Gas	Sensors	Range	Resolution
NOX	Chemiluminiscence	0-500ppb	3ppb
SOx	UVFluorescence	0-500ppb	3ppb
PM2.5	BetaAttenuation	0-1000 ug/m3	1ug/m3

Technical Specifications:

- PowerSupply:230VAC&SolarPower
- Linearity:±2%
- Temperature:(-20˚Cto60˚C
- OutputSignal:GPRSRS485
- IntervalTime:Aspercustomerrequirement
- ResponseTime:30Seconds
- Humidity:5-90%RH
- InstallType:Hanging,Lifting
- ShellMaterial:Aluminum
- ProtectionClass:IP65,TVS8000VAnti,Lightening &Anti -Surge Protection

21/12/2022

Contd....

Special clauses:

1. **DATA LOGGER FOR ONLINE DATA TRANSMISSION**-(AAQMS system data to transmit SPCB, CPCB and local Central server for one year) is in your scope
2. Warranty of the instrument: 18 months from date of supply or 12 months from date of installation whichever is earlier
3. Consumable items lile filter tape will be supplied by you on free of cost basis (Minimum -10 Qty).
4. During warranty period you will perform 4 scheduled and 2 emergency visits, total minimum 6 visits
5. During entire life cycle of the instruments, you will provide online support within two hours and offline support within 24-48 hours time.

General terms and conditions:

1. Price: Ex works, Guntur
2. GST: Extra@18%
3. Freight: To-Pay
4. Delivery: 2-3 weeks
5. Calibration certificate for one year, operation and maintenance manuals containing Do's and Don'ts and warranty certificate will be included in the supply
6. You will provide training to our persons on operation and maintenance for proper upkeep of the instrument and ensure safety during entire life cycle
7. Providing a 8'*8' room with AC, UPS and internet connection in our scope

Terms of payment: 30% advance , 60% against delivery at Jamshedpur, 5% after installation & commissioning after six months to one year.

Billing address : Aloke Steel Industries Pvt. Ltd., Vill. Budhakhap, Post: Karma, Dist. Ramgarh (Jharkhand) Pin: 829137.

GST Number : 20AAECA7250R1ZJ

Thanks & Regards

Yours faithfully,
For Aloke Steels Industries Pvt. Ltd.

21/12/2022

(AKHOURI JAYPRAKASH)
Head Purchase
M. No. 7050087222

Annexure - 5

Aloke Steels Industries Pvt. Ltd.

Village- Bhudhakhap, Post – Karma, Distt – Ramgarh, Jharkhand - 829137

Stack emission Report (PM All values in mg/Nm3)

Sl. No.	Month	Stack 1	Stack 2
		PM	PM
1	October-22	86	88
2	November-22	88	87
3	December-22	92	92
4	January-23	93	89
5	February – 23	91	86
6	March -23	90	88

Ambient Air Quality Monitoring

Location	Parameters	Unit	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
Nr. Main Gate	PM 10	µg/m3	91	94	93	92	89	90
	PM 2.5		52	54	54	56	56	55
Nr. OHC	PM 10		93	83	82	87	94	93
	PM 2.5		58	51	53	51	55	54
Nr. North-west boundary wall	PM 10		91	90	89	90	92	93
	PM 2.5		56	55	56	57	54	56

Annexure - 6

YUGANTAR BHARATI
ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Reaching Out for a Brighter Tomorrow

Accredited by: - NABL accredited testing laboratory vide certificate Number TC-4032
Jharkhand State Pollution Control Board (JSPCB)
Certified by : - ISO 9001:2015 & ISO 45001:2018

TC-4032

Test Certificate

ULR (Unique Lab Report) No.				T	C	4	0	3	2	2	2	0	0	0	0	0	1	8	6	2	F		
Discipline	Chemical	Group	Water																			Sample Description	Ground Water
Report Release Date		13th November, 2022																				Report ID	YBAEEL-221111-113513-GW01
W. Order/ JSPCB App. No.		ASIPL/073/2022-23																				Work Order Date	11.11.2022
Type of Industry(If any)		Sponge Iron Unit																				Job code/ Ref. no.	YBAEEL/WA/L/C/Nov.-22/04
Report Issue to		M/s Aloke Steel Industries pvt. Ltd. Opp Ashok Cinema, Ranchi Road, Marar-829117 Dist.-Ramgarh, Jharkhand.																					
Sample Received Date		10/11/2022																				Mode of sample collection	By Customer
Sampling Protocol		N/A																				Sample Code	221110-GW-X01
Sampling Location		Borewell																				Sampling Source	Ground Water
Sample pkg. Condition		Sealed Pack in PP Bottle																				Sample Quantity	3000 ml
Meteorological Cond. of Field		W.C.– N/A																				RH % - N/A	Temp. – N/A
Sample receipt Date		10/11/2022	Analysis Started on																			10/11/2022	Analysis completed on 13/11/2022

******Test Results ******

Sl	Parameter	Test Method	Units	MU %	Results	Limits
1.	pH value	IS 3025 (P-11):2002	*pH*	1.77	6.83	6.5-8.5
2.	Colour	IS 3025 (P-04):1983	Hazen	--	5	5-15
3.	Conductivity	IS 3025 (P-14):2013	µs/cm	1.90	405.0	--
4.	Turbidity	IS 3025 (P-10):2002	*NTU*	3.63	1.0	1-5
5.	Total Alkalinity (as $CaCO_3$)	IS 3025 (P-23):2003	*mg/l*	3.68	202.0	200-600
6.	Total Hardness (as $CaCO_3$)	IS 3025 (P-21):2009	*mg/l*	1.35	194.0	200-600
7.	Total dissolved solids	IS 3025 (P-16):2006	*mg/l*	2.85	244.0	500-2000
8.	Chlorine Residual	IS 3025 (P-26):2003	*mg/l*	30.64	BDL (MDL 0.07)	0.2-1
9.	Chloride (as Cl^-)	IS 3025 (P-32):2003	*mg/l*	3.41	7.0	250-1000
10.	Fluoride (as F^-)	APHA 4500 F-C 23rd edition 2017	*mg/l*	12.22	1.2	1.0-1.5
11.	Nitrate (as NO_3^-)	APHA 4500 NO_3^- (B) 23rdedition 2017	*mg/l*	11.33	0.86	45-No relaxation
12.	Calcium (as Ca^{2+})	IS 3025 (P-40): 2003	*mg/l*	4.19	44.9	75-200
13.	Magnesium (as Mg^{2+})	APHA 3500 Mg B : 2017	*mg/l*	1.90	19.9	30-100
14.	Sulphate (as SO_4^{2-})	IS 3025 (P-24):2003	*mg/l*	5.42	16.8	200-400

******End of Report******

Limit is specified as	IS 10500: 2021
Abbreviation	MDL : Minimum detection limit, BDL : Below detection limit.
Env. Condition of Lab	Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).
Specific contractual notes	All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility
	This report, in full or in part, shall not be used for advertising or as evidence in any court of law.
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	The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise
	The liability of the laboratory is limited to the invoiced amount.
	All disputes are subjected to the Ranchi Jurisdiction.
Remarks	Sample complies with prescribed limits.

Sample Drawn By – Customer
Tested By – Akash Khalkho (Lab Analyst)

13.11.2022	13/11/22
Verified by	Issued by
Shivani Kumari Singh	Umesh Das
Authorized Signatory	Authorized Signatory

Authorized Signatory
Chemical Section
Yugantar Bharati Analytical & Environmental Engineering Laboratory

Test Certificate

Discipline	Chemical	**Group**	Water	**Sample Description**	Ground Water
Report Release Date		13th November, 2022		**Report ID**	YBAEEL-221111-113513-GW01
W. Order/ JSPCB App. No.		ASIPL/073/2022-23		**Work Order Date**	11.11.2022
Type of Industry(If any)		Sponge Iron Unit		**Job code/ Ref. no.**	YBAEEL/WA/L/C/Nov.-22/04
Report Issue to		M/s Aloke Steel Industries pvt. Ltd. Opp Ashok Cinema, Ranchi Road, Marar-829117 Dist.-Ramgarh, Jharkhand.			
Sample Received Date		10/11/2022		**Mode of sample collection**	By Customer
Sampling Protocol		N/A		**Sample Code**	221110-GW-X01
Sampling Location		Borewell		**Sampling Source**	Ground Water
Sample pkg. Condition		Sealed Pack in PP Bottle		**Sample Quantity**	3000 ml
Meteorological Cond. of Field		W.C.– N/A		RH % - N/A	Temp. – N/A
Sample receipt Date		10/11/2022	**Analysis Started on**	10/11/2022	**Analysis completed on** 13/11/2022

******Test Results ******

Sl	Parameter	Test Method	Units	MU %	Results	Limits
1.	Odour	IS 3025 (P-05):2002	--	--	Agree.	Agreeable
2.	Taste	IS 3025 (P-07):2002	--	--	Agree.	Agreeable
3.	Cyanide(as CN^-)	IS 3025 (P-27)	*mg/l*	--	BDL (MDL 1.0)	0.05-No relaxation
4.	Phosphate (as PO_4^{3-})	IS 3025 (P-31):2003	mg/l	--	BDL (MDL 0.003)	--

******End of Report******

Limit is specified as	IS 10500: 2021
Abbreviation	MDL : Minimum detection limit, BDL : Below detection limit,
Env. Condition of Lab	Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).
Specific contractual notes	All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility
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	The liability of the laboratory is limited to the invoiced amount.
	All disputes are subjected to the Ranchi Jurisdiction.
Remarks	**Sample complies with prescribed limits.**

Sample Drawn By – Customer
Tested By – Akash Khalkho (Lab Analyst)

Shivani 13.11.2022	13/11/22
Verified by	Issued by
Shivani Kumari Singh	Umesh Das
Authorized Signatory	Authorized Signatory

Authorised Signatory
Chemical Section
Yugantar Bharati Analytical & Environmental Engineering Laboratory

YUGANTAR BHARATI
ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Reaching Out for a Brighter Tomorrow

Accredited by: - NABL accredited testing laboratory vide certificate Number TC-4032
Jharkhand State Pollution Control Board (JSPCB)
Certified by: - ISO 9001:2015 & ISO 45001:2018

TC-4032

Test Certificate

ULR (Unique Lab Report) No.	T C 4 0 3 2 2 2 0 0 0 0 0 0 1 8 6 5 F		
Discipline: Chemical	Group: Water	Sample Description	Residue & Contaminants in Water
Report Release Date	13th November, 2022	Report ID	YBAEEL-221111-113513 -GW01
W. Order/ JSPCB App. No.	ASIPL/073/2022-23	Work Order Date	11.11.2022
Type of Industry(If any)	Sponge Iron Unit	Job code/ Ref. no.	YBAEEL/WA/L/R/Nov.-22/02
Report Issue to	M/s Aloke Steel Industries pvt. Ltd. Opp Ashok Cinema, Ranchi Road, Marar-829117 Dist.-Ramgarh, Jharkhand.		
Sample Received Date	10/11/2022	Mode of sample collection	By Customer
Sampling Protocol	N/A	Sample Code	221110-GW-X01
Sampling Location	Borewell	Sampling Source	Ground Water
Sample pkg. Condition	Sealed Pack in PP Bottle	Sample Quantity	1000 ml
Meteorological Cond. of Field	W.C.– N/A	RH % - N/A	Temp. – N/A
Sample receipt Date	10/11/2022	Analysis Started on: 10/11/2022	Analysis completed on: 13/11/2022

******Test Results ******

Sl	Parameter	Test Method	Units	MU %	Results	Limits
1.	Arsenic (as As)	APHA 3114 B 23rd edition 2017	mg/l	10.34	BDL (MDL 0.003)	0.01-No relaxation
2.	Copper (as Cu)	APHA 3111 B 23rd edition 2017	mg/l	11.11	BDL (MDL 0.01)	0.05-1.5
3.	Iron (as Fe)	APHA 3111 B 23rd edition 2017	mg/l	2.34	0.18	1.0-No relaxation
4.	Lead (as Pb)	APHA 3111 B 23rd edition 2017	mg/l	10.64	BDL (MDL 0.02)	0.01-No relaxation
5.	Zinc (as Zn)	APHA 3111 B 23rd edition 2017	mg/l	15.35	BDL (MDL 0.1)	5-15
6.	Cadmium (as Cd)	APHA 3111 B 23rd edition 2017	mg/l	5.0	BDL (MDL 0.02)	0.003-No relaxation
7.	Mercury (as Hg)	APHA 3112 B 23rd edition 2017	mg/l	8.47	BDL (MDL 0.003)	0.001-No relaxation
8.	Chromium (as Cr)	APHA 3111 B 23rd edition 2017	mg/l	12.53	BDL (MDL 0.02)	0.05-No relaxation

******End of Report******

Limit is specified as	IS 10500: 2021
Abbreviation	MDL : Minimum detection limit. BDL : Below detection limit.
Env. Condition of Lab	Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).
Specific contractual notes	All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility
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	The liability of the laboratory is limited to the invoiced amount.
	All disputes are subjected to the Ranchi Jurisdiction.
Remarks	**Sample complies with prescribed limits.**

Sample Drawn By – Customer

13.11.2022	13/11/22
Tested by	Verified & Issued by
Shivani Kumari Singh	Umesh Das
(Lab Analyst)	Authorized Signatory

Authorized Signatory
Chemical Section
Yugantar Bharati Analytical &
Environmental Engineering Laboratory

YUGANTAR BHARATI
ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Accredited by: - Jharkhand State Pollution Control Board (JSPCB)
Certified by: - An ISO 9001:2015 & ISO 45001:2018

JHARKHAND State Pollution Control Board

Test Certificate

Discipline	Chemical	**Group**	Water	**Sample Description**	Residue & Contaminants in Water
Report Release Date		13th November, 2022		**Report ID**	YBAEEL-221111-113513 -GW01
W. Order/ JSPCB App. No.		ASIPL/073/2022-23		**Work Order Date**	11.11.2022
Type of Industry(If any)		Sponge Iron Unit		**Job code/ Ref. no.**	YBAEEL/WA/L/R/Nov.-22/02
Report Issue to		M/s Aloke Steel Industries pvt. Ltd. Opp Ashok Cinema, Ranchi Road, Marar-829117 Dist.-Ramgarh, Jharkhand.			
Sample Received Date		10/11/2022		**Mode of sample collection**	By Customer
Sampling Protocol		N/A		**Sample Code**	221110-GW-X01
Sampling Location		Borewell		**Sampling Source**	Ground Water
Sample pkg. Condition		Sealed Pack in PP Bottle		**Sample Quantity**	1000 ml
Meteorological Cond. of Field		W.C.– N/A		RH % - N/A	Temp. – N/A
Sample receipt Date		10/11/2022	**Analysis Started on**	10/11/2022	**Analysis completed on** 13/11/2022

******Test Results ******

Sl	Parameter	Test Method	Units	MU %	Results	Limits
1.	Aluminium (as Al)	IS 3025 (P-55):2003	*mg/l*	--	BDL (MDL 0.02)	0.03-0.2

******End of Report******

Limit is specified as	IS 10500: 2021
Abbreviation	MDL : Minimum detection limit, BDL : Below detection limit,
Env. Condition of Lab	Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).
Specific contractual notes	All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility
	This report, in full or in part, shall not be used for advertising or as evidence in any court of law.
	This report cannot be reproduced, except when in full, without the written permission of the CEO.
	The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise
	The liability of the laboratory is limited to the invoiced amount.
	All disputes are subjected to the Ranchi Jurisdiction.
Remarks	**Sample complies with prescribed limits.**

Sample Drawn By – Customer

Shivani 13.11.2022	13/11/22
Tested by	Verified & Issued by
Shivani Kumari Singh	Umesh Das
(Lab Analyst)	Authorized Signatory

Authorized Signatory
Chemical Section
Yugantar Bharati Analytical & Environmental Engineering Laboratory

Test Certificate

ULR (Unique Lab Report) No.				T	C	4	0	3	2	2	2	0	0	0	0	0	1	8	5	3	F	

Discipline	Biological	Group	Water	Sample Description	Ground Water
Report Release Date		12th November, 2022		Report ID	YBAEEL-221111-113513-GW01
W. Order/ JSPCB App. No.		ASIPL/073/2022-23		Work Order Date	11.11.2022
Type of Industry(If any)		Sponge Iron Unit		Job code/ Ref. no.	YBAEEL/WA/L/M/Nov.-22/02
Report Issue to		M/s Aloke Steel Industries pvt. Ltd. Opp Ashok Cinema, Ranchi Road, Marar-829117 Dist.-Ramgarh, Jharkhand.			
Sample Received Date		10/11/2022		Mode of sample collection	By Customer
Sampling Protocol		N/A		Sample Code	221110-GW-X01
Sampling Location		Bore well		Sampling Source	Ground Water
Sample pkg. Condition		Sealed Pack in PP Bottle		Sample Quantity	250ml
Meteorological Cond. of Field		W.C.– N/A		RH % - N/A	Temp. - N/A
Sample receipt Date		10/11/2022	Analysis Started on	10/11/2022	Analysis completed on 12/11/2022

******Test Results ******

Sl	Parameter	Test Method	Units	Results	Limits
1.	Total coliform	APHA 9221B 23rd Edition 2017	MPN/100 ml	BDL (MDL 1.1)	Shall not to be Detectable in any 100 ml sample
2.	Fecal coliform	APHA 9221E 23rd Edition 2017	MPN/100 ml	BDL (MDL 1.1)	

******End of Report******

Limit is specified as	IS 10500: 2012
Abbreviation	MDL : Minimum detection limit, BDL : Below detection limit. <1.8 / < 1.1 MPN/100 ml denotes that the presence probability of bacteria is absent in the tested sample.
Env. Condition of Lab	Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).
Specific contractual notes	All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility.
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	The samples collected shall be destroyed after 7 days from the date of issue of the certificate unless specified otherwise.
	The liability of the laboratory is limited to the invoiced amount.
	All disputes are subjected to the Ranchi Jurisdiction.
Remarks	Sample complies with prescribed limit.

Sample Drawn By - Customer

Madhuri Sinha	Mukesh Kumar 12.11.22
Tested by	Verified & Issued by
Madhuri Sinha	Mukesh Kumar
(Lab Analyst)	Authorized Signatory

Authorized Signatory
Microbiological Section
Yugantar Bharati Analytical &
Environmental Engineering Laboratory

Test Certificate

Report Release Date	13th November, 2022	**Report ID**	YBAEEL-221111-113513-WL01
W. Order/ JSPCB App. No.	ASIPL/073/2022-23	**Work Order Date**	11.11.2022
Type of Industry(If any)	Sponge Iron Unit	**Job code/ Ref. no.**	YBAEEL/WA/L/C/Nov.-22/04
Report Issue to	**M/s Aloke Steel Industries pvt. Ltd.** **Opp Ashok Cinema, Ranchi Road,** **Marar-829117 Dist.-Ramgarh, Jharkhand.**		
Sampling Date	11/11/2022	**Mode of sample collection**	By YBAEEL Team
Meteorological Cond. of Field	**W.C.**– Clear	**RH %** - 53	**Temp.**– 28

******Test Results ******

Sl	Location	Ground Water Level (mbgl)
1.	**Near Occupational Health Center**	**4.2**

******End of Report******

Abbreviation	MDL : Minimum detection limit, BDL : Below detection limit, MBGL : Meter below ground level.
Env. Condition of Lab	Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).
Specific contractual notes	All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility
	This report, in full or in part, shall not be used for advertising or as evidence in any court of law.
	This report cannot be reproduced, except when in full, without the written permission of the CEO.
	The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise
	The liability of the laboratory is limited to the invoiced amount.
	All disputes are subjected to the Ranchi Jurisdiction.
Remarks	----------

Verified by	Issued by
Sanjeev Kumar Singh	Umesh Das
Deputy Technical Manager	Technical Manager

Authorised Signatory
Chemical Section
Yugantar Bharati Analytical & Environmental Engineering Laboratory

Annexure - 7

M/S M.L.CONSULTANCY
ADDRESS: -WARDNO:32, RAMNAGARI,
MOTI NAGAR, BALAGHAT (M.P.)
Email:mlconsultency@gmail.com
Mobile: 8839929248, 9691835970

Ref No.102/Jabalpur

Date–29/07/2022

RAIN WATER HARVESTING COMPLETION CERTIFICATE

This is Certify that I have installed rain water harvesting system at premises of M/S ALOKE STEELS INDUSTRIES PRIVATE LIMITED AT VILLAGE-BUDHAKHAP, POST-KARMA, DISTRICT-RAMGARH, STATE-JHARKHAND, PINCODE-829137, Through 02 no. of recharge well (5feet Dia×8feet Depth) from those recharge system they have saved Approx. Per structure 25830 liter/ hour of rain water. Now the system is working properly.

Necessary Precautions-

- First two and three Flushes of rain water are not for se of recharging. It must be flushed out.
- This system works in Rainy Season and He will also have fresh water from industries.
- The System is designed For Purely Rain Water Harvesting. Please ensure that Run-off Water is Purely Rain Water/Fresh Water only & Contaminated free.
- Save Water Save Life.

M.L. CONSULTANCY BALAGHAT (M.P.)

VIKASH TIDKE
(Regd. Hydro Geologist Jabalpur zone)
Regd.No.609/2022
Mobile - 8839929248

COMPLETION REPORT

CONSTRUCTION OF GROUND WATER RECHARGE (ARTIFICIAL RECHARGE) WELL
At ALOKE STEELS INDUSTRIES PRIVATE LIMITED

WORK DONE REPORT WITH PHOTOGRAPHS

Prepared By

M/S M.L. CONSULTANCY

CSEB ROAD, RAMNAGAR BHAWANI NAGAR, RAIPUR CHHATTISGARH
PINCODE- 492001
Email: mlconsultancy@gmail.com, Mobile: 7000377676

Submitted to

ALOKE STEELS INDUSTRIES PRIVATE LIMITED

AT

Village: Budhakhap, Post – Karma
District: Ramgarh - 829137
Email: asipl.ramgarh@gmail.com

1. INTRODUCTION:

ALOKE STEELS INDUSTRIES PRIVATE LIMITED (ASIPL) is operating an Iron & steel Plant with Sponge Iron Plant having Four Nos. Coal Based Rotary Kilns each of 100 TPD capacity, with an annual capacity of 120000 Metric Tons.

2. OBJECTIVE:

The broad objectives of the study are:

- To observe Hydro geological conditions and availability of ground water of in the area.
- To work out scope of Rooftop & Storm water harvesting within the premises and suitable rainwater harvesting systems.
- To study more recharge possibilities in and around the plant.

3. RAIN WATER HARVESTING:

Rain water harvesting is collection and storage of rain water that runs off from roof tops, parks, roads, open grounds, etc. This water runoff can be either stored or recharged into the ground water. A rainwater harvesting systems consists of the following components:

1. Catchment from where water is captured and stored or recharged,
2. Conveyance system that carries the water harvested from the catchment to the storage / recharge zone,
3. First flush that is used to flush out the first spell of rain,
4. Filter used to remove pollutants,
5. Storage tanks and/or various recharge structures.

3.1 ADVANTAGE:

The benefits of the rainwater harvesting system are listed below.

- Less cost.
- Helps in reducing the water bill.
- Decreases the demand for water.
- Reduces the need for imported water.
- Promotes both water and energy conservation.
- Improves the quality and quantity of groundwater.
- Does not require a filtration system for landscape irrigation.
- This technology is relatively simple, easy to install and operate.
- It reduces soil erosion, storm water runoff, flooding, and pollution of surface water with fertilizers, pesticides, metals and other sediments.

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- It is an excellent source of water for landscape irrigation with no chemicals, dissolved salts and free from all minerals.

3.2 DISADVANTAGE:

In addition to the great advantages, the rainwater harvesting system has a few disadvantages like unpredictable rainfall, unavailability of the proper storage system, etc.

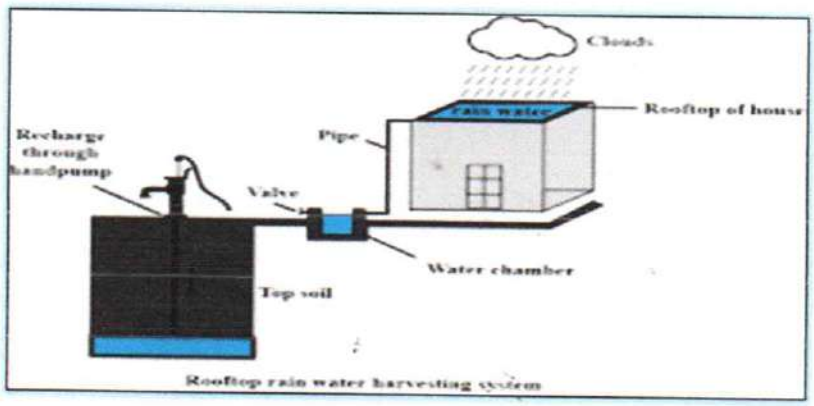
Listed below are a few more disadvantages of the rainwater harvesting process.

- Regular maintenance is required.
- Requires some technical skills for installation.
- Limited and no rainfall can limit the supply of rainwater.
- If not installed correctly, it may attract mosquitoes and other waterborne diseases.
- One of the significant drawbacks of the rainwater harvesting system is storage limits.

3.3 METHODS OF RAIN WATER HARVESTING SYSTEM

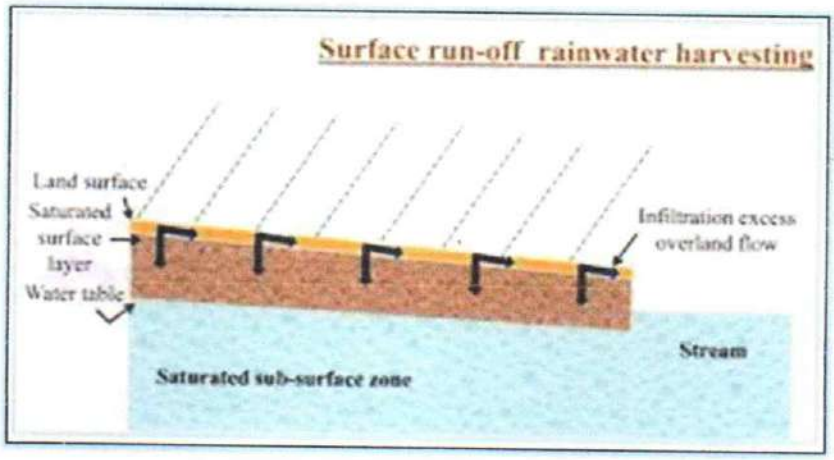
Rooftop rainwater harvesting – The rooftop becomes the catchments, and the rainwater from the building and houses are collected. The components of the rooftop rainwater harvesting are:

1. First, flush.
2. Transportation.
3. Catchment.
4. Filter.



Rooftop rain water harvesting system

Surface runoff harvesting – It is the system that collects rainwater, which flows away as surface runoff. The runoff rainwater is caught and used to recharge aquifers by adopting appropriate techniques.

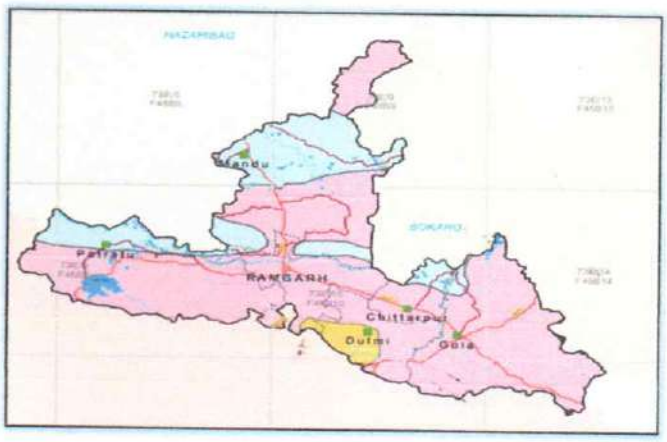


3.4 FACTORS AFFECTING THE AMOUNT OF RAIN WATER HARVESTING

- Catchment features
- Quantum of runoff
- The capacity of storage tanks

4. GEOLOGY OF RAMGARH:

Alluvium, soil/Boulders, Conglomerate, Older alluvium & Laterite. Lower Gondwana system/ Carbonaceous shale/ Sandstone/ Coal Seam, Chotanagpur Gneiss & Granophyre, Basic & ultrabasic.



5. HYDROGEOLOGY OF RAMGARH:

The district is having varied hydrogeological characteristics due to which ground water potential differs from one region to another. It is underlain by Chotanagpur granite gneiss of

pre-Cambrian age in three-fourth of the district.

Aquifer systems Two types of aquifers are found. Weathered aquifer and fractured aquifers. Thickness of weathered aquifers varies from 10-20 m in granite terrain and 30-60m in lateritic terrain. In weathered aquifer ground water occurs in unconfined condition while in fractured aquifer ground water occurs in semi confined to confined condition.

6. CLIMATE & RAINFALL OF RAMGARH:

The area lies in the sub-humid region of Chotanagpur Plateau and enjoys semi-extreme type of climate. The day temperature rises around 40°C during the summers and drops down to around 10°C during the winter.

The average annual rainfall of the district is 1251.2 mm more than 80% of the precipitation is received during the monsoon months.

7. PHOTOGRAPHS OF RAINWATER HARVESTING STRUCTURE CONSTRUCTED ON BUILDING PREMISES

NUMBER OF STRUCTURE – **2 NOS** (Size: 5 feet × 8 feet)
Feeling material of recharge well: Stone, Coal, and Sand.

S. No.	Location	Latitude	Longitude
1	Behind the store room	23.66334	85.553993
2	Near Plant B gate	23.675238	85.54979

Average surface run-off coefficients considered for different surfaces as per CGWB norms are given below in table:

S. No.	Details	Values
1	Runoff coefficient for roof top	0.85
2	Runoff coefficient for yard & paved area	0.65
3	Runoff coefficient for green belt	0.15
4	Runoff coefficient for open area	0.20

Reference: Manual of Artificial Recharge of Ground Water (CGWB, 2007)

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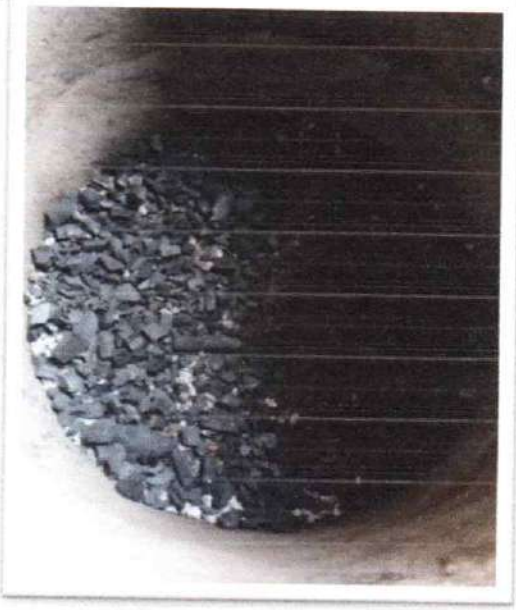
PHOTOGRAPHS

1. Structure: Behind the store room



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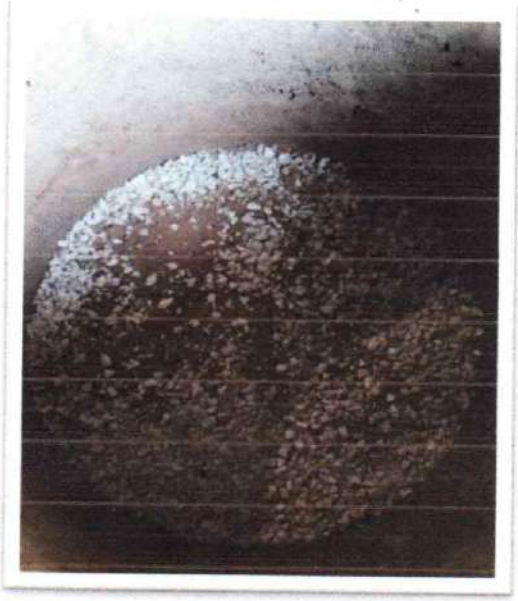
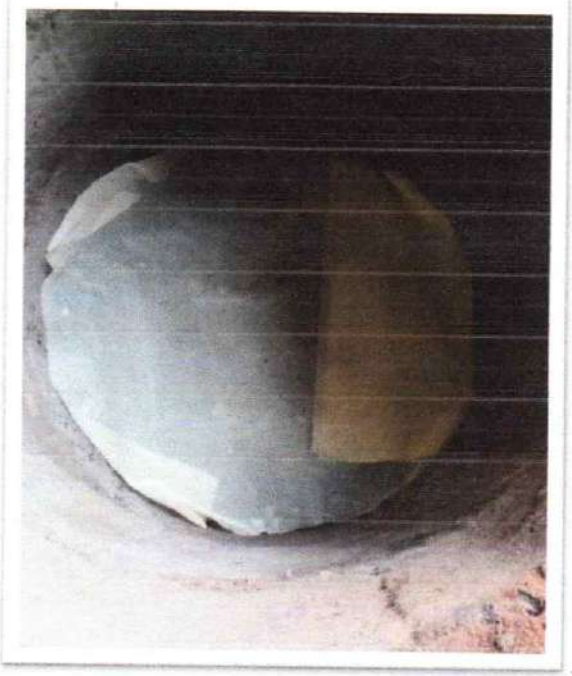
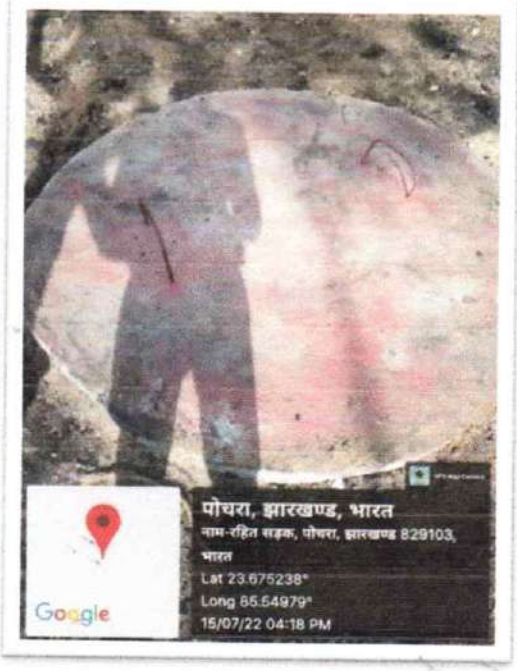
2. Structure: Near Plant B gate







v

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BALAGHAT (M.P.)

8. CALCULATION OF RECHARFE FOR PER STRUCTURE.

DETAILS OF ARTIFICIAL RECHARGE STRUCTRE & ITS RECHARGE QUANTUM MEASURES

We have implemented total 02 nos. of recharge structure in which all of recharge well is of 5 feet Día× 8 feet Depth.

QUANTUM OF RAIN WATER RECHARGE THROUGH RECHARGE WELL OF 5 FEET DIA × 8 FEET DEPTH:

1. Volume of water within free Board (Settlement Chamber) = $\pi r^2 h$ = 4. 44 Cubic meter

2. Volume of water in Gravel filled part, i.e., Volume of water within the pore spaces of sand, gravel filled part @45% =3.14× $(0.75)^2$×0.5×0.45 = 0.3974 Cubic meter

3. Volume of water in recharge well through which recharge will be done Intake capacity of recharge well = 20000 lph = 20 m^3/hour

4. Settlement chamber of 1 cubic meter of capacity

Therefore, total volume to be recharge through an individual structure will be = (4. 44+0.3974+20+1) = 25.83 Cubic meter / hour = 25830 liter / hour

Thus, the Rain water recharging well can accommodate 25.83 cubic meter/hour of the Rain water.

9. DECLERATION:

Recharge of ground water table is a gradual process; we cannot suddenly increase the ground Water table after constructing recharge structures, by constructing any type of recharge structure, And we can give our contribution in aquifer recharge. This will help to rejuvenate the depleting Ground water resources. Also help to save the little amount of rain water which used to drain Away from many years. Thus, it is concluded that implementation of RWH: ALOKE STEELS INDUSTRIES PRIVATE LIMITED would result in the form of the best approach to deal with present scenario of water scarcity and storing huge quantity of 25830 liters / hour.

M.L. CONSULTANCY BALAGHAT (M.P.)

Annexure - 8

Report
on
GHG Emissions inventory & Its Reduction Including Carbon Sequestration through Plantation for Sponge Iron Plant

ALOKE STEELS INDUSTRIES PVT. LTD.

Vill: Budhakhap, P.O.: Digwar, Dist.: Ramgarh, Jharkhand

Prepared By

REDUCE • REUSE
RECYCLE • RESPECT

Institute for Environmental Management
Ranchi, Jharkhand, 834002

November – 2022

Preface

A report on GHG emission Inventory and its reduction including Carbon Sequestration through plantation for sponge iron plant has been prepared existing sponge iron plant of Aloke Steels Industries Pvt. Ltd. (ASIPL) operating a Sponge Iron Plant having four (4) Nos .of coal based Rotary Kilns, each of 100 TPD capacity at village: Budhakhap, District: Digwar in the state of Jharkhand since 2004. The report is prepared based on the secondary data provided by ASIPL

Name and address of manufacturing facility:

Aloke Steels Industries Pvt. Ltd.
At- Budhakhap, Post- Digwar - 829137,
Dist. - Ramgarh (Jharkhand)

E-mail: asipl.ramgarh@gmail.com

Within the ambit of this study, the following units were considered:
GHG emissions have been estimated considering a system boundary from gate-to-gate which is from raw materials entering a sponge iron plant producing sponge iron or DRI used for manufacturing of steel. The system boundary in this study include the

- Sponge Iron process

The purpose of this study is to highlight the potential areas of GHG emission of sponge iron production for reducing GHG emissions. The main sources of GHG emissions during sponge iron manufacturing are considered and the key groups of measures that can reduce the GHG emissions are identified.

Contents

List of Figures

List of Tables

Chapter – 1

Introduction

The production of iron through direct reduction (Direct-Reduced Iron; DRI) involves the use of natural gas or coal to reduce iron ore to iron through carbothermic reactions at a temperature below its melting point, negating the need for a blast furnace as otherwise required. In India, around 25% of iron is produced through direct reduction. However, there is a high reliance on coal (79% of DRI production capacity) causing significant energy use and emissions from production. Also, a large portion of raw materials (especially coal) is imported due to low quality of domestic resources. Weighted average specific energy use and emissions is calculated for seven such clusters (using total cluster capacity), based on regional raw material qualities and transport distances from various mines, ports and beneficiation plants. The results suggest an overall specific (per tonne DRI) energy consumption of 27.24 GJ with an emission of 2.8 tCO_2eq, 2.6 kg NOx, 1.8 kg SOx and 1.4kg $PM_{2.5}$. The specific energy and emission values are used to calculate the total annual emissions by multiplying with the 2019 DRI production amount of 27.8 million tonnes. The annual midpoint and endpoint impacts as per ReCiPe 2016 (country-wise factors where applicable) are then calculated. The DRI industry causes 77.31 million tCO_2eq/year in global warming potential, 59.02 thousand tSO_2eq/year in acidification potential and 287.2 thousand $tPM_{2.5}eq$/year in fine dust formation potential. It is estimated to cause approximately 270,000 years of reduction in overall human life and 230 species years of species loss (mainly in terrestrial ecosystems). Different sensitivities are carried out to understand the impact of some key influencing parameters (effect of ore quality and coal quality, effect of imports of ore and coal). Some development scenarios, such as increasing coal washery capacity, shifting land transport from road to rail, increasing waste-heat recovery penetration, effect of stricter regulations, etc. are discussed, along with pathways for fuel-switching from coal to natural gas, and then from natural gas to hydrogen.

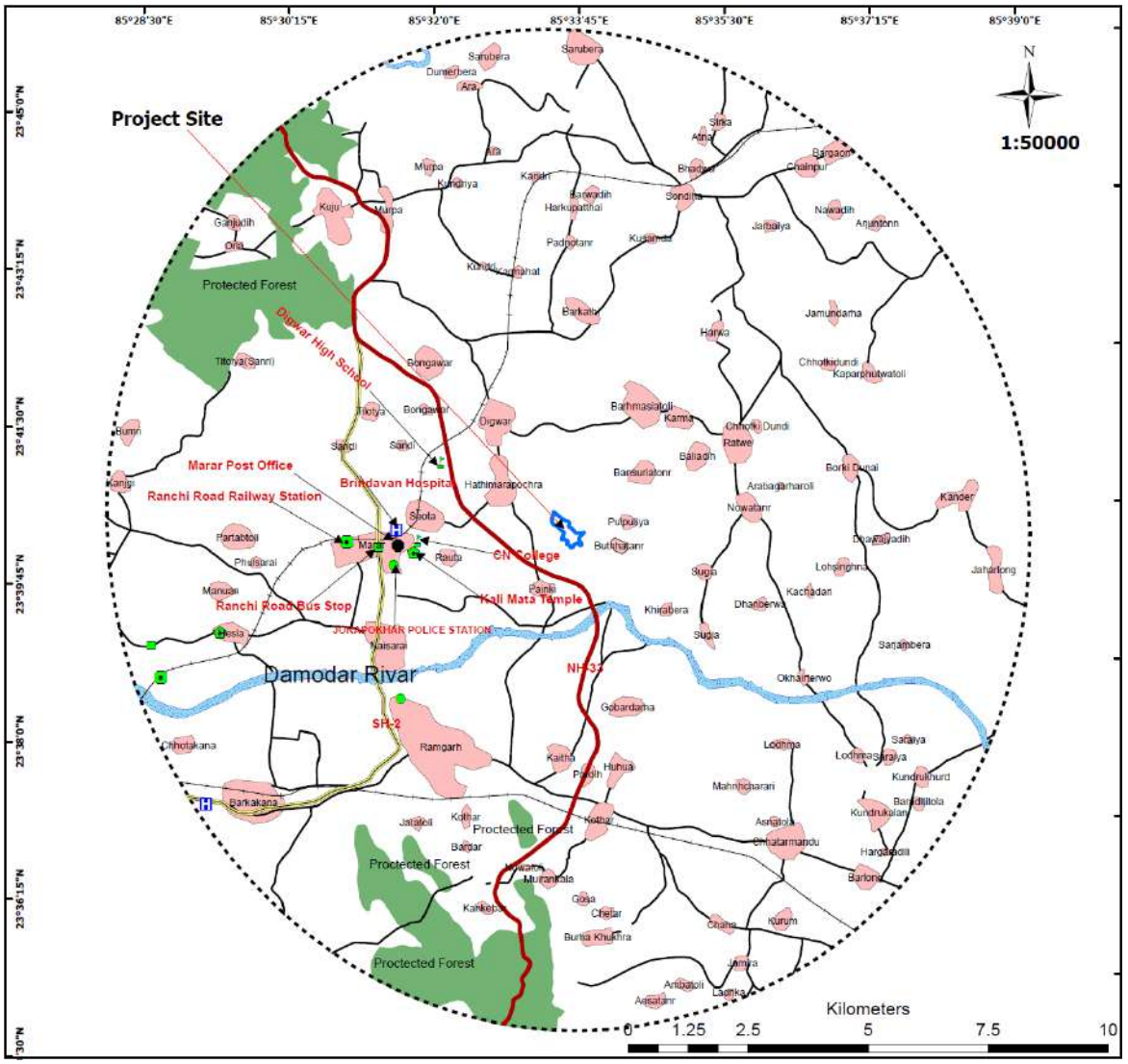
Aloke Steels Industries Pvt. Ltd. (ASIPL) is a registered company under the Company's Act. It is operating a Sponge Iron Plant having four (4) Nos .of coal based Rotary Kilns, each of 100 TPD capacity at village: Budhakhap, District: Digwar in the state of Jharkhand since 2004. Sponge Iron is presently sold to other steel producers for making finished steel products.

GHG emission inventory is comprised of carbon footprint analysis where it is historically been defined as "the inventory of greenhouse gas (GHG) emissions caused by an organization, event, product or person". In this report the estimation of carbon emission for sponge iron production, carbon budgeting/balancing, carbon sequestration activities and carbon offsetting strategies are discussed. GHG emission calculation has been carried out using IPCC guidelines as overall principal and following standard methodology of GHG protocol for GHG estimation. Estimations for this green field project are majorly for scope 1 where direct use of materials and energy for the plant is considered.

ASIPL has installed 4x100TPD (Sponge Iron plants) DRI Units at village: Budhakhap, District: Digwar in the state of Jharkhand since 2004 after getting NOC from Jharkhand Pollution Control Board (JSPCB) and subsequently Consent to Operate from JSPCB.

Now ASIPL intends to use the waste heat energy from the DRI units in Waste Heat Recovery Boilers and dolochar produced in plant in AFBC Boiler, supplemented by coal, for production of 18 MW power. A new 3 x 12T Induction furnace with 67,500 MTPA Rolling Mill and Iron Ore Cushing & Beneficiation facility, 201,000 TPA (throughput) and 12,000 TPA capacity Slag Crushing Plant are also proposed at at Plot No: 229, 234, 240, 226, 227,228, 239, 208, 242, 218, 225, 244, 223, 224, 236, 345, 338, 245, 235, 345, 272, 221,231, 230, 217, 214, 241, 237, 1088, 238, 258, 349, 243 and 216-219-220-232-233-246 in Burhakhap village, Ramgarh district in the state of JharkhandExpansion of Sponge Iron plant with addition of Power plant, SMS, Rebar Rolling Mill & Iron ore crushing & Beneficiation Facility

Fig.:1 Digitized Key plan of project site



Chapter - 2

Project Description

Overview of direct reduction process

The basic mechanism behind iron production involves two main pathways,

i. Using a blast furnace (heated using coal or natural gas) for reduction of iron ore (iron oxides) into pig iron by reaction with coke and fluxes (usually limestone) (SAIL, 2012). The molten pig iron is then converted to steel (through the steelmaking process, usually with a basic oxygen furnace) or processed and sold as such. In 2019, 46.7% of India's steel industry utilized the blast furnace-basic oxygen furnace (BF-BOF) method (World Steel Association, 2019b).

ii. Using coal (solid or gas) or reformed natural gas to perform a direct reduction of the iron ore into Direct-Reduced Iron (DRI) or Sponge iron at high heat (but below melting point) (Sarangi and Sarangi, 2011). The sponge iron is then converted to steel (with an electric arc or electric induction furnace) or processed and sold. The share of electric induction/arc furnace processes in India constituted 53.3% in 2019 (World Steel Association, 2019b).

The SL/RN process (developed by **S**teel Company of Canada, **L**urgi Chemie, **R**epublic Steel Company and **N**ational Lead Corporation in 1964) forms the basis of rotary kiln technologies used in India (Sarangi and Sarangi, 2011); the process uses a rotary kiln into which iron ore pellets, non-coking coal (for reduction) and limestone/dolomite (flux) is supplied. From the other end, air and coal (for combustion) are supplied. The resulting high temperatures (900 to 1020 °C) form a reducing atmosphere of CO which reduces the iron ores to sponge iron. The sponge iron is subsequently separated out of the remaining reaction products through magnetic separation. The kiln is inclined at an angle of ~2.5° to facilitate

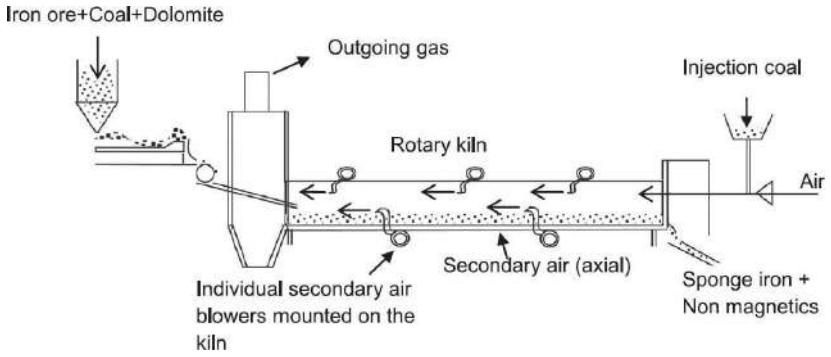


Figure 2: Rotary kiln *(SL/RN process) (Source: Dey et al, 2015)*

From the feed end to the exit. The rotary motion encourages even reaction of the charge through mixing with the reducing gases (Dey et al, 2015). The basic process is shown in Figure 2.

Around a third of the kiln length is typically required for preheating the charge consisting of iron ore, coal and dolomite. The dolomite flux is added to control sulphurisation. The coal supplied along with the ore is mainly meant to produce reducing gas by reacting with atmospheric oxygen at high temperature. In this stage, the iron ore (predominantly hematite - Fe2O3) is partially reduced to ferrous oxide. After reaching the ideal reaction temperature of 900-1100 °C, the ore is reduced to metal in the latter portion of the kiln through further reduction. The following are the main reactions taking place within the kiln, at a temperature of 1067 °C (Sarangi and Sarangi, 2011).

$$3Fe_2O_3 + CO \rightarrow 2Fe_3O_4 + CO_2 - 44.46\ kJ/mol \quad (1)$$

$$Fe_3O_4 + CO \rightarrow 3FeO + CO_2 + 3.07\ kJ/mol \quad (2)$$

$$FeO + CO \rightarrow Fe + CO_2 - 11.12\ kJ/mol \quad (3)$$

The CO required for the above reduction reactions is produced when fixed carbon of the feed-end coal reacts with CO2 produced by the reductions, in a perpetual, reversible reaction called Boudouard reaction.

$$C + CO_2 \leftrightharpoons 2CO + 167.52\ kJ/mol \quad (4)$$

This reaction is crucial to maintaining the reducing atmosphere and kiln temperature. The ratio of CO/ (CO+CO2) depends on the temperature inside the kiln; ideally a CO concentration of ~50-60% is maintained (Dey, Prasad and Singh, 2015) to ensure optimum reduction of ore. Since the forward reaction (4) is highly endothermic, it serves to maintain kiln temperature for a regulated combustion of injectioncoal. By combining the above reactions, we get

$$2Fe_2O_3 + 3C \rightarrow 4Fe + 3CO_2 + 432.52\ kJ/mol \quad (5)$$

Note that only one part of CO produced in (4) is used for the reduction, whereas the other part is combusted into CO2 resulting in a net output of CO2 from the kiln. Various other reactions take place dueto the combustion of injection coal fixed carbon and volatiles, causing the formation of additional CO and CO2 along with H2O and CH4.

The sulphur present in coal is removed by dolomite, as the $CaCO_3$ and $MgCO_3$ decompose into CaO and MgO to act as desulphurising agents. The addition of dolomite is crucial to control the sulphur content in the DRI (to prevent embrittlement in steel production), and also to control SOx emissions (Sarangi and Sarangi, 2011).

After the reduction process, the metal (now known as sponge iron or DRI) is separated from the remaining slag (consisting of coal char, unreacted coal, sulphurated dolomite) through magnetic separation. The product CO_2 reacts further with incoming/excess coal to produce more CO. Thus, for a low ash coal with high reactivity, the reduction efficiency will be higher as the quantity of coal input would be reduced. Also, the retaining time of the ore within the kiln can be lower, thus improving output (Dey et al, 2015).

Aloke Ispat Industries Pvt. Ltd. has installed 4x100TPD (Sponge Iron plants) DRI Units at village: Budhakhap, District: Digwar in the state of Jharkhand in the year 2004 after getting NOC from Jharkhand State Pollution Control Board (JSPCB).

ASIPL management has realized that for its business to survive, the Company should stop selling sponge iron and should produce TMT Reinforcement Bars as value added product and also take measures to reduce cost of production. The project is a stand-alone project for creating Steel Making facility at one location without dependence on other projects.

1. Installation of a Captive Power Plant of 18 MW Capacity to produce cheaper electrical power by utilizing;
   - Waste Heat from Sponge Iron Kiln Flue Gases.
   - Utilizing char produced as solid waste from Sponge Iron Production Process, to serve as a part of fuel for the proposed Power Plant.
   - Use of coal from captive mines of the group to meet the balance requirement of fuel for the Power Plant.

2. Install a Steel Melting Shop having Two (2) Nos. Induction Furnaces each of 12 Ton capacity and a 2-Strand 6/11 M Radius Continuous Casting Machine with an annual capacity of 72,000 Metric Tons of Billets using 80% Sponge Iron and 20% Scrap /Pig Iron as charge-mix.
3. Install 14 Strand Rolling Mill downstream of Continuous Casting of Steel Melt Shop to carry out direct rolling of hot billets without any additional heating in a Reheating Furnace. This will save on fuel cost of reheating the billets which has to be incurred if billets produced are cooled, transported and rolled in a rolling mill far away.
4. Iron Ore Crushing & Beneficiation Facility to process 201,000 T/year throughout of iron ore is proposed to be installed for providing beneficiated iron ore to the DRI Kilns for their optimum operation.

Table 2.1: Salient Features of the Project

S. No	Particulars	Details
1.	Latitude	23˚39'46.33" N
2.	Longitude	85˚33'10.04" E
3.	Altitude	260 m above MSL
4.	Toposheet	73 E/6 & 73 E/10
5.	Plot/Survey/Khasra No.	Plot No: 229, 234, 240, 226, 227, 228, 239, 208, 242, 218, 225, 244, 223, 224, 236, 345, 338, 245, 235, 345, 272, 221, 231, 230, 217, 214, 241, 237, 1088, 238, 258, 349, 243 and 216-219-220-232-233-246
6.	Seismicity	Area falls under least affected earthquakes zone III *Source-as per IS 1893 – 2002*
7.	Present land use	Within existing industrial premises
8.	Climatic condition (Annual Average)	Ambient Air temp 10o C to 37o C Avg. annual rainfall 1462.8 mm
9.	Nearest village/Habitation	Budhakhap- 01 km(Population-430) *Source:* PCA Census 2011,Ramgarh district, Jharkhand state
10.	Nearest Town	Ramgarh- 5 km
11.	Nearest Police Station	Ramgarh Police Station, 5.0 Km in SW
12.	Nearest Post office Ghutu Post office	Karma Post office – 1.5 Km in E direction from the project site.
13.	Nearest River	Damodar River -1.5 km.

14.	Nearest Railway station	Ranchi Road Ramgarh- 4 km
15	Nearest Temple	Kalimata Temple-2.8 km in W direction
16.	Nearest College	CN College -5.8 km in W direction
17.	Nearest Bus Stop	Digwar High School 2.6 km in NW direction
18.	Nearest Medical	Brindawan Hospital 4.1 km in W direction
19.	Nearest airport	Ranchi Airport, 50 km
20.	Sanctuaries /National Parks/ Biospheres, etc	Nil
21.	Topography	Gently undulating
22.	Defense Installations	Nil
23.	Historical Places	Chinnamasta Temple which is located 28.6 Km in E direction
24.	Reserve Forest/ Protected Forest	Ramgarh PF – 07 Km Gobardarha PF – 2.5 Km Kaitha PF – 03 Km
25.	Total Land Area	20.04 Acres (8.11 ha.)
26	Total Water Requirement	Existing 1.5 (m3/day) Proposed 17 (m3/day)

		Surface water will be sourced through Damodar River for domestic and other allied uses in the plant.
27.	Total Power Requirement	18.5 MW Power requirements at present are being met from DVC. After the commissioning of power plant the integrated unit will fulfil its power requirements from the 18 MW Captive power plant. Company has also installed 1×750 KVA 1×500 KVA DG sets.
28.	Total Manpower	Existing 115 Proposed 500 Total 615
29.	Total capital cost	Existing (Crores) Rs. 38.17 Proposed (Crores) Rs. 169.50 Total (Crores) Rs.207.67

Power Plant Waste Heat BoilersAFBC Boiler	Total 18 MW	18 MW	18MW (Captive use)
Iron Ore Crushing & Beneficiation Plant	80 – 100 TPH single stream(throughput)	920 T	276,000 T
Slag Crushing Plant for SMS Slag	Single stream 8 TPH	55 T	162,00 T

Table 2.2: Summary of the Project (Existing & Proposed)

PRODUCTION FACILITY	PLANT SIZE	PRODUCTION(TPD)	PRODUCTION(TPA)
EXISTING			
Sponge Iron Plant	4x 100 T /day of DRI	400 TPD	120,000T
PROPOSED			
Steel Making Shop, Induction Furnaces and Billet Caster	3 x 12 T	360 T	108,000 T
Rolling Mill – TMT Rebar Mill	15 Stand Mill with Direct Hot Charging	300 T	90,000 T

SPONGE IRON PLANT (Existing)

Sponge Iron Plant is having Four (4) Nos. Coal Based Rotary Kilns each of 100 TPD Capacity, with an annual capacity of 120,000 Metric Tons. Sponge Iron Plant has its own material storage and handling facilities and other auxiliary plant units.

Process Description:

To produced sponge iron, sized lump ore is fed along with coal, and flux in to the Rotary Kiln wherein iron ore gets converted to metallic iron. Flux helps in scavenging Sulphur content from coal. Brief features of the process are as follows:

- Kiln process of DRI production involves tumbling of iron ore with select grade of non- coking coal and dolomite in a rotary kiln.
- The kiln is supported on roller stations and rotated by means of a variable speed AC motor and girth gear mechanism. Refractory lined rotary kiln of suitable size is placed on two or four support stations and is kept inclined at 2.5 % slope.
- The transport rate of materials through the kiln can be controlled by varyingits slope and speed of rotation. There are inlet and outlet cones at oppositeends of the kiln that are cooled by individual fans.
- The kiln shell is provided with small sampling ports, large ports for rapid removal of the contents in emergency or for lining repairs. Longitudinal positioning of the kiln on its riding rings is controlled hydraulically.
- The coal and iron ore are metered into the high end of the inclined kiln. A portion of the coal in pulverized form is also injected pneumatically from the discharge end. The burden first passes through a pre-heating zone where coal de-volatilization takes place and iron ore is heated to pre-

heating temperature for reduction.

- Temperature and process control in the kiln are carried out by installing suitable no. of air injection tubes made of heat-resistant steel. These are spaced evenly along the kiln length and countercurrent to the flow of iron ore. Tips of the air tubes are equipped with special internal swirls to improve uniformity of combustion.
- A central burner located at the kiln discharge end is used with LDO for heating the cold kiln. After initial heating, the fuel supply is turned off and the burner is used to inject air for coal combustion.
- The kiln temperatures are measured with fixed thermocouples and Quick Response Thermocouples (QRT). Fixed thermocouples are located along the length of the kiln to monitor temperature profile of kiln. Fixed thermocouples, at times, may give erratic readings due to coating with ash, ore or accretion. In such a case QRT are used to monitor the kiln temperatures.
- The product (DRI) is discharged from the kiln at about 1000°C. An enclosed chute at the kiln discharge end is used to transfer the hot DRI to a rotary cooler. The cooler is a horizontal revolving cylinder of appropriate size, wherein DRI is cooled indirectly by water spray on the cooler upper surface. The cooling water collected in troughs below is pumped to the cooling tower for recycling along with make-up water.
- DRI is cooled to about 100°C without exposure to atmospheric air. A grizzly in the chute removes accretions that are large enough to plug up or damage the cooler discharge mechanisms.
- The product is screened to remove the plus 30 mm DRI. The undersize — a mix of DRI, dolochar and coal ash are screened into +/- 3mm fractions. Each fraction passes through a magnetic separator. The non-magnetic portion of the plus 3 mm fraction is mostly char and can be used in AFBC Boiler for power generation.
- The nonmagnetic portion of –3mm fraction, mostly spent lime, ash and fine char is discarded.

- Magnetic portion of each fraction is DRI. Of this the +3mm fraction can be used directly for steel making and the finer fraction is either briquetted or collected in bags.
- The kiln waste gases leave at about 850-900°C. These are passed through dust settling chamber where heavier particles settle down due to sudden decrease in velocity of gases. The flue gases are then passed through an After Burning Chamber (ABC) where un-burnt combustibles are burnt by blowing excess air. The temperature of the

  after burner chamber, at times, is controlled by water sprays.
- Burnt gases are passed through a down duct into an evaporation cooler where its temperature is brought down and balance dust particles are separated through a pollution control equipment namely ESP / Bag filter/ scrubber. The gas is let off into the atmosphere through stack via ID fan.
- The thermal energy in outgoing flue gases is recovered through Waste Heat Recovery Boiler (WHRB) where sensible heat of the gases is extracted and then let off into the atmosphere after passing through pollution control equipment like ESP, ID fan and stack.

Table2.3: Raw Material Requirement for Existing Sponge Iron Plant

Unit	**Installed Capacity**	**Working Days**	**Annual Production**
Sponge Iron Plant	4x100 TPD	300	120,000 MT of Sponge Iron
Water Requirement	Make Up Water	300	247 m^3/day
Power Requirement		300	950 KVA
Raw Material Requirement	**Raw Material**	**Size (mm)**	**Quantity (MT/Annum)**
	Iron Ore	5-18	58027
	Coal	20 & below	117665.78

Iron ore Pellets	5-10	107994.62
Dolomite/Limestone	2-4	1611.86

Process flow diagram of sponge iron plant is given below in

Figure 2.4. **Raw Material Handling System.**

Main Raw materials Iron Ore, Coal & Dolomite are fed to the ground hoppers with the help of Pay Loaders and Tippers and carried by belt conveyors to the Crusher House having Crusher for crushing and Vibrating Screen. Screened and Crushed Material carried out by belt Conveyers to the stock house having 2 days bins for Iron Ore, Feed coal, Dolomite, and Injection coal (Lumps and Fines). Injection Coal is screened in –5 mm. and –18mm sizes and stored in separate bins. The main raw material handling consists of iron ore crusher, vibrating screen and conveyor belts for preparation of raw material as mentioned above.

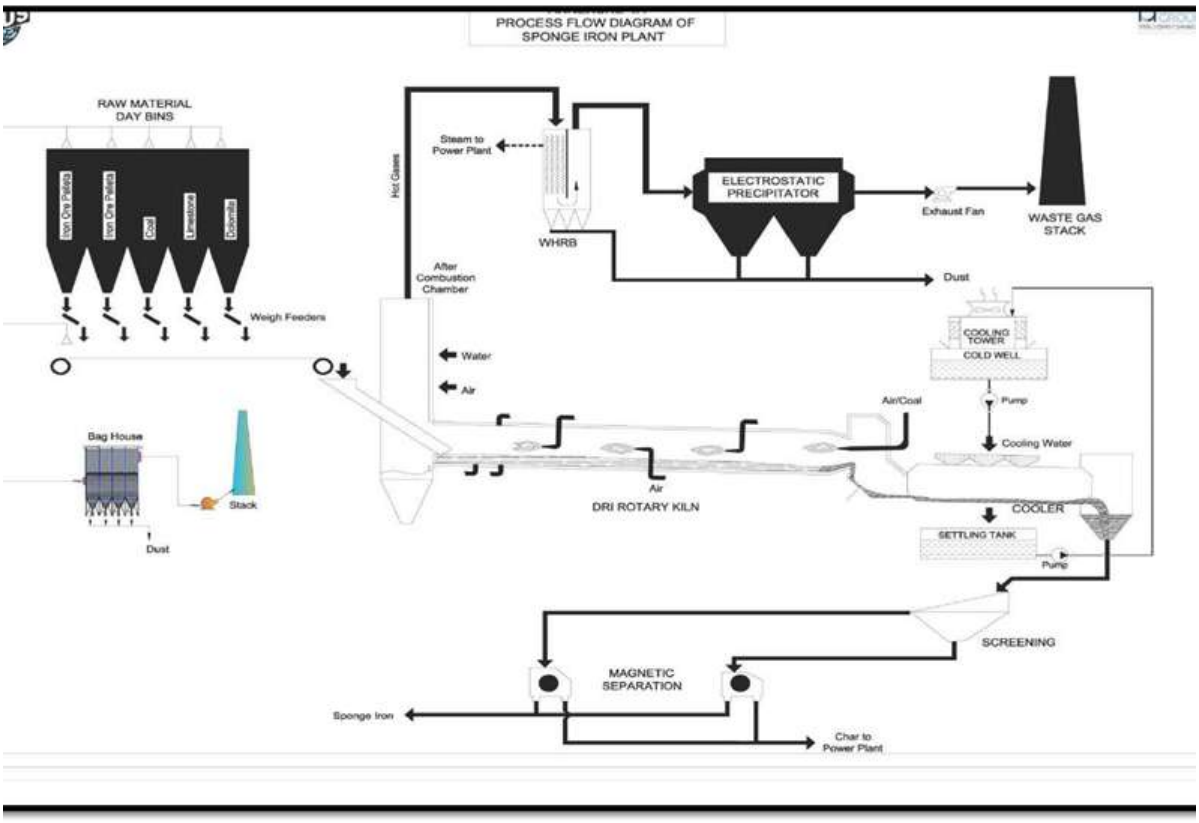


Figure3: Process flow diagram of Sponge Iron Plant

Brief outline for resource utilization

Resource utilization by optimization has been envisaged from design stage itself for plant related activities. The various resources likely to be used are detailed below.

i) Iron ore

ii) Coal

iii) Dolomite

iv) Water &

v) Power

These resources are effectively used in the plant. Rainwater harvesting is being envisaged on large scale to utilize the rain water and reduce the water requirement from external sources. The effluent generated from various units will be treated and recycled back into system to ensure zero discharge.

Chapter – 3

Green House Gas Emissions

In this section emission of Green House Gases (GHG) has been calculated for the existing Sponge iron plant. GHG emissions have been estimated for the units involves in sponge iron production. GHG emission calculation has been done understanding the IPCC guidelines and following standard methodology of GHG protocol for GHG estimation. Calculations are done majorly for scope 1 where direct use of materials and energy for the proposed plant is considered.

Figure 4: Material flow for sponge iron plant

Section	Technology	Process flow
Sponge Iron plant	Coal Based Rotary Kiln Process	Feeding of RM to the Rotary Kiln through feed tube Cooling in the rotary cooler Screening magnetic separation of the product sponge iron Other outputs - Char

Table 3.1: Raw Material Requirement

Sponge Iron Plant (400 TPD / 120000 TPA) – EXISTING						
1	Iron Ore	0.72	570	58027	In-house from Beneficiation plant	---
2	IronOre pellets	1.34		107994.62		
3	Coal	1.46	480	117665.78	Different Collieries of CCL	Mode: Road, Rail Approx. – 150 KM
4	Dolomitee	0.02	7.66	1611.86	Daltonganj, Jharkhand. Katni, M.P.	Mode: Road Daltonganj – 250 Km(appx.) Katni – 700 KM (appx.)
	TOTAL	**3.5**	**1057.66**	**285297.78**		

LAND USE

The total project area is about 20.04 acres (8.11 Ha.). The area will be used for construction and development of Production lines, Warehouses & Stores, Utilities, R&D, QC, Administrative Blocks and Common facilities etc., apart from the above, internal road sand green belt will be development as per the norms. About 10 acres (4.1 Ha.), after earmarking 1.0 acre for temporary ash store yard, will be developed as greenbelt.

This greenbelt will serve as a buffer between the peripheries and the industry, thereby controlling the air emissions and noise levels. The probable land use is given below in Table:

Table 3.2: Land Use of Plant Layout

SL No	TYPE OF USE	Area	
		Acres	Hectares
1	Existing Units (4 nos. Kiln of Sponge Iron)	7.01	2.84
2	Power Plant with WHRB	1.62	0.66
3	Steel Melting Shop	2.73	1.11
4	Rolling Mill	2.5	1.01
5	Iron Ore Beneficiation Plant	1.0	0.40
6	Slag Crushing Plant	0.8	0.32
7	Area Tailing Pond	0.69	0.28
8	Green Belt	10.78	4.36
9	Area for Parking	0.5	0.20
10	Vacant land	3.062	1.24
	Total Land Area	**30.692**	**12.42**

Table3.3: Emission factors of GHG gases from different energy fuel sources

Energy sources	kg CO_2/kg fuel	kg CH_4/kg fuel	kg N_2O/kg fuel
Coal	2.42	2.82E-04	4.00E-05
Electricity	0.43 kg CO2/kwh	0.0223 kg CH4/kwh	0.00342kg N2O/kwh
Natural gas	2.69	2.40E-04	5.00E-06

Methodology for Estimationg GHG Emissions

In this report, the system boundary is gate-to-gate which is from raw materials entering a coke oven to the steel leaving the continuous casting machine (Figure 4). The system boundary in this study includes the Coke oven, sintering, pelletizing, beneficiation, blast furnace, basic oxygen furnace, continuous casting, lime and dolo plant and captive power plant. The major GHG emissions i.e. CO_2, CH_4, and N_2O have been calculated and reported in the form of CO_2-equvalent. Within the defined system boundary, mass and energy inputs for the processes within the boundary are included.

CO_2 Emission:

The GHG emission has been estimated based on the mass and energy used in the individual process of steel manufacturing. The mass and energy data used in this study are specified for the major steel manufacturing processes including Coke oven, sintering, pelletizing, beneficiation, blast furnace, basic oxygen furnace, continuous casting, lime and dolo plant and captive power plant. CO_2 emissions have been calculated using carbon content data that are expressed on a mass or volume basis. (Equation no)

Mass basis: $E = A_f . F_c . E_c . \frac{44}{12}$ ---- 1

Volume basis: $E = A_f . F_{cm} . E_c . \frac{44}{12}$ ---- 2

Equation No. 1 &2: Calculating CO_2 emissions using carbon content data that are expressed on a mass or volume basis

Where:

E = Amount of CO_2 emitted (metric tons)

$A_{f,v}$ = Volume of fuel consumed (e.g., liters, gallons, m^3, etc.)

$A_{f,m}$ = Mass of fuel consumed (e.g., kg, short ton, etc.)

$F_{c,v}$ = Carbon content of fuel on a volume basis (e.g., short tons carbon / gallon)

$F_{c,m}$ = Carbon content of fuel on a mass basis (e.g., short tons carbon / short ton)

F_{OX} = Fraction oxidation factor

44/12 = the ratio of the molecular weight of carbon to that of CO_2.

$$E = A \cdot HV_f \cdot F_{c,h} \cdot F_{OX} \cdot \frac{44}{12} \quad \text{---- 3}$$

Equation No. 3: Calculating CO_2 emissions from stationary combustion sources using carbon content data expressed on an energy basis.
Where:

E = Amount of CO_2 emitted (metric tonnes)

A = Mass of fuel consumed (e.g., metric tonnes)

HV_f = Heating value of fuel (e.g., MJ/Kg or thousand Btu/lb)

$F_{c,h}$ = Carbon content of fuel on a heating value basis (e.g., short tons C/million Btu or metric tonnes C/GJ)

F_{OX} = Fraction oxidation factor

44/12 = The ratio of the molecular weight of carbon to that of CO_2.

CH_4 and N_2O emissions:

The N_2O and CH_4 emissions from Electricity Generation and Reheating Furnaces can be calculated using Equation 4.

$$E = {}_f . HHV_F . EF \cdot GWP \quad \text{---------- 4}$$

$$E = {}_f . HHV_F . ESEF \cdot GWP \quad \text{---------- 5}$$

Equation :: Calculating N_2O and CH_4 emissions

Where:

E = Amount of either N_2O or CH_4 emitted (metric tonnes CO_2-equivalent)

A_f = Amount of fuel combusted on a mass or volume basis

EF = fuel-specific emission factor

ESEF = Equipment-specific emission factor

GWP = 21 for CH_4 or 310 for N_2O

Table 3.4: Carbon contents for materials consumed in process sources

Process Materials	**Carbon Content*** (kg C/kg)
Blast Furnace Gas	0.17
Charcoal	0.91
Coal	0.67[1]
Coal tar	0.62
Coke	0.83
Coke Oven gas	0.47
Coking Coal	0.73
Direct reduced Iron (DRI)	0.02
Dolomite	0.13
EAF Carbon Electrodes	0.82[2]
EAF Charge Carbon	0.83[3]
Fuel Oil	0.86[4]

Gas Coke	0.83
Hot Briquetted iron	0.02
Limestone	0.12
Natural Gas	0.73
Oxygen Steel Furnace Gas	0.35
Petroleum Coke	0.87
Purchased pig Iron	0.04
Scrap Iron	0.04
Steel	0.01

Table 3.5: Typical Values for CH_4 & N_2O contents for materials consumed in process sources

Fuel		Lower Heating Value(LHV)/Net Calorific Value (NCV) Basis				Higher Heating Value(HHV)/Gross Calorific Value (GCV) Basis			
		kg GHG / TJ fuel		kg GHG / ton fuel		kg GHG / TJ fuel		kg GHG / ton fuel	
		CH_4	N_2O	CH_4	N_2O	CH_4	N_2O	CH_4	N_2O
Crude oil and	Crude oil	3.000	0.600	0.134	0.027	2.850	0.570	0.127	0.025

derived substances	Orimulsion	3.000	0.600	0.087	0.017	2.850	0.570	0.083	0.017
	Natural Gas Liquids	3.000	0.600	0.140	0.028	2.850	0.570	0.133	0.027
	Motor Gasoline	3.000	0.600	0.140	0.028	2.850	0.570	0.133	0.027
	Aviation Gasoline	3.000	0.600	0.140	0.028	2.850	0.570	0.133	0.027
	Jet Gasoline	3.000	0.600	0.140	0.028	2.850	0.570	0.133	0.027
	Jet Kerosene	3.000	0.600	0.139	0.028	2.850	0.570	0.132	0.026
	Other Kerosene	3.000	0.600	0.138	0.028	2.850	0.570	0.131	0.026
	Shale oil	3.000	0.600	0.120	0.024	2.850	0.570	0.114	0.023
	Gas/.Diesel oil	3.000	0.600	0.136	0.027	2.850	0.570	0.129	0.026
	Residual Fuel oil	3.000	0.600	0.128	0.026	2.850	0.570	0.121	0.024
	Liquified Petroleum Gases	1.000	0.100	0.053	0.005	0.900	0.090	0.047	0.005
	Ethane	1.000	0.100	0.052	0.005	0.900	0.090	0.046	0.005

	Naphtha	3.000	0.600	0.141	0.028	2.850	0.570	0.134	0.027
	Bitumen	3.000	0.600	0.127	0.025	2.850	0.570	0.121	0.024
	Lubricants	3.000	0.600	0.127	0.025	2.850	0.570	0.121	0.024
	Petroleum coke	3.000	0.600	0.103	0.021	2.850	0.570	0.098	0.020
	Refinery feedstocks	3.000	0.600	0.136	0.027	2.850	0.570	0.129	0.026
	Refinery Gas	1.000	0.100	0.055	0.006	0.900	0.090	0.050	0.005
	Paraffin waxes	3.000	0.600	0.127	0.025	2.850	0.570	0.121	0.024
	White Spirit & SBP	3.000	0.600	0.127	0.025	2.850	0.570	0.121	0.024
	Other petroleum products	3.000	0.600	0.127	0.025	2.850	0.570	0.121	0.024
Coal and derived products	Anthracite	1.000	1.500	0.028	0.042	0.950	1.425	0.027	0.040
	Coking coal	10.000	1.500	0.297	0.045	9.500	1.425	0.282	0.042
	Other bituminous coal	10.000	1.500	0.272	0.041	9.500	1.425	0.258	0.039

	Sub-bituminous coal	10.000	1.500	0.199	0.030	9.500	1.425	0.189	0.028
	Lignite	10.000	1.500	0.125	0.019	9.500	1.425	0.119	0.018
	Oil shale and tar sands	10.000	1.500	0.094	0.014	9.500	1.425	0.089	0.013
	Brown coal briquettes	10.000	1.500	0.218	0.033	9.500	1.425	0.207	0.031
	Patent fuel	10.000	1.500	0.218	0.033	9.500	1.425	0.207	0.031
	Coke oven coke & lignite coke	10.000	1.500	0.297	0.045	9.500	1.425	0.282	0.042
	Gas coke	1.000	0.100	0.030	0.003	0.950	0.095	0.028	0.003
	Coal tar	10.000	1.500	0.295	0.044	9.500	1.425	0.280	0.042
	Gas works gas	1.000	0.100	0.043	0.004	0.900	0.090	0.039	0.004
	Coke oven gas	1.000	0.100	0.043	0.004	0.900	0.090	0.039	0.004
	Blast furnace gas	1.000	0.100	0.003	0.000	0.900	0.090	0.002	0.000
	Oxygen steel furnace gas	1.000	0.100	0.008	0.001	0.900	0.090	0.007	0.001

Natural Gas	Natural Gas	1.000	0.100	0.053	0.005	0.900	0.090	0.051	0.005
Non-biomass waste	Municipal wastes (non-biomass fraction)	30.000	4.000	0.316	0.042	28.500	3.800	0.300	0.040
	Industrial wastes	30.000	4.000	N/A	N/A	28.500	3.800	N/A	N/A
	Waste oils	30.000	4.000	1.269	0.169	28.500	3.800	1.206	0.161
Peat	Peat	2.000	1.500	0.021	0.015	1.900	1.425	0.020	0.015
Biomass waste	Wood/Wood waste	30.000	4.000	0.493	0.066	28.500	3.800	0.468	0.062
	Sulphite lyes (Black liqour)	3.000	2.000	0.037	0.025	2.850	1.900	0.035	0.024
	Other primary solid biomass fuels	30.000	4.000	0.366	0.049	28.500	3.800	0.348	0.046
	Charcoal	200.000	4.000	6.211	0.124	190.000	3.800	5.900	0.118
	Biogasoline	3.000	0.600	0.085	0.017	2.850	0.570	0.081	0.016
	Biodiesels	3.000	0.600	0.085	0.017	2.850	0.570	0.081	0.016

	Other liquid biofuels	3.000	0.600	0.087	0.017	2.850	0.570	0.082	0.016
	Landfill gas	1.000	0.100	0.056	0.006	0.900	0.090	0.050	0.005
	Sludge gas	1.000	0.100	0.056	0.006	0.900	0.090	0.050	0.005
	Other biogas	1.000	0.100	0.056	0.006	0.900	0.090	0.050	0.005
	Municipal wastes (biomass fraction)	30.000	4.000	0.366	0.049	28.500	3.800	0.348	0.046

Chapter-4

Action plan for Carbon off-setting

Re-use of Steel Scrap in Basic Oxygen Furnace

Scrap is a term used to describe steel that has generated during the manufacture of steel products. While the term 'scrap' may lead one to believe this is a waste product, it is actually a valuable raw material used in every steelmaking process. In blast furnace (BF) steelmaking, each charge of the basic oxygen furnace, in which carbon carbon-rich pig iron is refined into crude steel, typically contains 8%-10% scrap. Scrap acts as a cooling agent, absorbing excess heat from the exothermic decarburization process, and also as a source of iron units. Reuse of scrap in BOF helps reducing greenhouse gas emissions.

Table4.1: Heating and cooling reactions of BOF

Heating Reactions	Cooling Reactions
$c + \frac{1}{2} o_2 \rightarrow co$	$Fe_2O_3 + 3C \rightarrow 2Fe + 3CO$
$co + \frac{1}{2} o_2 \rightarrow co_2$	
$Si + o_2 \rightarrow SiO_2$	$Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$
$Fe + \frac{1}{2} o_2 \rightarrow FeO$	
$2Mn + o_2 \rightarrow 2MnO$	
$4P + 5o_2 \rightarrow 2P_2 O_5$	

Reuse of internal heat for power generation

The proposed plant is designed for optimum use of the recovered energy of hot off gases from major units such as Blast furnace, Basic oxygen furnace and coke oven plant. A plant is designed to integrate 74 % of the heat generated from coke oven gas to sinter plant, pellet plant & continuous casting machine. Approx. 52 % of the total heat generated from blast furnace will be reused in blast furnace & 20 % of the generated heat will be integrated to sinter plant, pellet plant & continuous casting machine. The surplus gases available in these units will be re-used for power generation. Out of 600 MW, 293 MW power will be generated from internal process heat.

CO_2 capture

The uses of coal for generation of 600 MW electricity produce approximately 5 MT of CO_2 annually. CPP's are one of the major contributors of CO_2 emissions in any steel plant. In view to limit the release of CO_2 in atmosphere it is necessary to capture CO_2. There are several approaches for CO_2 capture out of which amine based CO_2 absorption systems are the most suitable for combustion based power plants. The amine based CO_2 absorption is easy to use and can be retrofitted to existing power plants. Absorption processes are based on thermally generable solvents, which havea strong affinity for CO_2. They are regenerated at elevated temperature. In view to limit the CO_2 release, It is suggested to install amine based CO_2 absorption unit at 600 MW CPP.

The equilibrium reactions describing the solution chemistry of CO_2 absorption with MEA

$$MEA + H_3O^+ : \mathrm{MEA} + H_2\mathrm{O} \quad \text{(amine protonation)}$$

$$CO_2 + 2H_2O^+ : + H_3O^+ + HCO^{3-} \quad \text{(bicarbonate formation)}$$

$HCO_3^- + H_2O : + H_3O^+ + CO^{2-}_3$ (carbonate formation)

$MEA + HCO_3^- : + \mathrm{MEACO}O^- + H_2O$ (carbonate formation)

$2H_2O : + H_3O^+ + OH^-$ (water hydrolysis)

Chapter - 5

Terrestrial Sequestration

Terrestrial sequestration involves the capture and storage of carbon dioxide by plants and the storage of carbon in soil. During photosynthesis, carbon from atmospheric carbon dioxide is transformed into components necessary for plants to live and grow. As part of this process, the carbon present in the atmosphere as carbon dioxide becomes part of the plant: a leaf, stem, root, etc. Long-lived plants like trees might keep the carbon sequestered for a long period of time.

The existing greenbelt sure sequesters some amount of the carbon emitted through then industrial process. The greenbelt is spread over an area of 6.6 acres with total plantation of 4068 consisting of trees and shrubs. As the industry falls under the heavily polluted area, greenbelt needs to be enhanced and more trees are to be planted. Hence more carbon can be sequestered. New trees are suggested for plantation to cover approx. 40% of the total Plant Area.

Table 5.1: shows the existing greenbelt and its required expansion during the expansion phase:

Sl.no	Heading	Existing	Additional	Total
1.	Total Area	20.04 Acres	34.31 Acres	54.35 Acres
2.	Existing Greenbelt	6.6 Acres	---	6.6 Acres
3.	Existing no.of plants	4068	---	4068
4.	Greenbelt Enhancement Area	---	15.14 Acres	15.14 Acres
5.	No. of trees to be planted	---	9200	9200

Formula used for determination of Carbon sequestered by Trees

Step 1: Determine the total green weight of the tree:

The green weight is the weight of the tree when it is alive. First, you have to calculate the green weight of the above-ground weight as follows:

$W_{above\text{-}ground} = 0.25\ D^2\ H$ (for trees with D<11)
$W_{above\text{-}ground} = 0.15\ D^2\ H$ (for trees with D>11)
$W_{above\text{-}ground}$ = Above-ground weight in pounds
D = Diameter of the trunk in inches
H = Height of the tree in feet

The root system weight is about 20% of the above-ground weight. Therefore, to determine the total green weight of the tree, multiply the above-ground weight by 1.2:

$W_{total\ green\ weight} = 1.2 * W_{above\text{-}ground}$

Step 2: Determine the dry weight of the tree
The average tree is 72.5% dry matter and 27.5% moisture. Therefore, to determine the dry weight of the tree, multiply the total green weight of the tree by 72.5%.

$W_{dry\ weight} = 0.725 * W_{total\ green\ weigh}$

Step 3: Determine the weight of carbon in the tree
The average carbon content is generally 50% of the tree's dry weight total volume. Therefore, in determining the weight of carbon in the tree, multiply the dry weight of the tree by 50%.

$W_{carbon} = 0.5 * W_{dry\ weight}$

Step 4: Determine the weight of carbon dioxide sequestered in the tree
CO2 has one molecule of Carbon and 2 molecules of Oxygen. The atomic weight of Carbon is 12 (u) and the atomic weight of Oxygen is 16 (u). The weight of CO2 in trees is determined by the ratio of CO2 to C is 44/12 = 3.67. Therefore, to determine the weight of carbon dioxide sequestered in the tree, multiply the weight of carbon in the tree by 3.67.

$W_{carbon\text{-}dioxide} = 3.67 * W_{carbon}$

Selection of the trees is based on:

1. Tolerance towards pollution.
2. Fast Growth
3. High sequestration potential.
4. Indigenously growing species.
5. No exotic species has been suggested.
6. Average Growth period to be three years.
7. No vulnerable or endangered species has been chosen.

Plantation Plant

Suggested plants are to be planted in a 3 tier system.

Tier I	Boundary Wall, 10-20 m width on all sides.	4500
Tier II	Administrative and other Buildings	2500
Tier III	Outside the boundary wall	2000

As per the study conducted the total carbon emissions mounts to 80593 MT for the year 2021-2022. In this respect the sequestered carbon is calculated to be 1.67% approximately. List of existing plant is attached as Annexure1 for >10 years, 5-10 years, < 5 years. Therefore a suitable plan has been suggested for plantation attempting to take this sequestration to the rise of 6.88% approximately in an average period of 3 Years (after completion of the Tier III Plantation). Plantation plan is attached as Annexure 1. When it comes to sequestration through afforestation, it is the best possible way to sequester carbon and reap other benefits as well. However sequestration has its limits, plantation within the plant limits the area of plantation and therefore sequestration is limited. However developing thicker greenbelt outside the plant boundaries around 10-20 m allows more sequestration. Keeping in mind the existing plantation also adds Significantly to the sequestration. Maintenance of the Greenbelt is another important aspect that can significantly impact the health of the plants, leading to maximum healthy growth. During construction phase due to excessive dust, a decline in survival rate was observed. It is hence suggested to go for expansion post construction.

Chapter - 6

Conclusions

The CO_2 emission intensity in Aloke Steel Industries Pvt. Ltd. has been calculated using ISO 14404 which is proposed by world steel Association. The CO_2 emission intensity in Aloke Steel Industries Pvt. Ltd is in optimum range and not harmful for environment. Still the plant has made a proposed plan to further reduce the CO_2 emission intensity. The Indian DRI industry consumes 8.8% of national annual industrial energy use and emits 11% of national annual CO2 emissions. This represents a significant portion of the national contribution in terms of emissions and energy use. it is crucial to carefully examine the DRI industry for energy use and emissions abatement measures. The growing iron and steel industry in India is one of the key sectors to reform in order to meet the country's NDCs to the Paris Agreement, and the anticipated doubling of DRI capacity from 50 MTPA in 2018-19 to 114 MTPA by 2030-31 is further indication of the importance of this sector.

The iron making process is of key focus for reducing energy use, GHG, SOx and PM2.5 emissions. There is a large contribution of NOx emissions from transport at present.

The DRI process metrics suggest that in terms of efficiency, there is a potential for 20-30% improvement on average when considering the best technologies available. This can be brought about by improving the raw material quality, proper selection of materials and process parameters and waste-heat recovery, among others. To improve raw material quality, it is suggested to explore the expansion of domestic beneficiation capacity (particularly for coal) and reduce the import share to bring a gross benefit of up to 5% in GHG emissions and 6% in energy use. Newer and more efficient beneficiation technologies could be adopted to ensure sustainable growth. Land transport using trucks can be reduced in favor of railways to improve transport efficiency and reduce overall emissions by 1-2%. Improving regulations by revising the 12-year old emissions norms and bettering the monitoring framework by inducting CEMS can go a long way in preventing plants from flouting norms without detection and reprehension. Extending the PAT scheme with stricter targets and encouragement of adopting higher productivity, WHR systems and also for fuel switching could be greatly beneficial in accelerating development. Over the next decade, however, considering the broad limitations of raw material quality

Affordable natural gas network may be of significant potential for reduction in GHG emission from the DRI industry. In addition, capacity building must be taken up early on for accelerated hydrogen steel adoption. By enhancing research and development and deploying pilot production facilities, the overall infrastructure for a hydrogen economy can be stably built for ensured introduction of hydrogen-based steel in the coming decades. The hydrogen economy can revolutionize the industry by reducing GHG emissions by up to 94%.

In conclusion, short-term measures can be taken to increase coal-DRI performance to BAT standards. Over the medium term, natural gas adoption can be explored, whilst a suitable long-term goal is to introduce hydrogen and negate 300 million tonnes of GHG emissions, to enable truly sustainable development. A robust policy must be developed, and relevant stakeholders must be engaged in a timely manner to accelerate the GHG emission of this important industry and thus sustaining the economy over the long term.

CO_2 emissions data submission form for worldsteel sectoral approach

*Please do not change downloaded form

Mandatory to fill-in
Stainless steel only
Fill-in if available
Protected calculation
Fixed value

Site:	AIPL022
Organization:	AIPL
Year(Report period):	2022

Site structure (the number of operated units)

Coke battery		BF > 1000 m^3		Open hearth		Cold rolling		A&P lines	
Sinter plant		100<BF<1000		Hot rolling		HDG lines		Bright A lines	
Pellet plant		BF < 100 m^3		Lime kilns		EG lines		Batch Annealing	
Gas DRI		BOF shops		Oxygen plant		Tining lines		Argon/Oxy Decarb	
Coal DRI		EAF units		Power plant		Smelting Reduction		Vacuum Oxy Decarb	

BASIC information

Total coke production (dry t)	
Sinter production (t)	
Pellet production (t)	
Hot metal production (t)	
DRI production (t)	80,593
BOF crude steel production (t)	
Open Hearth crude steel production (t)	0
EAF crude steel production (t)	0
Carbon crude steel production (t)	0
Hot rolled steel production (t)	
Austenitic stainless steel production (t)	
Ferritic stainless steel production (t)	
Martensitic stainless steel production (t)	
Other stainless steel production (t)	
Stainless steel production (t)	0
Total Steel Production (t)	**0**
Total Ironmaking slag production (t)	
Total steelmaking slag production (t)	
Granulated Ironmaking slag production (t)	
Granulated Steelmaking slag production (t)	
Total Granulated slag production (t)	0
Hot rolled stainless steel production (t)	
Cold rolled stainless steel production (t)	
Iron supply from upstream (t)	
Purchased carbon steel scraps (t)	
Purchased stainless steel scraps (t)	
Home carbon steel scraps (t)	
Home stainless steel scraps (t)	
Cr-Ni type scraps (%)	
Cr type scraps (%)	
Burnt lime production (t)	
Power generation (MWh)	0
Data verified by external body	Yes

Electricity grid Information

Source of information	Energy Equivalent GJ/MWh	Upstream CO_2 value t CO_2/MWh
Global average grid mix	9.800	0.504
IEA yearly update global grid mix	9.800	0.476
National or regional regulator mix		
Site power supply contract mix		

			Site data				Conversion factors		Calculation results				
	Materals /Energies	Unit	Purchased Procured	Sold Delivered	C content Site measurement t C/unit	Energy Equivalent GJ/unit	Emission Factor t CO_2/unit	Upstream CO_2 value t CO_2/unit	Scope 1 Direct emissions t CO_2	Scope 1.1 emissions t CO_2	Scope 2 emissions t CO_2	Scope 3 emissions t CO_2	Total Energy TJ
	Iron ore	dry t	58,027		0.010		0.037		2,147			-	-
	Coking coal	dry t			0.835	32.200	3.060		-			-	-
	BF injection coal	dry t			0.806	31.100	2.953		-			-	-
	Sinter/BOF coal	dry t			0.760	29.300	2.785		-			-	-
	Steam coal	dry t	1,17,666		0.672	25.900	2.462		2,89,693			-	3,048
	EAF coal	dry t			0.889	30.100	3.257		-			-	-
	SR/DRI coal	dry t			0.806	31.100	2.953		-			-	-
	Coke	dry t			0.889	30.100	3.257	0.224	-			-	-
	Charcoal	dry t		55,545		18.800			-			-	- 1,044
New	Petroleum coke	t			0.850	31.935	3.115		-			-	-
New	Used plastic	t				46.000	2.416		-			-	-
New	Used tires	t				35.000	2.199		-			-	-
	Heavy oil	m^3				37.700	2.907	0.276	-			-	-
	Light oil	m^3				35.100	2.601	0.247	-			-	-
	Kerosene	m^3				34.700	2.481	0.247	-			-	-
	LPG	t				47.300	2.985		-			-	-
	LNG	k.m^3N			0.550	35.900	2.015	0.665	-			-	-
	Natural gas	k.m^3N			0.550	35.900	2.015	0.000	-			-	-
New	Green hydrogen	t				120.000		0.000	-			-	-
New	Blue hydrogen	t				120.000		1.800	-			-	-
New	Grey hydrogen	t				120.000		19.800	-			-	-
New	Fossil free biogas	t			0.751	50.400		0.000	-			-	-
	Limestone	dry t			0.120		0.440		-			-	-
	Burnt lime	t				4.500		0.950	-			-	-
	Crude dolomite	dry t	1,612		0.130		0.476		767			-	-
	Burnt dolomite	t				4.500		1.100	-			-	-
	Sinter	t				2.450		0.262	-			-	-
	Pellets	t	1,07,995			2.100		0.137	-			14,795	227
	EAF electrodes	t					3.663	0.650	-			-	-
New	Low carbon iron units	t			0.047	20.900	0.172	1.855	-			-	-
	Pig Iron	t	0		0.047	20.900	0.172	1.855	-			-	-
	Cold Iron	t			0.047	20.900	0.172	1.855	-			-	-
	Ni pig iron	t			0.005		0.018	5.200	-			-	-
New	Charcoal based pig iron	t			0.047	20.900	0.172	1.855	-			-	-
New	Biomass	t			0.476	15.600		0.000	-			-	-
	Gas based DRI	t			0.020	14.100	0.073	0.780	-			-	-
	Coal based DRI	t		0	0.020	17.900	0.073	1.210	-			-	-
New	Low carbon DRI	t			0.020	14.100	0.073	0.780	-			-	-
	Ferro-Nickel	t			0.010		0.037	8.676	-			-	-
	Nickel oxides	t			0.001		0.004	20.279	-			-	-
	Nickel metal	t			0.001		0.004	13.579	-			-	-
	Ferro-Chromium	t			0.075		0.275	5.987	-			-	-
	Molybdenum oxides	t			0.001		0.004	6.500	-			-	-
	Ferro-Molybdenum	t			0.005		0.018	8.500	-			-	-
	Ferro-Manganese	t			0.050		0.183	2.789	-			-	-
New	Ferro-Silicon	t			0.001		0.004	4.000	-			-	-
New	Silico-Manganese	t			0.005		0.018	1.400	-			-	-
New	Silicon (Metal)	t			0.001		0.004	5.000	-			-	-
	Electricity	MWh	5,855			9.800		0.504	-		2,951		57
	Steam	t				3.800		0.195	-		-		-
	Oxygen	k.m^3N				6.900		0.355	-			-	-
	Nitrogen	k.m^3N				2.000		0.103	-			-	-

	Argon	$k.m^3N$				2.000		0.103	-			-	-
	Coke oven gas	$k.m^3N$			0.228	19.000	0.835	0.977	-	-	-		-
	Blast furnace gas	$k.m^3N$			0.243	3.300	0.890	0.170	-	-	-		-
	BOF gas	$k.m^3N$			0.413	8.400	1.513	0.432	-	-	-		-
New	Waste heat	GJ				1.000		0.051	-		-		-
New	Ethanol	m^3			0.410	23.575		1.494	-			-	-
New	Methanol	m^3			0.293	15.662		1.369	-			-	-
New	Ammonia	t				37.500		1.600	-			-	-
	BF slag	t		24,350				0.550	-			- 13,393	-
	BOF slag	t		0				0.300	-			-	-
New	EAF slag	t						0.300	-			-	-
	CO2 to external use	t					1.000		-			-	-
New	Permanently sequestered C	t					1.000		-			-	-
	Coal tar	t				37.000	3.389		-			-	-
	Benzole	t				40.570	3.382		-			-	-
	w/o undecided credits	CO2 Intensity	-	tCO2/tCrudeSteel	Grand Total	**3,10,353**	tCO2	Sub Total	**2,92,607**	**-**	**2,951**	**14,795**	
	w/ undecided credits	CO2 Intensity	-	tCO2/tCrudeSteel	Grand Total	2,96,960.00	tCO2	Sub Total	2,92,607	-	2,951	1,402	2,288
		CI by Slags	-	tCO2/tCrudeSteel	Slags	- 13,393.00	tCO2	Slags	-	-	-	- 13,393	
		CI External CO2	-	tCO2/tCrudeSteel	External CO2	-	tCO2	External CO2	-	-	-	-	
		Sequestered CI	-	tCO2/tCrudeSteel	Sequestered CO2	-	tCO2	Sequestered CO2	-	-	-	-	
		CCU Products	-	tCO2/tCrudeSteel	CCU Products	-	tCO2	CCU Products	-	-	-	-	
	Energy Intensity		-	GJ/tCrudeSteel									

Useful unit conversions

Volume	1	scf	0.026862	m3N
Volume	1	gal	0.003785	m3
Weight	1	lb	0.453592	kg
Weight	1	nt	0.907184	mt
Energy	1	mmBTU	1.054349	GJ
Energy	1	mBTU/scf	39.251136	MJ/m3N
Energy	1	mBTU/nt	1.162222	MJ/mt
Energy	1	BTU/gal	0.278530	MJ/m3

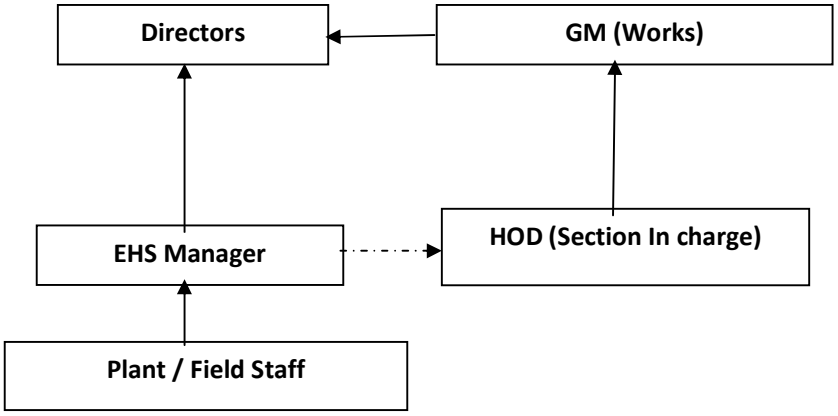
CO2 Intensity = (292607+2951-14795)/80593 =3.48

GREEN BELT PLANTATION PLAN FOR ASIPL AND ITS SEQUESTRATION POTENTIAL

Common Name	Plant Spieces	Family	Number	Average Height above the ground(feet)	Average Diameter of the trunk (inches)	Weight of the tree above ground (pounds)	Total Weight of the tree (pounds)	Dry weight of the tree (pounds)	Weight of the carbon present (pounds)	Weight of carbon dioxide sequestered (pounds)	Weight of the carbon sequestered (tonne)	Weight of the carbon sequestered (tonne/annum)
TREES												
False Ashoka	Monoon Longifolium	Annonaceae	500	49	20	2450000	2940000	2131500	1065750	3911302.5	1777.864773	592.6215909
Akashmoni	Acacia auriculiformis	Fabaceae	150	78	25	1828125	2193750	1590468.75	795234.375	2918510.156	1326.595526	442.1985085
Mimosa	Acacia farnesiana	Fabaceae	75	82	18	498150	597780	433390.5	216695.25	795271.5675	361.4870761	120.495692
Chiku	Achrassapota	Sapotaceae	150	75	20	1125000	1350000	978750	489375	1796006.25	816.3664773	272.1221591
	Ailanthus excels	Simaroubaceae	50	65	26.3	561998.125	674397.75	488938.3688	244469.1844	897201.9067	407.8190485	135.9396828
Siris	Albizia amara	Fabaceae	300	64	45	9720000	11664000	8456400	4228200	15517494	7053.406364	2351.135455
Frywood	Albizia lebbeck	Fabaceae	45	70	27	574087.5	688905	499456.125	249728.0625	916501.9894	416.5918134	138.8639378
Karoi	Albizia procera	Fabaceae	35	42	54	1071630	1285956	932318.1	466159.05	1710803.714	777.6380516	259.2126839
Milkwood	Alstonascholaris	Apocynaceae	45	36	12	58320	69984	50738.4	25369.2	93104.964	42.32043818	14.10681273
Neem	Azadirachtaindica	Meliaceae	300	55	19	1489125	1786950	1295538.75	647769.375	2377313.606	1080.597094	360.1990313
Bidi leaf	Bauhinia recemosa	Fabaceae	75	16	10	30000	36000	26100	13050	47893.5	21.76977273	7.256590909
White Orchid	Bauhinia acuminata	Fabaceae	55	7	12	13860	16632	12058.2	6029.1	22126.797	10.057635	3.352545
Butterfly Tree	Bauhinia purpurea	Fabaceae	65	15	6	8775	10530	7634.25	3817.125	14008.84875	6.367658523	2.122552841
Shisham	Dalbergia sisoo	Fabaceae	150	76	70	13965000	16758000	12149550	6074775	22294424.25	10133.8292	3377.943068
Mango	Mangifera indica	Anacardiaceae	500	60	25	4687500	5625000	4078125	2039062.5	7483359.375	3401.526989	1133.84233
Chinaberry	Melia azadirachta	Meliaceae	50	50	24	360000	432000	313200	156600	574722	261.2372727	87.07909091
Yellow Flame	Peltophorumpterocarpum	Fabaceae	75	60	35	1378125	1653750	1198968.75	599484.375	2200107.656	1000.048935	333.3496449
Manila Tamarind	Pithecellobium ducle	Fabaceae	75	45	20	337500	405000	293625	146812.5	538801.875	244.9099432	81.63664773
Java Plum	Syzygium cumini	Myrtaceae	45	47	25	330468.75	396562.5	287507.8125	143753.9063	527576.8359	239.8076527	79.93588423
Tulip Tree	Thespesia populnea	Malvaceae	45	62	32	714240	857088	621388.8	310694.4	1140248.448	518.2947491	172.7649164
Teak	Gmelina arborea	Lamiaceae	500	100	14	2450000	2940000	2131500	1065750	3911302.5	1777.864773	592.6215909
Indian Bael	Aegle marmelos	Rutaceae	30	26	8	12480	14976	10857.6	5428.8	19923.696	9.056225455	3.018741818
Banyan	icus benghalens	Moraceae	35	87	112	9549120	11458944	8307734.4	4153867.2	15244692.62	6929.405738	2309.801913
			3350								38614.86321	12871.62107
Flowering trees												
Golden Shower	Cassia Fistula	Fabaceae	55	40	36	712800	855360	620136	310068	1137949.56	516.076898	172.0256327
Champak	Michelia champaca	Magnoliaceae	50	85	62	4084250	4901100	3553297.5	1776648.75	6520300.913	2957.052568	985.6841893
Coral Tree	Erythrina Blakei	Fabaceae	45	65	45	1480781.25	1776937.5	1288279.688	644139.8438	2363993.227	1072.105772	357.3685906
Mango-pine	Barringtonia Acutangula	Lecythidaceae	50	82	26	692900	831480	602823	301411.5	1106180.205	501.6690272	167.2230091
Yellow elder	Tecoma stans	Bignoniaceae	40	10	16	25600	30720	22272	11136	40869.12	18.5347483	6.178249433
Bottlebrush	Melaleuca citrina	Myrtaceae	60	25	24	216000	259200	187920	93960	344833.2	156.3869388	52.12897959
			300								5221.825952	1740.608651
												14612.22972

Annexure – 9

Organization of Environment Management Cell



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CIN: U74999JH2018PTC011125

ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED
NABL Accredited & JSPCB Certified Lab. for Environmental Pollution Monitoring & Analysis
B-790

TEST REPORT

Test Report No.	**: ELES/RNC/2023/1000**	**Report Release Date**	**: 11.04.2023**
Application No.	**: 15893961**	**Application Date**	**: 24.03.2023**

CUSTOMER DETAILS		**SAMPLE DETAILS**	
Customer Name	: Aloke Steels Industries Private Limited	Sampling Date	: 03.04.2023 to 04.04.2023
		Sample Received Date	: 05.04.2023
		Type of Sample	: Ambient Air
Address	: Vill- Budhakhap, PO- Digwar, Ramgarh, Dist- Ramgarh.	Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
Plant Status	: Operational	Period of Analysis	: 05.04.2023 to 11.04.2023

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 64	4	Weather Condition	: Clear

Parameters			**Particulate Matter (PM10)**		**Fine Particulate Matter (PM2.5)**		**Sulphur Di-Oxide (SO_2)**		**Nitrogen Di-Oxide (NO_2)**	
Test Protocol			IS 5182 (P-23)		IS 5182 (P-24)		IS 5182 (P-2)		IS 5182 (P-6)	
Locations	Limit	Unit	100	µg/m³	60	µg/m³	80	µg/m³	80	µg/m³
Near Main Gate	09:14 – 13:22		90		45		13.8		25.6	
	13:22 – 17:09						15.2		31.3	
	17:16 – 21:05		73				16.7		24.5	
	21:05 – 01:01						11.2		20.6	
	01:07 – 05:11		84				13.5		19.2	
	05:11 – 09:05						16.8		28.7	
Sample ID ELES/RNC/PCB/AA/0523	Average		**82**		**45**		**14.5**		**25.0**	
Near Occupational Health Center	09:29 – 13:25		69		36		15.3		24.8	
	13:25 – 17:13						10.7		28.3	
	17:20 – 21:13		58				13.8		23.7	
	21:13 – 01:19						7.2		18.8	
	01:25 – 05:21		65				10.8		17.2	
	05:21 – 09:22						12.9		26.4	
Sample ID ELES/RNC/PCB/AA/0524	Average		**64**		**36**		**11.8**		**23.2**	

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
HATIA, RANCHI-834003 (JHARKHAND)
Email: info@elespl.co.in; eles.ranchi@gmail.com
Website : www.elespl.co.in
GST NO:- 20AAECE9713D1Z4 ✆ : 0651-2290103, 9931289451
CIN: U74999JH2018PTC011125

ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 CERTIFIED
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Environmental Pollution Monitoring & Analysis
B-790

TEST REPORT

Test Report No.	**: ELES/RNC/2023/1000**	**Report Release Date**	**: 11.04.2023**
Application No.	**: 15893961**	**Application Date**	**: 24.03.2023**

Parameters			**Particulate Matter (PM10)**		**Fine Particulate Matter (PM2.5)**		**Sulphur Di-Oxide (SO_2)**		**Nitrogen Di-Oxide (NO_2)**	
Test Protocol			IS 5182 (P-23)		IS 5182 (P-24)		IS 5182 (P-2)		IS 5182 (P-6)	
Locations	Limit	Unit	100	$\mu g/m^3$	60	$\mu g/m^3$	80	$\mu g/m^3$	80	$\mu g/m^3$
North West Side of Plant	09:44 – 13:38		93		48		16.9		25.8	
	13:38 – 17:33						15.4		28.2	
	17:40 – 21:44		70				18.5		30.5	
	21:44 – 01:31						11.7		20.3	
	01:37 – 05:42		88				10.2		23.5	
	05:42 – 09:36						17.8		29.8	
Sample ID ELES/RNC/PCB/AA/0525	Average		**84**		**48**		**15.1**		**26.4**	

Authorized Signatory
SANDIP BERA
SENIOR MANAGER
ELES PVT. LTD.

******End of Report******

Authorized Signatory
Dr. Deependra Kumar Sinha
Ph. D. Environmental Engg.
ELES Pvt. Ltd. Technical Manager

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND)
Email: info@elespl.co.in; eles.ranchi@gmail.com
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GST NO:- 20AAECE9713D1Z4 ✆ : 0651-2290103, 9931289451
CIN: U74999JH2018PTC011125

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B-790

TEST REPORT

Test Report No.	**: ELES/RNC/2023/1001**	**Report Release Date**	**: 11.04.2023**
Application No.	**: 15893961**	**Application Date**	**: 24.03.2023**

CUSTOMER DETAILS		**SAMPLE DETAILS**	
Customer Name	: Aloke Steels Industries Private Limited	Sampling Date	: 03.04.2023 to 04.04.2023
		Sampling Received Date	: 05.04.2023
		Type of Sample	: Ambient Noise
Address	: Vill- Budhakhap, PO- Digwar, Ramgarh, Dist- Ramgarh.	Sampling procedure	: ELES/DOC/SMPL/03
		Sample Drawn By	: ELES Pvt. Ltd.
Plant Status	: Operational	Period of Analysis	: 05.04.2023 to 11.04.2023

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 64	4	Weather Condition	: Clear

Location	Unit	Test Protocol	Result			Regulatory Limit
			L_{Max}	L_{Min}	L_{eq}	
Near Main Gate Sample ID: ELES/RNC/PCB/AN/0526	dB(A)	IS 9989:1981, RA 2020	74.4	48.1	**65**	75 dB(A) Day Time & 70 dB(A) Night Time
			L_{Max}	L_{Min}	L_{eq}	
Near Occupational Health Center Sample ID: ELES/RNC/PCB/AN/0527	dB(A)	IS 9989:1981, RA 2020	69.4	41.0	**61**	
			L_{Max}	L_{Min}	L_{eq}	
North West Side of Plant Sample ID: ELES/RNC/PCB/AN/0528	dB(A)	IS 9989:1981, RA 2020	71.8	42.5	**63**	

Authorized Signatory
SANDIP BERA
SENIOR MANAGER
ELES PVT. LTD.

****End of Report****

Authorized Signatory
Dr. Deependra Kumar Sinha
Ph. D. Environmental Engg.
ELES Pvt. Ltd. Technical Manager

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
HATIA, RANCHI-834003 (JHARKHAND)
Email: info@elespl.co.in; eles.ranchi@gmail.com
Website : www.elespl.co.in
GST NO:- 20AAECE9713D1Z4 ✆ : 0651-2290103, 9931289451
CIN: U74999JH2018PTC011125

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JSPCB B-790

TEST REPORT

Test Report No.	**: ELES/RNC/2023/1003**	**Report Release Date**	**: 11.04.2023**
Application No.	**: 15893961**	**Application Date**	**: 24.03.2023**

CUSTOMER DETAILS		**SAMPLE DETAILS**	
Customer Name	: Aloke Steels Industries Private Limited	Sample Ref. No.	: ELES/RNC/PCB/SM/0543
		Location	: Stack- 02 (Kiln 3&4)
		Sampling Date	: 04.04.2023
Address	: Vill- Budhakhap, PO- Digwar, Ramgarh, Dist- Ramgarh.	Sample Received Date	: 06.04.2023
		Type of Sample	: Flue Gas
		Sampling Procedure	: ELES/DOC/SMPL/02(A)
Plant Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 06.04.2023 to 11.04.2023	Sample Condition	: Sealed & Preserved

GENERAL INFORMATION		
1	Particular of the Plant	: Sponge Iron
2	Emission Due to	: Burning of Coal
3	Stack Connected to	: ESP
4	Material of Construction of Duct	: M S
5	Stack Height from Ground Level (m)	: 55
6	Height of Sampling Port from Ground Level (m)	: 27
7	Inner Diameter of Stack at Sampling Point (m)	: 1.8
8	Shape of the Stack	: Circular
9	Working Load of the Stack	: N/A
10	Pollution Control System	: ESP
11	Ladder & Platform	: Permanent

FUEL CHARACTERISTICS DETAILS		
1	Type of Fuel Used	: Coal
2	Fuel Consumption	: 3.5 TPH/Each Kiln
3	Calorific Value of Fuel (Kcal/Kg)	: N/A

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND)
Email: info@elespl.co.in; eles.ranchi@gmail.com
Website : www.elespl.co.in
GST NO:- 20AAECE9713D1Z4 ✆ : 0651-2290103, 9931289451
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B-790

TEST REPORT

Test Report No.	**: ELES/RNC/2023/1003**	**Report Release Date**	**: 11.04.2023**
Application No.	**: 15893961**	**Application Date**	**: 24.03.2023**

Parameter	Unit	Test Protocol	Result
Particulate Matter (PM)	mg/Nm^3	IS 11255(Part 1):1985; RA 2019	**84**
Sulphur Di-Oxide (SO_2)	mg/Nm^3	USEPA 6C : 2017	**225**
Oxides of Nitrogen (NO_x)	mg/Nm^3	USEPA 7E : 2020	**69**
Flue Gas Temperature	^oC	IS 11255 (Part 3): 2008; RA 2018	**181**
Barometric Pressure	mmHg	IS 11255 (Part 3): 2008; RA 2018	**738**
Velocity of Flue Gas	m/sec	IS 11255 (Part 3): 2008; RA 2018	**17.97**
Quantity of Gas Flow	Nm^3/hr	IS 11255 (Part 3): 2008; RA 2018	**129514**

Authorized Signatory
SANDIP BERA
SENIOR MANAGER
ELES PVT. LTD.

****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D. Environmental Engg.
ELES Pvt. Ltd. Technical Manager

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
HATIA, RANCHI-834003 (JHARKHAND)
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TEST REPORT

Test Report No.	**: ELES/RNC/2023/1002**	**Report Release Date**	**: 11.04.2023**
Application No.	**: 15893961**	**Application Date**	**: 24.03.2023**

CUSTOMER DETAILS		**SAMPLE DETAILS**	
Customer Name	: Aloke Steels Industries Private Limited	Sample Ref. No.	: ELES/RNC/PCB/SM/0529
		Location	: Stack- 01 (Kiln 1&2)
		Sampling Date	: 03.04.2023
Address	: Vill- Budhakhap, PO- Digwar, Ramgarh, Dist- Ramgarh.	Sample Received Date	: 05.04.2023
		Type of Sample	: Flue Gas
		Sampling Procedure	: ELES/DOC/SMPL/02(A)
Plant Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 05.04.2023 to 11.04.2023	Sample Condition	: Sealed & Preserved

GENERAL INFORMATION		
1	Particular of the Plant	: Sponge Iron
2	Emission Due to	: Burning of Coal
3	Stack Connected to	: ESP
4	Material of Construction of Duct	: M S
5	Stack Height from Ground Level (m)	: 55
6	Height of Sampling Port from Ground Level (m)	: 27
7	Inner Diameter of Stack at Sampling Point (m)	: 1.8
8	Shape of the Stack	: Circular
9	Working Load of the Stack	: N/A
10	Pollution Control System	: ESP
11	Ladder & Platform	: Permanent

FUEL CHARACTERISTICS DETAILS		
1	Type of Fuel Used	: Coal
2	Fuel Consumption	: 3.5 TPH/Each Kiln
3	Calorific Value of Fuel (Kcal/Kg)	: N/A

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
HATIA, RANCHI-834003 (JHARKHAND)
Email: info@elespl.co.in; eles.ranchi@gmail.com
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Environmental Pollution Monitoring & Analysis

TEST REPORT

Test Report No.	**: ELES/RNC/2023/1002**	**Report Release Date**	**: 11.04.2023**
Application No.	**: 15893961**	**Application Date**	**: 24.03.2023**

Parameter	Unit	Test Protocol	Result
Particulate Matter (PM)	mg/Nm^3	IS 11255(Part 1):1985; RA 2019	**78**
Sulphur Di-Oxide (SO_2)	mg/Nm^3	USEPA 6C : 2017	**212**
Oxides of Nitrogen (NO_x)	mg/Nm^3	USEPA 7E : 2020	**59**
Flue Gas Temperature	°C	IS 11255 (Part 3): 2008; RA 2018	**178**
Barometric Pressure	mmHg	IS 11255 (Part 3): 2008; RA 2018	**738**
Velocity of Flue Gas	m/sec	IS 11255 (Part 3): 2008; RA 2018	**17.94**
Quantity of Gas Flow	Nm^3/hr	IS 11255 (Part 3): 2008; RA 2018	**129555**

Authorized Signatory
SANDIP BERA
SENIOR MANAGER
ELES PVT. LTD.

******End of Report******

Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D. Environmental Engg.
ELES Pvt. Ltd. Technical Manager

Annexure - 11

Gmail

Jharkhand <jam.env2018@gmail.com>

Regarding compliance for the period April, 2022 to September, 2022 to the conditions of Environment Clearance for Expansion of existing 1,20,000 TPA Sponge Iron Plant by installation of new facilities for production of Steel Melting Shop for 1,08,000 TPA of Billets, Rolling mill (90,000 TPA), Iron Ore crushing & Beneficiation plant (2,70,000TPA), Slag Crushing Plant (16,200 TPA), Captive Power Plant 18MW (4X2 MW WHRB:1X10 MW AFBC) and Briquetting unit for Iron ore fines (40,100 TPA).

1 message

Jharkhand <jam.env2018@gmail.com> Thu, Nov 17, 2022 at 1:01 PM
To: ro.ranchi-mef@gov.in
Cc: rdkolkata.cpcb@gov.in, ranchijspcb@gmail.com, jspcb_hazaribagh@rediffmail.com

ASIPL/076/ 2022-23 14/11/2022

To,
The Additional Principal Chief Conservator of Forests (C),
Government of India,
Ministry of Environment, Forest & Climate Change,
Integrated Regional Office (Eastern Central Zone),
2nd Floor, Headquarter-Jharkhand State Housing Board,
Harmu Chowk, Ranchi, Jharkhand- 834002

Sub:- Regarding compliance for the period April, 2022 to September, 2022 to the conditions of Environment Clearance for Expansion of existing 1,20,000 TPA Sponge Iron Plant by installation of new facilities for production of Steel Melting shop for 1,08,000 TPA of Billets, Rolling mill (90,000 TPA), Iron Ore crushing & Beneficiation plant (2,70,000TPA), Slag Crushing Plant (16,200 TPA), Captive Power Plant 18MW (4X2 MW WHRB:1X10 MW AFBC) and Briquetting unit for Iron ore fines (40,100 TPA).

Ref: - Environment Clearance Letter No. F. NO. J-11011/205/2016-IA.II (I) Dated- 23rd July, 2018.

Dear Sir,
In reference to the above subject matter & reference letters, the point wise Half Yearly compliance status for the period of April, 2022 to September, 2022 is being submitted. The soft copy is also sent through e-mail for your kind perusal please.

Hope you will find this in order and oblige.

Thanking you.
Yours faithfully
For Aloke Steels Industries Pvt Ltd.

Authorized Signatory

ASIPL - EC Compliance - April 22 to September 2022.pdf
9673K

MAA CHHINNMASTIKA CEMENT AND ISPAT PRIVATE LIMITED

Registered Office & Works:
At- Hehal, Post - Barkakana - 829103, Dist.- Ramgarh (Jharkhand)
CIN:U26941JH2004PTC010665
ramgarh.jh@rediffmail.com
cementispat@rediffmail.com
ramgarh_jh@rediffmail.com

O/C

MCCIPL/091/2022-23 12/11/2022

To,
The Additional Principal Chief Conservator of Forests (C),
Government of India,
Ministry of Environment, Forest & Climate Change,
Integrated Regional Office (Eastern Central Zone),
2nd Floor, Headquarter-Jharkhand State Housing Board,
Harmu Chowk, Ranchi, Jharkhand- 834002

Sub:- Regarding compliance for the period April, 2022 to September, 2022 to the conditions of Environment Clearance for Expansion of Sponge Iron Plant to mini Steel plant for production of 67,500 TPA rolled product by installation of 2X12Ton induction furnace with billet caster, Iron ore crushing & beneficiation and 15 MW Captive Power Plant.

Ref: - Environment Clearance Letter No. F.NO. J – 11011 / 215 / 2016 – IA. II (I) dated 07/08/2019.

Dear Sir,
In reference to the above subject matter & reference letter, the point wise Half Yearly compliance status for the period of April, 2022 to September, 2022 is being submitted for your kind perusal please.

Received 15/11/2022 Amind

Hope you will find this in order and oblige.

Thanking you.
Yours faithfully
For Maa Chhinnmastika Cement & Ispat Pvt Ltd.

Santosh Kumar Gupta
Director

Enclosures: Compliance status Report.

Cc to:-

1) The Zonal office Incharge, Central Pollution Control Board, Southernd Conclave, Block 502, 5th & 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700 107 (W. B.).
2) The Member Secretary, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), HEC Campus, P.O. Dhurwa, Ranchi - 834004, Jharkhand.
3) Regional Officer, Regional Office, State Pollution Control Board, Hazaribagh, Jharkhand.

भारतीय डाक
India Post

RJ286790958IN IVR:8274286790958
RL RAMGARH CANTT HO (829122)
Counter No:1,15/11/2022,10:36
To:REGIONAL OFFI,JHARKHAND STATE
PIN:825301, Hazaribagh HO
From:MAA CHHINMA,RANCHI ROAD
Wt:100gms
Amt:52.00(Cash)
(Track on www.indiapost.gov.in)
(Dial 18002666868) (Wear Masks, Stay Safe)

भारतीय डाक
India Post

RJ286791030IN IVR:8274286791030
RL RAMGARH CANTT HO (829122)
Counter No:1,15/11/2022,10:36
To:ZONZL OFFICE ,CENTRAL POLLUTIO
PIN:700107, Manurdana SO
From:MAA CHHINMA,RANCHI ROAD
Wt:100gms
Amt:52.00(Cash)
(Track on www.indiapost.gov.in)
(Dial 18002666868) (Wear Masks, Stay Safe)

Jharkhand
State Pollution Control Board

Online Consent Management & Monitoring System

Ministry of Environment, Forest and Climate Change
Government of India

सत्यमेव जयते

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- Apply For Consent
- Change Password
- Industry Profile
- Compliance Management
- Laboratory Monitoring Report
- Online Payment Verification
- Fee Calculator
- e-Wallet Management
- Delete InProgress Applications
- Delete InProgress LAB Applications
- View Notices 0

Send us your feedback and suggestions

click here for any kind complaints or query

Welcome MAA CHHINNMASTIKA CEMENT N ISPAT PRIVATE LIMITED

Date : 17-11-2022

Your Compliance details has been Submitted. Your Acknowledgement Number is 14749508. Thank You!.

General

General Details	
Industry Name:	MAA CHHINNMASTIKA CEMENT N ISPAT PRIVATE LIMITED
Industry Address:	VILL- HEHAL, P.O- BARKAKANA, RAMGARH
Industry Pin:	829103
Industry S.T.D. Code(Phone):	06553
Industry Phone No:	226846
Industry E-Mail Address:	cementispat@rediffmail.com
Occupier Name:	SANTOSH KUMAR GUPTA
Occupier Designation:	Director
Occupier Address:	HEHAL, BARKAKANA, DIST-RAMGARH (JHARKHAND)
Occupier Pin:	829103
Occupier Mobile No:	0000000000
Occupier Email Address:	cementispat@rediffmail.com
Industry Category:	RED
Industry Type:	Iron & Steel (involving processing from ore/ integrated steel plants) and or Sponge Iron units
Last Consent Granted App. No:	6089357
Last Consent Granted Uploaded Certificate:	View Uploaded Certificate
Last Consent Granted App. Type:	CTE
Authorization to file Compliance:	View File

Proposal No.	State	Proposal Name	Category	User Agency Name	Proposal Recieved on	File No	Date of grant

	Environment Clearance letter issued vide F. NO. J-11011/215/2016-IA.II (I) Dated- 07/08/2019 from MOEF&CC, New Delhi.
General Condition:	View
Specific Condition:	View

Annexure - 12

Aloke Steels Industries Private Limited

REGD OFFICE : OPP. ASHOK CINEMA,
RANCHI ROAD, MARAR -829 117
DIST. - RAMGARH (JHARKHAND)

CIN : U27103JH2004PTC010725

Email : asipl.ramgarh@gmail. com

WORKS :
Vill : Budhakhap
Post : Karma -829137
Dist.-Ramgarh,(Jharkhand)

Ref. No..... O/C

Date.....

ASIPL/028/2022-23

22/06/2022

To,
The Member Secretary,
Jharkhand State Pollution Control Board,
HEC Campus, TA Division Building,
Durwa, Ranchi - 834 004.
Jharkhand

Sub: Submission of Environmental Statement Report from the period of April 2021 to March 2022 for our Coal based Sponge Iron.

Ref.:- CTO Ref. No.- JSPCB/HO/RNC/CTO-10535965/2021/1138, Dated 25/09/2021.

Dear Sir,

With reference to the above, we are enclosing herewith the Environmental Statement Report for the period from April 2021 to March 2022 of our Sponge Iron.

Please find above in order and do the needful.

Thanking you,

Yours faithfully,
For ALOKE STEELS INDUSTRIES PVT.LTD.

22/06/2022

Manoj Kumar
Manager (Environment)

Encl: As above.

CC to: - The Regional Officer, Regional Office, State Pollution Control Board, Hazaribagh (Jharkhand)

ENVIRONMENTAL STATEMENT
Aloke Steels Industries Private Limited
Period from: April 2021 to March 2022

FORM – V

PART – A

1.	Name and address of the Owner / Occupier of the Industry operation or process	Aloke Steels Industries Pvt. Ltd. Occupier name – Kamendra Mishra Village – Budhakhap, P.O. – Digwar, Dist. – Ramgarh, Jharkhand – 829137
2.	Industry Category Primary (S.T.C. Code) Secondary (S.T.C. Code)	Red Category
3.	Production Capacity	Sponge Iron – 400 TPD
4.	Year of Establishment	06.05.2004
5.	Date of the last Environmental Statement Submitted	22/09/2021

PART – B

WATER AND RAW MATERIAL CONSUMPTION

(I) Water consumption in m3/day:

Process & Cooling : 203.47 m3/day

Domestic : 6.29 m3/day

Name of Product	Process Water Consumption per Unit of Product Output	
	During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)
Sponge Iron	0.92	0.92

(II) RAW MATERIAL CONSUMPTION:

Name of Raw Material	Name of Product	Consumption of Raw Material Per Unit of Output	
		During Current Financial Year (2020-21)	During Current Financial Year (2021-22)
Iron ore	Sponge Iron	1.58	0.72
Iron Ore Pellet		0.69	1.34
Dolomite		0.03	0.02
Coal		1.66	1.46

(III) POWER CONSUPTION (KWH/MT of Sponge Iron):

During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)
68.05	72.65

(IV) TOTAL PRODUCTION (MT):

During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)
90388.00	80593.00

PART – C .

DISCHARGED TO ENVIRONMENTAL / UNIT OF OUTPUT

Pollutants	Quantity of Pollutants Discharged (Mass/Day)	Concentration of Pollutants in Discharge (Mass/Volume)	Percentage of variation from prescribed standard with reasons
(a) Water	• No industrial effluent is generated. In compliance to Zero Liquid Discharge (ZLD), the web camera and flow meter are also installed with online monitoring facilities. • The waste water generated from the office toilet and mess has been discharged via septic tank and soaks pits.		
(b) Air	• Online continuous emission monitoring system of PM & SO2 are installed with web connectivity with CPCB & SPCB. • Continuous Ambient Air Quality Monitoring System (CAAQMS) PM 10 parameter is installed.		

PART – D

HAZARDOUS WASTE

(As specified under Hazardous Wastes (Management, Handling & Trans boundary Movement Rule, 2010)

Hazardous Waste	Total Quantity (Ltrs.)	
	During Current Financial Year (2020-21)	During Current Financial Year (2021-22)
a)From Process	Used gear oil and lubricant are stored in drum and used in different Chain Drive within plant campus. Hazardous waste authorization issued vide letter no JSPCB / HO /RNC/HWM-8150679/ 2021/13 dated 04/03/2021 valid up to 07/08/2025.	Used gear oil and lubricant are stored in drum and used in different Chain Drive within plant campus. Hazardous waste authorization issued vide letter no JSPCB / HO /RNC/HWM-8150679/2021/13 dated 04/03/2021 valid up to 07/08/2025.
(b) From Pollution Control Facilities	Not applicable	Not applicable

PART – E
SOLID WASTE

		Total Quantity (MT)	
		During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)
(a)	From Process		
	1) Dolachar (Coal Chai)	81210.00	55545.00
	2) Other waste	11720.20	24350.46
(b)	Quantity recycled or re- utilized within the unit		
	1) Sold	30661.510	65011.47
	2) Dispose	Nil	Nil

PART – F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both the categories of wastes.

- Used gear oil and lubricant are stored in drum and used in different Chain Drive within plant campus.
- Coal Char (Chhai), the solid waste generated in process are being sold at present, the earlier stock of coal char are also being sold as per demand. ASIPL entered into MOU to supply coal char to M/s Inland power Ltd.

PART – G

Impact Of The Pollution Control Measures On Conservation Of Natural Resources And Consequently On The Cost Of Production

- Unit has installed four numbers of ESP at kiln stack- 1 & 2 to control stack emission.
- Unit has installed ten numbers of bag filters at various material transfer points to control fugitive emissions.
- Unit has installed eighty numbers of water sprinklers at various places within plant premises to control dust emission / fugitive emission from haul roads.
- All conveyor belts are covered with M.S.Plate.
- All raw materials are kept in covered shed.

PART – H

Additional Measures/Investments Proposal For Environment Protection Including Abatement of Pollution

- Plantation are made at plant site besides the boundary. We are also doing support for plantation in nearby village during rainy season every year. New plantations are also made every year in the plant during rainy season.
- EC issued vide letter no F.No.J-11011/205/2016-IA.II(I)dated – 23rd July,2018.
- The application of CTE has been applied before JSPCB vide application no 7886295 dated 21/03/2020.

PART – I

Any other particulates for improving the quality of environment

- Unit has installed two numbers of online Continuous Emission Monitoring System (CEMS) for measurement of particulate matter (PM) & SO2.
- The web camera & flow meter has installed with online monitoring facilities.
- Continuous Ambient Air Quality Monitoring System (CAAQMS) PM 10 parameter has installed with online monitoring facilities.
- Data of CEMS, Camera & flow meter are continuously updated on CPCB & SPCB server.
- The nine numbers of CCTV cameras has been installed within plant premises to monitor the operationalization status of Air pollution Control Devices.
