# HARKHAND ISPAT PRIVATE LIMITED

GMN. OFFICE CIN

Telephone

Near P.N. Bank, Main Road, Ramgarh Cantt. Dist. - Ramgarh (Jharkhand) - 829 122 U34102UP1991PTC012872

#### WORKS :

Vill, & P.O.- Hesla, Argada Dist.- Ramgarh (Jharkhand) PIN. - 829 101

1

: 06553-226846, 224601, Fax: 226845 E-mail : jiplramgarh@gmail.com



Ref. No JIPL/030/2023-24 OIC

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 Sponge Iron Plant (4x100 TPD), Induction furnace (2x12T+1x12T), Rolling Mill (90,000 TPA) and 18 MW power plant [6 MW WHRB, 2 MW Coal char based and 10 MW Coal based].
- Ref: 1) Environment Clearance Letter No. F. No. J-11011/41/2013-IA-II (I) Dated-07/09/2022.

2) MoEF&CC, Ranchi letter no. 103-590/IRO-2023/912 dated 14.02.2023.

Dear Sir.

In reference to the above subject matter & reference letter, the point wise Half Yearly compliance statusfor the period of October, 2022 to March, 2023is being submitted for your kind perusal please.

Hope you will find this in order and oblige.

Thanking you. Yours faithfully For Jharkhand Ispat 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, 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.

E1259168275時時時時間16974259168275 SPP RAHBARH CANTT HE (829122) SILCO Counter No:1,01/07/2023,10:52 TO: THE ZONAL OFF, KOLKATA PiN:700167, Madurdana 50 From JHARKHAND L.ARGADA Wt:820ons



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

Name of Project:	Jharkhand Ispat Pvt. Ltd.
Capacity:	Sponge Iron Plant (4x100 TPD), Induction furnace (2x12T+1x12T), Rolling Mill (90,000 TPA) and 18 MW power plant [6 MW WHRB, 2 MW Coal char based and 10 MW Coal based].
Location:	Village & P.O – Hesla, Dist Ramgarh, Jharkhand.
EC letter No.	F. No. J-11011/41/2013-IA-II(I) Dated- 07/09/2022.
MoEF&CC, Ranchi letter no.	103-590/IRO-2023/912 dated 14.02.2023.

# A. SPECIFIC CONDITION:

S1. No.	CONDITION	COMPLIANCE
<b>SI. No.</b> i. ii.	CONDITIONDamage remediation measures @ cost of Rs.660.22 lakhs shall be implemented as per the action plan submitted in the EIA report.Jharkhand State Pollution Control Board vide letter Memo no. B-1767 dated 01.09.2022,has confirmed that M/s Jharkhand Ispat Private Limited has submitted Bank Guarantee amounting Rs. 6,60,22,500/- towards remediation plan and natural and community 	COMPLIANCE Being complying with on regular basis. Unit has expenses Rs 6,56,350/- till date for implementation of remediation plan. Rs 6,10,000/- submitted to the DFO Ramgarh for conservation of fauna in Phulsarai Protected Forest and Rs 46,350/- expenses for distribution of seedling (Paddy) & Manure (DAP)
	State Pollution Control Board, Head Office, Ranchi vide BG No. 0962022BG0000159 dated 12.08.2022. Project proponent shall implement the plan and it shall be completed in three years whereas the bank guarantee shall be for five years. The bank guarantee shall be released by the SPCB after successful implementation of Remediation plan, Natural Resource Augmentation Plan and Community Resource Augmentation plan.	to the villagers of Hesla & Maraar. Copy of e-challan & bills are enclosed for the above work respectively as <b>Annexure – 1</b> .
iii.	PP shall meet the 2906 KLD water requirement from Damodar River after obtaining requisite permission from the concerned competent authority. Ground water abstraction for industrial purpose is not permitted.	At present 4X100 TPD sponge iron, 3X12 Ton induction furnace and 6 MW WHRB are installed other installation are delayed. Moreover as per clause no 03 (a) page no - 04 of agreement with Damodar Valley Corporation, excess drawl of water is permitted. Copy of DVC Agreement is enclosed as <b>Annexure – 2</b> .
iv.	Railway siding for the material transportation	Railway authority introduced

	shall be provided by December, 2022 as committed.	new policy Gati Shakti Multi Modal Cargo Terminal; new installation will be completed GCT scheme. Railway issued EOI on 21/06/2023 for the same. It is delay due to change of policy of Railway. Hence only WHRB is installed and other facilities are delay.
v.	Green Belt shall be developed in 40 % of total land with tree density of 2500 trees per ha. (or 1000 trees per acre) all along the periphery of the project site. This shall include development of green belt with a width of 10-20 m within the project site towards Argarda village and Mahuwa Tand village.	Being complied on regular basis.
vi.	Performance test shall be conducted on all pollution control systems every year and report shall be submitted to Regional Office of the MoEF&CC.	Noted. Performance test monitoring report is enclosed as <b>Annexure – 3.</b>
vii.	Effluent treatment plant shall be provided for 225 KLD effluent and treated water shall be reutilized in plant process.	Noted.
viii.	Particulate matter emission from stacks shall be less than 30 mg/Nm3.	Complying with. Stack monitoring report is enclosed as <b>Annexure – 4.</b>
ix.	100 % solid waste shall be utilized. Dumping is not permitted.	Noted.
X.	Project proponent shall operate the violating unit "2x100 TPD DRI Kiln and 2x12 T Induction Furnace" only after obtaining Environmental Clearance and valid consent from state pollution control board as committed in the undertaking submitted to the Ministry.	Agree with and complied. Copy of CTE & CTO are enclosed as <b>Annexure – 5</b> .
xi.	80-85 % hot charging for billets shall be done. Balance rolling shall be carried out through reheat furnace operating on LDO/LSHS.	Noted.
xii.	All plant roads shall be paved and industrial vacuum cleaners shall be used to clean the roads regularly.	Noted, a dedicated housekeeping team is engaged to clean the factory premises.
xiii.	All stock piles shall be constructed over impervious soil and garland drains with catch pits to trap run off material shall be constructed.	Noted. Photo of raw martial shed showing stacking over impervious soil is enclosed as <b>Annexure – 6.</b>

# **B. GENERAL CONDITION:**

Sl.No.	CONDITION	COMPLIANCE
Ι	Statutory compliance :	
i	The Environment Clearance (EC) granted to the	Noted.

	project/ activity is strictly under the provisions of the EIA Notification, 2006 and its amendments issued from time to time. It does not tantamount/ construe to approvals/ consent/ permissions etc., required to be obtained or standards/conditions to be followed under any other Acts/Rules/Subordinate legislations, etc., as may be applicable to the project.	
II.	Air Quality monitoring and preservation:	
i	The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission as well as Continuous Ambient Air Quality Station (CAAQS) for monitoring AAQ parameters with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time. The CEMS and CAAQMS shall be connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	Being complied. 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. 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 <b>Annexure -7.</b> Further Unit has released work order to M/s Vasthi Instrument Pvt Ltd to install AAQMS other parameters like PM2.5, SO2 & NOx. Work Order copy attached as <b>Annexure - 8.</b>
ii	The project proponent shall 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. Fugitive monitoring report is enclosed as <b>Annexure – 9</b> .
iii	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.	Agree with.
iv	The project proponent shall provide leakage detection and mechanized bag cleaning facilities	Being complied on regular basis. 8 nos of bag filters are installed at different transfer point.

	for better maintenance of bags.	
v	Recycle and reuse iron ore fines, coal and coke	Noted.
	fines, lime fines and such other fines collected in	
	the pollution control devices and vacuum	
	cleaning devices in the process after briquetting/	
	agglomeration.	
vi	The project proponent shall ensure covered	Being complied with.
	transportation and conveying of ore, coal and	Covered truck photo is enclosed
	other raw material to prevent spillage and dust	as <b>Annexure – 10.</b>
	generation.	
vii	The project proponent shall provide primary and	Being complied with.
	secondary fume extraction system at all melting	
	furnaces.	
V111	Wind shelter fence and chemical spraying shall	Noted.
	be provided on the raw material stock piles.	Dain a secondial soith
1X	Design the ventilation system for adequate air	Being complied with.
	motor houses. Oil Cellars	
III	Water quality monitoring and preservation	
i.	The project proponent shall install 24x7	Noted.
	continuous effluent monitoring system with	Unit has installed one number of
	respect to standards prescribed in Environment	Web Camera & Flow Meter near
	(Protection) Rules 1986 (G.S.R 414 (E) dated	pump house. As per CPCB
	30th May 2008: G.S.R 277 (E) dated 31st March	guideline, data is uploaded on
	2012 (applicable to IF/EAF); S.O. 3305 (E) dated	CPCB & JSPCB URL sever.
	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	
	recognised under Environment (Protection) Act,	
	1986 or NABL accredited laboratories.	
ii.	The project proponent shall monitor regularly	Being Complied on regular
	ground water quality at least twice a year (pre-	Dasis.
	and post-monsoon) at sufficient numbers of	monitoring & Piezometer reading
	piezometers/sampling wells in the plant and	is enclosed as <b>Annexure – 11</b> .
	adjacent areas through labs recognised under	
	Environment (Protection) Act, 1980 and NABL	
111	Adhere to 'Zero Liquid Discharge'	Agree with
iv	Sewage Treatment Plant shall be provided for	For domestic waste Unit has
	treatment of domestic wastewater to meet the	provided septic tank with soak
	prescribed standards.	pit.
v.	Garland drains and collection pits shall be	Noted.
	provided for each stock pile to arrest the run-off	
	in the event of heavy rains and to check the	
	water pollution due to surface run off.	
IV.	Noise monitoring and prevention:	

i.	Noise quality shall be monitored as per the prescribed Noise Pollution (Regulation And Control) Rules, 2000 and report in this regard	Being complied on regular basis. Noise monitoring report is enclosed as <b>Annexure – 12</b> .
	shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.	
<b>V</b> .	Energy Conservation measures	
i.	Energy conservation measures may be adopted	Noted.
	such as adoption of solar energy and provision of LED lights etc., to minimize the energy consumption.	For minimization of energy consumption, Unit has used LED lights.
VI.	Waste management:	
i.	Used refractories shall be recycled as far as possible	Noted.
ii.	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 in this regard shall be submitted to the Ministry's Regional Office.	Noted. Till date unit has installed only WHRB power plant.
iii	Oily scum and metallic sludge recovered from rolling mills ETP shall be mixed, dried, and briquetted and reused in melting Furnaces.	Noted.
iv.	Kitchen waste shall be composted or converted to biogas for further use.	Noted.
VII.	Green Belt :	
i.	Green belt shall be developed in an area equal to 33% 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 in regular basis.
ii.	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.	GHG emissions inventory report is enclosed as <b>Annexure – 13.</b>
VIII	Public hearing and Human health issues :	
i.	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Being complied with. Report of Hazard identification & Risk Assessment is enclosed as <b>Annexure – 14.</b>
ii.	The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of Factory Act.	Being complied with.

iii.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained.	Periodical health check-up are being carried and record are maintained on regular basis. Copy of Health check-up is enclosed as <b>Annexure – 15.</b> And copy of PPE issues register is enclosed as <b>Annexure – 16.</b>
IX.	Corporate Environment Responsibility	
i.	The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 30/09/2020.	Noted.
ii.	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/ violation of the environmental /forest / wildlife norms /conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and/or shareholders/stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six- monthly report.	Environmental policy duly approve by the Board of Director is enclosed as <b>Annexure – 17.</b>
iii.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the	Being complied.
	control of senior Executive, who will directly to the head of the organization.	
Х.	MISCELLANEOUS:	

i	The project proponent shall make public the	Advertised in two local
	environmental clearance granted for their	newspapers of the District,
	project along with the environmental conditions	Prabhat Khabar and Danik
	and safeguards at their cost by prominently	Bhaskar published on
	advertising it at least in two local newspapers	13/09/2022 and 14/09/2022
	of the District or State of which one shall be in	respectively.
	the vernacular language within seven days and	Submitted copy in MoEF&CC is
	in addition this shall also be displayed in the	enclosed as <b>Annexure -18</b> .
	nroiect propopent's website permonently	Environmental conditions and
	project proponent's website permanentily.	safeguards will be complied in due
		course.
		EC letter has been put on our web
		site <u>www.jharkhandispat.in</u>

ii	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	<ul> <li>Copy of environment clearance letter has been sent to the following authorities:-</li> <li>1) The Member Secretary, Jharkhand State Pollution Control Board, Ranchi, Jharkhand dated 12/09/2022.</li> <li>2) The Regional officer, Jharkhand State Pollution Control Board, Hazaribagh, Jharkhand dated 12/09/2022.</li> <li>3) The District Industries Centre, District -Ramgarh, Jharkhand dated 12/09/2022.</li> <li>4) The Deputy Commissioner, District- Ramgarh, Jharkhand dated 12/09/2022.</li> <li>5) President, Ramgarh Nagar Parishad, District- Ramgarh, Jharkhand dated 12/09/2022.</li> </ul>
iii	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	Being complied on regular basis.
iv	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	Being complied. Ambient Air Quality monitoring Report Is enclosed as <b>Annexure-</b> <b>19.</b> Display board has been displayed on main gate.
V	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	Noted, being complied on regular basis.
vi	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution	Being complied for existing plant, noted for compliance in expansion project. Environment Statement Report

		-
	Control Board as prescribed under the Environment (Protection) Rules, 1986, as	has been uploaded on the company web site
	amended subsequently and put on the website	www.jharkhandispat.in
	of the company.	Environment Statement Report is
		enclosed as <b>Annexure -20.</b>
vii	The project proponent shall inform the Regional	Noted.
	Office as well as the Ministry, the date of	
	financial closure and final approval of the	
	project by the concerned authorities,	
	commencing the land development work and	
	start of production operation by the project.	
viii	The project proponent shall abide by all the	Noted.
	commitments and recommendations made in	
	the EIA/EMP report, commitment made during	
	Public Hearing and also that during their	
	presentation to the Expert Appraisal	
	Committee.	
ix	No further expansion or modifications in the	Agree with.
	plant shall be carried out without prior	
	approval of the Ministry of Environment,	
	Forests and Climate Change (MoEF&CC).	
x	Concealing factual data or submission of	Noted.
	false/fabricated data may result in revocation	
	of this environmental clearance and attract	
	action under the provisions of Environment	
	(Protection) Act, 1986.	
xi	The Ministry may revoke or suspend the	Agree with.
	clearance, if implementation of any of the above	
	conditions is not satisfactory.	
xii	The Ministry reserves the right to stipulate	Agree with.
	additional conditions if found necessary. The	
	Company in a time bound manner shall	
	implement these conditions.	
xiii	The Regional Office of this Ministry shall	Agree with.
	monitor compliance of the stipulated	
	conditions. The project authorities should	
	extend full cooperation to the officer (s) of the	
	Regional Office by furnishing the requisite data	
	/ information/monitoring reports.	
xiv	Any appeal against this EC shall lie with the	Noted.
	National Green Tribunal, if preferred, within a	
	period of 30 days as prescribed under Section	
	16 of the National Green Tribunal Act, 2010.	

# Annexure - 1 JHARKHAND ISPAT PRIVATE LIMITE

OC

ADMN. OFFICE : Near P.N. Bank, Main Road, Ramgarh Cantt. Dist. - Ramgarh (Jharkhand) - 829 122



Vill, & P.O.- Hesla, Argada Dist.- Ramgarh (Jharkhand) PIN. - 829 101

WORKS :

CIN Telephone : U34102UP1991PTC012872 06553-226846, 224601, Fax: 226845 E-mail : jiplramgarh@gmail.com

Date.....

Ref. No.....

JIPL/169/2022-23

31.03.2023

To, The Divisional Forest Officer, Ramgarh Division, Dist. Ramgarh. Iharkhand

23

Sub: Regarding submission of e- Challan copy duly received by SBI, Ramgarh Branch of Rs 6,10,000/- for conservation of fauna in Phulsarai Protected Forest to the District Forest Office under Corporate Environment **Responsibility (CER).** 

Ref.:- 1) Our letter no JIPL/164/2022-23 dated 21/03/2023. 2) DFO, Ramgarh letter no 602 dated 29/03/2023.

Dear Sir,

With reference to the above, please find enclosed herewith e- Challan copy duly received. by SBI, Ramgarh Branch of Rs 6, 10,000/- bearing no J-175799624 dated 31/03/2023.

Please find above in order and oblige.

Thanking you,

Yours faithfully, For JHARKHAND ISPAT PVT LTD

Name the un Authorized Signatory

Encl.:- As above.

Valid UpTo :-09/04/2023         I           GRN:-2316468419         I           Receiving Office:-         HZBFOR001-DIV. FOREST OFFICER-RADIVISION, RAMGARH           District:- Ramgarh         I           Year:- 31/03/2023         I           Head(8782)         I           FOREST REMITTANCES         878200103010101	Remitter's Copy of Dept Date:- 31/03/2023 11:5 AMGARH FOREST Deposit Treasury:- Ramgart to :- 31/03/2023 Amount ₹ 610000.00	<u>1:34</u>	Valid UpTo :-09/04/2023       Remitter's Copy         GRN:-2316468419       Date:- 31/03/2023 11:51         Receiving Office :-       HZBFOR001-DIV. FOREST OFFICER-RAMGARH FOREST DIVISION. RAMGARH         District :- Ramgarh       Deposit Treasury:- Ram         Year:-31/03/2023       to:- 31/03/2023         Head(8782)       Amount         Head Details       878200103010101         FOREST REMITTANCES       610000.00
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31 MAR 2023	Signature & Seal of E	Bank	Ga67 Vert Signature & Seal

*	Bill of S	upply					
TRIPURARI STORES -(2021-22-23)			Invoid	e No		Date	ed
Jharkhand Tripurari, Stores@yahoo.Com MOBILE No:-6431331805, 9709121294 6202595086 GSTIN/UIN: 20AAIFT5761H127 State Name : Jharkhand, Code ; 20		Delive	Delivery Note		Mode/Terms of Payment		
Consignee (Ship to)		12 20	Reference	Reference No. & Date. 583 dt. 23-Jun-23 Buyer's Order No.		Othe	r References
JHARKHAND ISPAT PVT LTD ARGADA			583 dt. Buyer's			Dated	ed
State Name : Jharkhand, Code : 20			Dispato	h Do	c No.	Deliv	ery Note Date
JHARKHAND ISPAT PVT LTD ARGADA			Dispatch	Dispatched through		Destination	
State Name : Jharkhand, Code : 20 Place of Supply : Jharkhand			Terms	s of E	Delive	ту	
Description of Goods	HSN/SAC	Quantity	Rate	per	Disc.	%	Amount
PADDY 650 1KG 30PC (SHIRIRAM)	10061010	96 NO'S	300.00	NO'S			28,800.00
						÷	
Total		96 NO'S				₹:	28,800.00
Amount Chargeable (in words)	housand	Eight H	undred	Only			E. & O.E
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10061010					-	-	28,800.00
Tax Amount (in words) : NIL	el	Q				otal	28,800.00
Company's PAN : AAIFT5761H Declaration	-		for TR	IPURA	RI STO	ORES	-(2021-22-23)
We declare that this invoice shows actual price of the goods described and that all particulars are tru	e and correct.				2	plu	288/2
						Author	ised Signatory

This is a Computer Generated Invoice

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# Customer Copy

CASH / CREDIT RECEIPT (Sale to Farmer) Retailer Name & Address Tripurari St oreRamgarh

Retailer ID : 219589 Certificate Registration No : 69/14-17

# GSTIN NO : 20AAIFT5761H127

Invoice No 219589173102438 Date/Time 23/06/2023 10:25

Buyer Name . Manoj Kumar Buyer Address : Nilam Niwas, Aashria C olony, Street No. 3 Oyna Ranchi Jharkh and

AadharNo/VirtualId : \*\*\*\*\*\*\*\*1930

Product-Plant Oty(Unit)	Unit/Price Amt (Rs.) (Rs.)
Imported DAP IPL 11.00(50 Kg Bag)	1350 14850.00
Total Amount (Rs) 14 (Inclusive of GST)	850.00
GST Summary	
CGST (02. 5%) SGST (02. 5%)	Rs. 353. 57 Rs. 353. 57
Total Tax Amount(Rs) :	707.14
LOAMQUIT LANR. CH2H	12.7

-Subsidy to be borne by the government on behalf of the farmer (Rs.) : 17952. 55

To know the stock position at retailer, se nd SMS RS(space)<Retailer ID> to 77382998 99 or visit Farmer's corner at https://ur varak.nic.in

Thank You

DUPLICATE CASH / CREDIT RECEIPT (SALE TO FARMER) Retailer Name & Address Tripurari St oreRamgarh Retailer ID 219589 Certificate Registration No 69/14-17

GSTIN NO : 20AAIFT5761H127 Invoice No : 219589173102709 Date/Time : 23/06/2023 10:27

Buyer Name : Rajesh Singh Buyer Address : Vill- Bujurg Jamira Ne ar Shiv Mandir Ps - Patratu Barkakana Ramgarh Jharkhand

AadharNo/VirtualId : \*\*\*\*\*\*\*\*1489

Product-Plant Qty(Unit) Unit/Price Ant (Rs.) (Rs.) Imported DAP IPL 2.0(50 Kg Bag) 1350.0 2700.00

Total Amount (Rs) 2700

(Inclusive of GST)

GST Summary

CGST (@2, 5%)	Rs.	64.29
SGST (@2, 5%)	Rs.	64. 29
Total Tax Amount (Rs)	58	/
Payment Mode: Cash	1/	

Subsidy to be borne by the government on behalf of the farmer (Rs.) : 3264.1

To know the stock position at retailer, se nd SMS RS<space><Retailer ID> to 77382998 99 or visit Farmer's corner at https://ur varak.nic.in







Damodar Valley Corporation Office of the Manager Reservoir Operations Maithan Dam, Dhanbad Jharkhand-828 207

In THE

#### Phone: 06540 279445

04-02-2019

Dated-

No.: MRO/Tariff Cell/ JIPL /- 66

То

The Authorized Signatory, Sri RAJEEV KUMAR AGARWAL M/S. JHARKHAND ISPAT PRIVATE LIMITED. Near P.N. Bank, Main Road, Ramgarh Cantt., Dist.- Ramgarh, Jharkhand, Pin.- 829122.

Sub.: Execution of Agreement for Water withdrawal of 0.65 (Zero point Six Five) MGD of Raw Water for M/S JHARKHAND ISPAT PRIVATE LIMITED. Near P.N. Bank, Main Road, Ramgarh Cantt., Dist.- Ramgarh, Jharkhand, Pin.- 829122. Dear Sir,

Enclosed, please find here with a copy of the Agreement for drawal of 0.65 (Zero point Six Five) MGD of Raw Water for Jharkhand Ispat Private Limited., on 04-February-2019 for your record.

Yours faithfully, Md. Ome

Dated. 04-02-2019

(Md Omer) Executive Engineer ( Civil ), Tariff Cell, MRO'S Office, DVC, Maithon

# DAMODAR ALLEY CORPORATION



# AGREEMENT

EXECUTED ON ........ day of February 2019

# BETWEEN

# DAMODAR VALLEY CORPORATION AND JHARKHAND ISPAT PRIVATE LIMITED.

# For Supply of RAW WATER

SPÔNGE IRON, STEEL & POWER PRODUCTION PLANT AT HESLA

FROM

Damodar River FOR INDUSTRIAL (USES)

Allocated Quantity: 0.65 (Zero point Six Five) MGD



# AGREEMENT

Supply of Raw Water

For

## Industrial Use

This Agreement is made on this.....4..th.......Day of February 2019. BETWEEN

DAMODAR VALLEY CORPORATION, a Corporation constituted under the Damodar Valley Corporation Act being Act No. XIV of 1948 (hereinafter referred to as "the said Act") and having

its Headquarters of DVC Towers, -VIP Road, Kolkata -700 054 in the state of West Bengal (herenafter to as "the First Party", which term shall unless excluded by or repugnant to the subject or context include its successors-in-interest and assigns) of the ONE PART

AND

M/S. HARKHAND ISPAT PRIVATE LIMITED., a Private Limited Company having their registered office at Near P.N. Bank, Main Road, Ramgarh Cantt., Dist.- Ramgarh, Jharkhand, Pin.- 829122, in the state of JHARKHAND (Hereinafter referred to as "the Second Party" which term shall unless excluded by or repugnant to the subject or context include its successors-in-interest and/or permitted assigns) of OTHER PART.



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Executive Engineer (C) Water, Tariff Cell MRO'S Office, DVC, Maithon WHEREAS one of the functions of the First party under Section 12(a) of the said Act is the promotion and operation of the schemes inter-alia for the supply of water in the Damodar Valley.

AND WHEREAS under the provisions of Section 15 of the said Act the First Party is vested with power to determine and levy rates for bulk supply and retail distribution of water for industrial purposes and specify the manner of recovery of such rates.

AND WHEREAS under the provisions of section 17 of the said Act construction, operation or maintenance in the Damodar Valley of any dam or other work of any installation for extraction of water shall not be effected by any person without the consent of the First Party.

AND WHEREAS the Second Party has requested the First Party under cover of its letter No. JIPL/776/18-19 dated 18.08.2018, letter no.- JIPL/812/18-19 dated 28.08.2018 and letter no .- JIPL/1180/2018-19 dated 14.11.2018 annexed hereto, to allow it to construct, operate and/or maintain the water supply scheme and to allow it to have a supply of water from Damodar River for their SPONGE IRON, STEEL & POWER PRODUCTION PLANT at Vill.- Hesla, Post - Hesla, Dist.-Ramgarh, Jharkhand, Pin.- 829101 in accordance with the approved plan and drawing forwarded by Chief Engineer (Civil), DVC, Maithon under cover of his letter No. Nil & letter No.- MRO/Tariff Cell/24/576 dated 06.09.2018 of Dy. Chief Engineer (civil), Water Resources, DVC, Maithon and also the letter No. MD/DVRR/W-6/2005/466-474 dated 1st July 2005 of Member Secretary, DVRRC, CWC, Maithon & after recommendation of subcommittee revised water allocation by Water resources Deptt. Govt. of Jharkhand vide letter No.- 2/PMC/WS-655/2005-851 dated 22.11.2016 annexed hereto for Industrial purpose as laid down in the relevant provisions of the said act.

AND WHEREAS the First Party has agreed to such construction, operation and/or maintenance of the water supply scheme and has further agreed to such supply of water to the Second Party for an initial period of five years as referred to in Clause- 16 here-in-under on the terms and conditions as hereinafter appearing.

# NOW THIS AGREEMENT WITNESSTH AND IT IS HEREBY DECLARED AND AGREED AS FOLLOWS:-

#### 01. (a) PERMISSION :

(i) The "First Party" hereby grants to the "Second Party" the permission to construct, operate and/or maintain the said water supply scheme in accordance with the Plan and Drawing annexed hereto and to extract such quantities of water from Damodar River for the purpose of SPONGE IRON, STEEL & POWER PRODUCTION PLANT at HESLA as the "Second Party" may require up to 0.65 (Zero point Six Five) MGD at the point in the Damodar Valley indicated in the said plan and Drawing annexed hereto and in the manner hereinafter mentioned provided the "Second Party" desiring to increase or decrease the quantity of water to be extracted as permitted aforesaid the "First Party" may require the "Second Party" to give the "First Party" THREE(3) MONTHS' notice in writing and approach DVRRC stating the quantity of water required and the "First Party" after receipt of approval of DVRRC will permit the additional drawal of water depending on the condition prevailing at that time provided further that failure on the part of 'the First Party' will not be construed as breach of this Agreement. the sourcing point and allocation of water by DVRRC is functionspecific. The allocation shall, in no way, be utilized /misused by 'the Second Party' by sale of water to any other consumer or its sister concern (or any agency on its behalf) for any purpose whatsoever, in the event of any such act, the same will be construed as breach of the terms and conditions of this agreement on the part of 'the Second Party' as specified in clause-17



Md, Owe Executive Engineer (C) Water, Tariff Cell MRO'S Office, DVC, Maithen

#### 01. (b) PERMISSION :

(i) The "First Party" who is seized and possessed of and is otherwise well and sufficiently entitled to the plots of land measuring Nil of DVC land, more particularly described in the drawing hereto annexed, hereby grants to the "Second Party" the right to use/build at his own cost, the intake works comprising the pump house supporting structures and approaches and also lay down pipes and other works on the above mentioned piece and parcel of land.

(ii) These structures and pumping installations shall be the property of the "Second party" and shall be maintained by them.

(iii) The "Second Party" shall apply to the "First Party" for extension of the license-period of the temporarily allotted piece of land for permissive possession/occupation for the specific use if applicable as mentioned hereinabove in Cl. 01.(b).(i) before expiry of every license-period/term of 11 (eleven) months as per the subsisting rules & regulations for temporary use/permissive possession/occupation. The "Second Party" hereby agrees to comply with all the existing terms and conditions as may be decided by the Corporation from time to time and agrees to pay the license fee as may be revised time to time without raising any dispute in this regard.

(iv) For the temporary use/occupation of the said Nil of DVC land, the second party shall pay the "First party" a license fee @ Rs. 6/- sq.ft. per term of 11 (eleven) months from the date of permissive possession/occupation of the said land if applicable, is made over to the 'Second Party'.

The aforesaid license-period and the rate of license fee may be altered and /or revised and/or enhanced as per discretion of 'the FIRST party' and 'the SECOND PARTY' agrees to make the payments as per the revised rate as and when made applicable.

(v) The "Second Party" shall not be entitled to transfer or let out the said land to others without the consent of the "First Party".

(vi) The "First Party" shall not put up any structure of its own on the aforesaid piece of land without the consent of the "Second Party" which shall not be unnecessarily withheld.

(vii) On the termination of the tenure of the temporary use and occupation period, the "Second Party" shall quit, vacate and deliver peaceful possession of the said land by removing the intake works built thereon and restoring it to its original condition at his own cost.

(viii) Neatness and cleanliness of the area occupied should be observed by the "Second Party"

#### 02. APPROVAL OF PLAN & DRAWING INSPECTION:

The installation of the "Second Party" required for extraction of water at the point on the DVC Canal of DVC indicated in the said plan and Drawing shall be duly approved by the "First Party" before erection provided the "First Party" or its representatives duly authorized in that behalf shall, from time to time, and at all times be entitled to enter such installations of the "Second Party" for inspection.

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M d, () wo-' Executive Engineer (C) Water, Tariff Cell MRO'S Office, DVC, Maithon

#### 03. (a) EXCESS DRAWAL :

No drawal in excess of the water, as permitted shall be made by "the second party" without obtaining the specific prior written permission/approval of DVRRC and subject to such terms and conditions as "the First Party" may like to impose. Notwithstanding, whatever is mentioned in this agreement regarding excess drawal, it is hereby agreed and accepted by the second party that, for the quantities of water consumed in excess of the approved monthly drawal and for any other unauthorized drawal of water, sanctioned quantum will be charged @ normal rate plus overdrawal/unauthorized drawal in excess of sanctioned drawal on monthly basis will be charged @ 2 (Two) times the normal rate.

## (b) LESS DRAWAL:

The less drawal of water by 10% or more of the agreement quantity during any 5 (five) consecutive years will automatically call for revision of the agreement quantity. The revised agreement quantity will be reduced to average of preceding 5 yrs' actual drawal, without making any further reference to the consumer incorporating the actual average drawal. However, the consumer may opt to apply to DVRRC for increase the quantity as per provision under Clause -1(a) hereinabove.

### 04. MODE OF MEASUREMENT & METERS :

For the purpose of measurement of the quantity of water extracted, the "Second Party" shall under this Agreement, with the prior Approval of the First Party, install at such points as may be indicated by 'the First Party', as many meters or as equal to the different type or types of uses of water so as to register the quantity of water for the purpose of determining the water drawal pattern (excess/less drawal) of the Second Party in such units of measurement, as may be adopted by "the First Party"

from time to time provided that for the purpose of checking the accuracy of the meter/meters installed by "the Second Party", "the First Party" may install check meters or other mutually agreed upon check measures and "the Second Party" shall provide all facilities such as log book etc. required by "the First Party" for such installation or such check.

It shall be responsibility of the 'Second Party' to repair/rectify/replacement of meter/meters within a period of 30 days from the date of detection of the fault by either party. And that 'the second party' has to submit a report certified by the representative of the first party every year regarding their compliance with proper and satisfactory functioning of meter with proper logging of meter readings which will be given due importance during periodic review of water utilization by DVRRC. Non-compliance of above may tantamount to cancellation of water allotment.

The reading of the meters referred to above shall be jointly taken by the accredited representative of the consumer and Corporation on/or as near as practicable to the last day of each English calendar month or as decided by the corporation and the reading so taken shall be binding, final and conclusive between the consumer and the Corporation as to the quantity of water drawal by the consumer , provided that in the event of any meter being found defective and the quantity of drawal of water during the period when the meter was defective shall be determined, unless otherwise mutually agreed as detailed in clause – 6 & 10 here-in-under.



Executive Engineer (C) Water, Tariff Cell MRO'S Office, DVC, Maithon

#### 05. SEALING OF METERS :

All meters referred to in the above mentioned Clause - 04 excepting the ones with automatic recorder on charts if any, shall be properly sealed on behalf of both the parties hereto and shall not be interfered with by either party except in the presence of the other party or its representatives duly authorized in that behalf.

## 06. METER READING, INSPECTION & BASIS OF PAYMENT :

The Control Valve House housing the meter/meters of 'the Second Party' shall remain in the custody of 'the second Party' and 'the First Party' through its representative duly authorized in that behalf shall at all times be entitled to enter the said Control Valve House and inspect the meter/meters. The meter reading shall be entered up daily at 9.00 hours in a register by the second Party or its representatives duly authorized in that behalf. The readings may be checked and attested by 'the First Party' or its representative duly authorized in that behalf, at convenient intervals

**Provided that** where it is not possible to record the quantity of water extracted for a particular use directly owing to the absence of a meter directly recording such quantity, the quantity extracted for such use shall be determined by taking the difference between the quantity recorded in the main meter, recording the total quantity extracted for all uses under this Agreement, and the quantity recorded for the other uses for which there may be direct meter/meters.

**Provided further that** if this meter/meters installed by 'the second party' for recording the quantity of water is/are out of order, the quantity of water extracted may be assessed by taking the average of the quantity extracted during the preceding 3 (three) months as per the reading of the meter/meters, provided further that nothing as aforesaid shall prevent the respective parties from arriving at a mutual settlement as regard the quantity of water extracted during the above period for the purpose of ascertaining excess/less drawal by the second party.

The basis of payment shall be the quantity of water extracted in a month. In other words, bills shall be raised monthly or quarterly or as decided by the corporation, based on the extracted quantity.

#### 07. QUANTITY OF WATER CONSUMED OR EXTRACTED :

The Registers of meter reading referred to in the above mentioned Clause- 06 or the assessed quantity of water mutually agreed upon by and between both the parties hereto or the average of the quantity of water extracted during the three months as aforesaid or computed by taking the difference between the direct recording and main meter shall be the prima facie evidence of the quantity of water extracted by 'the second Party'.

Md, () ws<sup>-</sup> Executive Engineer (C) Water, Tariff Cell MRO'S Office, DVC, Maithon



#### 08. PROPRIETARY RIGHT OF METERS AND UPKEEPMENT:

Meters as mentioned in the above mentioned Clause -04 shall be the property of 'the Second Party' and 'the Second Party' shall be liable for the upkeepment of the meter and for carrying out test once a year or more to the satisfaction of the First Party about the accuracy of such meter/meters.

#### 09. ACCURACY OF METERS :

In the event of any dispute or difference between 'the First Party' and the Second Party as to the sufficiency or accuracy or state of repair or condition of the said meter or as to the quantity of water extracted through such meter, such difference or dispute shall be referred to and determined by an Engineer to be appointed by both the parties hereto.

#### 10. BASIS OF ASSESSMENT IN ABSENCE OF METER :

(a) It is accepted and agreed by the 'Second Party' that the total quantity of consumption of water for the month shall be computed by the first party on the basis of actual drawal of water and the bills shall be raised on such quantity as referred to in Schedule-I & II. However, the Second Party is required to install and commission the meter(s) up to the satisfaction of the First Party for ascertaining excess/less drawal as referred to in clause 3.(a) & 3.(b) hereinabove.

(b) If at any time the meters installed for measurement of water extracted shall at any time, cease to register correctly or be removed for repair, calibration etc., then for the period until the said meters shall have been repaired replaced or otherwise adjusted as to register the quantity of water passing through it correctly, the quantity shall be computed as per proviso of clause 06 hereinabove. The First Party, however, shall be entitled to charge and 'the Second Party' shall be liable to pay for such quantity of water as mentioned in Schedule-II and the bills shall be continued to be raised by first party based on the **extracted** quantity as mentioned hereinabove.

Notwithstanding the bills\_shall be raised as per provisions contained in preceding cl. 10.(a). The Second Party shall make every Endeavour to get the meter repaired and installed to the satisfaction of the First Party within a period of 1(one) months.

#### 11. BILLS & PAYMENTS:

#### (a) Bills & Tariff:

The price for supply of water shall be charged to the 'Second Party' in accordance with Schedule-I & the First Party's 'Schedule of Rates' as given in Schedule-II and other conditions in force from time to time, provided that any levy such as any Surcharge, Sales Tax, Octroi or any another amount by whatever other name called known or made by the Corporation, the state Government or any other competent authorities on quantity of water allocated to the 'the second Party' under this agreement, shall be paid by 'the second Party'.

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Executive Engineer (C) Water, Tariff Cell TRO'S Office, DVC, Maithon



#### (b) Security Deposit: Applicable

The First Party may require the Second Party to deposit a Security Amount Rs. 14,36,082/- (Fourteen Lakh Thirty Six Thousand Eighty Two Only) equivalent to water charges for three-calendar months, considering quantity allocated in 0.65 (Zero point Six Five) MGD specified in Clause- 1(a) and given in the schedule –I annexed hereto and or as modified as per clause-13 here-in-under and as per the prevailing water rate mentioned in schedule of rates in Schedule-II. The Second Party shall have to pay altered security amount if the quantity of allocation is changed by DVRRC as per the terms of this agreement and as and when the water rates are revised and notified to the second party from time to time during the tenure of this agreement. In the event of termination of this agreement such security deposit shall be refunded after adjustment of dues, if any, to the Second Party without any interest thereon.

#### (c) Periodicity of Billing:

Bills will be raised to the Second Party monthly/quarterly based on **actual drawal** or as decided by the Corporation as the case may be. It will be the responsibility of second party to make the aforesaid payment within the due date without raising any dispute in this regard.

#### (d) Mode of payment:

The 'second party' shall pay the bill amount to the first party's office at Kolkata by RTGS/Cheque/Demand Draft drawn on Kolkata Branch of any Nationalized Bank, payable to Chief Accounts Officer, DVC, Kolkata within within 30 days from the date of issue of the bill. The license fee, however, is to be paid by the second party as per terms mentioned in Clause- 1 (b).

#### (e) Provisional Billing for disputed bills:

In the case of any disputed bill(s) and or non-receipt/delayed receipt of bill, the second party shall collect the duplicate bill from the office of first party and make the payment immediately. However Delay Payment Surcharge, if applicable, as mentioned here-in-under in clause 11.(f) shall have to be borne by the second party. In case of disputed bills, the second party shall continue to pay full amount as per the bill raised by the first party. The necessary adjustment shall be done by the first party on resolution of dispute and/or differences.

#### (f) Delay Payment Surcharge:

If 'the second party' fails to make the payment of any bill amount within the due date, the second party shall pay the surcharge of 2.0 % per month on the amount of the bill from the due date of payment to the date of receipt of such amount in first party's office at Kolkata/ in Corporation's Account which shall be treated as date of payment. The rate of Delay Payment Surcharge is however liable to revision from such date as the Corporation may decide with prior notice of one month in writing to the consumer.

#### (g) Default in payment:

In the event any bill remaining unpaid for 60 days from the date of issue of the bill, the first party shall give the second party **7(Seven)** days' clear notice in writing of its intention to discontinue the supply of water and on the expiry of such period if the payment has not been received, 'the first party' may forthwith discontinue supply of water to the second party till the period the default continues. Such discontinuance of supply shall not be deemed as breach on the part of the Corporation to comply with any of the terms of this Agreement and shall not relieve the consumer of its obligations and liabilities under the Agreement.

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#### (h) Resolution of Dispute on Bill Amount:

In the event of any dispute on the amount of the bill the consumer shall submit the in details indicating the reason/reasons for such dispute and the aforesaid dispute/disputes normally shall be resolved by mutual discussion and/or mutual exchange of written documents between the consumer and the Corporation through authorized representative within **30 (thirty) days** from the date of receipt of such reference made by the second party to 'the First Party'.

# 12. MODE OF SUPPLY UNDER NORMAL & ABNORMAL CONDITION:

Save as provided herein 0.65 (Zero point Six Five) MGD which, however, need not be continuous, throughout 24 hours, shall be available to 'the Second Party' provided that in case of draught or other unforeseen circumstances, force majeure or any other cause over which the First Party has no control, the First Party shall not be responsible for any diminution or discontinuance of supply on such occasions, but it shall restore the normal conditions of supply as soon as it reasonably can be done to the extent possible.

"The First Party" shall not be considered to be in default or in breach in supplying agreed quantity of raw water due to causes beyond the control of the "The First Party" such as acts of God, Natural Calamities, Civil Wars, Fire, Draught, Riot and acts of unsurpassed power, etc.

## 13. VALIDITY PERIOD OF QUANTUM OF WATER ALLOCATION:

Notwithstanding whatever is stated herein above, the allocated quantum of water for drawal by 'the Second Party' i.e. initial allocation of quantity (in MGD/Cusec) by DVC/DVRRC shall remain valid for INITIAL AGREEMENT period of **5 (five)** years.

In case the average drawal by the second party during the initial agreement period of five years is <u>not</u> <u>below</u> 90% of allocated quantity, then the allocated quantity as specified in Clause- 1(a) shall be treated as the 'allocated quantum' of water for drawal by 'the second party' during the forthcoming period provided that the average drawal during last consecutive **5** (five) years is <u>not less by more</u> <u>than 10%</u> of allocated quantity at the time of review by DVRRC.

In case the drawal is found <u>less by more than 10%</u>, the first party may reduce the quantum of allocation accordingly based on the average drawal. However, the second party shall have the liberty to apply for increasing the **re-allocated quantity** as per provision of Clause- 1(a). Any change in the allocated quantity after review by DVRRC Shall deem to replace the quantity of drawal specified in Clause- 1(a) and Schedule-I annexed hereto.

Fresh application for re-allotment of the earlier quantity of water for drawal by the second party, shall be required to be submitted by 'the Second Party' **twelve(12)** months prior to expiry of the initial agreement block of 5(five) years.

If the fresh application as above, is not submitted by 'the second party' in due time to the review committee of DVRRC, 'The first party' shall have the right to reduce ex-parte the re-allocation of water as decided by the committee as deemed fit for equitable distribution taking into consideration the average drawal by the second party during the preceding 5(five) years.

'The second party' hereby accepts and agrees to the aforesaid re-allocation of water without any dispute and the bills shall be raised on the basis of the **drawal quantity** in MGD.

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#### 14. RULES & REGULATION:

'The Second Party' agrees to conform to and abide by all rules and regulations made by the First Party including guidelines for water allocation set by DVRRC now in force and/or which may from time to time be made by the First Party consistent with this agreement relating to the extraction of water from the First Party's sources within the statutory limit of the said Act.

'The second party' shall ensure the optimal use of allotted quantum for the specific purpose and surrender the wasteful usage from the allotted quota. 'The second party' shall take all cares to avoid any untoward hydraulic conditions and undesirable changes in the river/supply channel.

'The second party' shall also ensure that the minimum flow in the river channel required for ecological balance is not interfered with. The Second Party shall take care that the intake structure and drawl of water, under no circumstance be detrimental to the safety and operation procedures of adjoining intakes/reservoir bridges both upstream & downstream of the intake point and also that the proposed intake is strong enough to be able to withstand floods in the river.

Notwithstanding whatever is stated in Clause-13 above, the review committee for allocation of water shall have prerogative to review periodically to reflect and incorporate the changes which take place in the realm of Water Resource Management.

"The Second Party" will ensure that the effluent water discharging out of the plant/industry will conform to the latest rules/bye laws/ regulations/prescribed water quality parameters by pollution control board of respective State Governments and/or Central Government.

Notwithstanding that the Corporation may not have acted on some previous breach, defaults or event of like nature on the part of the second party, it shall be lawful for the Corporation to enforce the terms and conditions of these presents in the event of a subsequent breach, default or event of like nature in all matters related to withdrawal of raw water by 'the Second Party'.

Any waiver by 'the First Party' of any breach of the terms and conditions of this agreement by the Second Party shall not constitute waiver of any subsequent breach of any other terms or conditions of this agreement.

#### 15. DISPUTE OR DIFFERENCE & ARBITRATION:

Any dispute(s) or difference(s) arising out of or in connection with the agreement at any time between the 'First Party' and the 'Second Party' shall to the extent possible be settled amicably between the parties.

In the event of any dispute(s) or difference(s) whatsoever arising under the agreement or in connection therewith including any question relating to existence, meaning and interpretation of the agreement or any alleged breach thereof, the same shall be referred to the Secretary/CEO of Damodar Valley Corporation, Kolkata-700 054, to nominate Sole Arbitrator for settlement of disputes.

The Arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 or any statutory modification thereof or for the time being in force or the latest. The decision/judgment of the Sole Arbitrator shall be final and binding on both the parties. The cost of Arbitration shall equally be borne by both the parties. The venue of Arbitration shall be at Kolkata.

However, in case the 'Second Party' is a Central Public Sector Enterprise/Govt. Department, the dispute arising between the parties shall be settled through **Permanent Arbitration Machinery (PAM)** of the Department of Public Enterprise, Govt. of India as per prevailing rules.

All suits arising out of dispute(s) or difference(s) between the 'First Party' and the 'Second Party' are subject to jurisdiction of Court in the City of Kolkata.



MCI, OW Executive Engineer (C) Water, Tariff Cell MRO'S Office, DVC Maithon

# IN WITNESS WHEREOF THE PARTIES TO THESE PRESENTS HAVE HERE UNTO PUT THEIR REPECTIVE HANDS AND SEALS EACH THE DAY AND YEAR FIRST ABOVE WRITTEN.

The Agreement along with Schedule of rates would come into effect on and from the date of commencement of water supply.

12/17

SIGNED, SEALED AND DELIVERED FOR AND ON BEHALF OF

DAMODAR VALLEY CORPORATION मुख्य आमय-साम् (सनिक)TION दारुघा०नि०, मैथन डेम, धनबाद Chief Engineer (Civil) D.V.C., Maithon Dam, Dhanbad

NPATENT.LD. SIGNE FOR AND ON ALF OF JHARKHAND ISPAT PRIVATE LIMITED.

Registered Office: Flat No.- 209, 2nd Floor, Tirupati Tower, SA 7/13-2 Aktha Pahariya, Varanasi, Pin.- 221007 (U.P.).

WITNESS

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#### WITNESS



2. Ma Ow Executive Engineer (G) (Name & Address) Fardif Ce-1 (Name & Office, DVC Memory

#### SCHEDULE- I

### [Referred to in Clause-1(a)]

Quantity of Water allocated by DVRRC for drawal by M/s JHARKHAND ISPAT PRIVATE LIMITED. at HESLA Vill.- Hesla, Post - Hesla, Dist.- Ramgarh, Jharkhand, Pin.- 829101, 0.65 (Zero point Six Five) MGD

From ...... day February of two thousand and Nineteen the date of commencement of water drawal:

[N.B.: The quantity of raw water allocation as revised by DVRRC from time to time as per the proviso of the agreement shall from the integral part of this agreement]

#### SCHEDULE- II

[Referred to in Clause-11] SCHEDULE OF RATES

(Effective from 1<sup>st</sup> October 2012)

FOR

INDUSTRIAL WATER SUPPLY

TIERS (Based on allocation by DVRRC)

	T-1	T-II	T-III	T-IV	
Source Of Drawal	(Up to 5 MGD) (5+ to 10 MGD)		(10+ to 20 MGD)	(Above 20 MGD)	
	Rate per KL	Rate per KL	Rate per KL	Rate per KL	
Reservoirs / Rivers	Rs. 5.40	Rs. 5.50	Rs. 5.60	Rs. 5.70	
Canals / Ponds	Rs. 5.95	Rs. 6.05	Rs. 6.15	Rs. 6.25	

<u>Note:</u> 1) The Water Supply Bills shall be raised on the basis of actual drawal quantity as for all the consumers with the above tariff.

2) An incentive of 20% on the monthly billed amount will be allowed to those Industries who have taken appropriate measures for 'Zero Effluent Discharge". The said incentive will be applicable only if the payments are made within due date and on production of requisite certificate from State Pollution Control Authority.

N.B. : Revised rate will be applicable as and when notified by the Corporation.

For and on behalf of JHARKHAND ISPAT RIVATE LIMITED.

Registered Office: Flat No.- 209, 2nd Floor, Tirupati Tower, SA 7/13-2 Aktha Pahariya, Varanasi, Pin.- 221007 (U.P.).

CHIEF ENGINEER For and on behalf of मुख्य आभयन्ता (ासावल) DAMODAR \द्व्व्याध्यिष्ट, छैन्छा स्हेम् अस्थ्रिग ION Chief Engineer (Civil) D.V.C., Maithon Dam, Dhanbad

Kolkata-700054

# Performa of information to be submitted by the company

## DETAILS OF THE COMPANY

## A. DETAILS OF APPLICANT:

01 Name in Capital Letters	JHARKHAND ISPAT PRIVATE LIMITED.
02.Designation	DIRECTOR
03 Relationship with Intending Consumer	DIRECTOR OF THE COMPANY
04.Complete Postal Address	Near P.N. Bank, Main Road, Ramgarh Cantt., Dist Ramgarh, Jharkhand, Pin 829122.
05. Telephone No.	06553-226846
06.FAX No.	06553-226845
07 E Mail Address	jipllegal@gmail.com

# Β.

# DETAILS OF THE WATER CONSUMER:

1

# Details of Registered Office:

Registered Office	Postal Address:	Flat No 209, 2nd Floor, Tirupati Tower, SA 7/13-2 Aktha Pahariya, Varanasi, Pin 221007 ( U.P.).
	Telephone No. :	06553-226846
	FAX No. :	06553-226845
	E.Mail Address :	jipllegal@gmail.com

-
•
1

# Details of Contact Person:

NAME:	Sri RAJEEV KUMAR AGARWAL		
Contact Person	Postal Address:	Near P.N. Bank, Main Road, Ramgarh Cantt., Dist Ramgarh, Jharkhand, Pin 829122.	
	Telephone No. :	06553-226846	
	FAX No. :	06553-226845	
	E.Mail Address :	jipllegal@gmail.com	



Page 13 of 16

# Complete Billing Address:

	Postal Address:	Near P.N. Bank, Main Road, Ramgarh Cantt., Dist Ramgarh, Jharkhand, Pin 829122.
Billing Address	Telephone No. :	06553-226846
	FAX No. :	06553-226845
	E.Mail Address :	jipllegal@gmail.com

C.

3

# DETAILS OF PROJECT/UNIT/PUMP LOCATION ETC.:

01. Name of the Village/Place	HESLA
02. Plot no.	122
03, Dag No.	64 ( Khata No.)
04. Mouza Name & No.	HESLA, Sheet No 1
05. J.L. No.	122 (Plot No.)
06. Police Station Name & No.	Ramgarh, Thana no 138
07. Name of Post Office with PIN	Hesla, PIN- 829101
08. District	RAMGARH
09. Postal Address of the Plant/ Unit site	Vill Hesla, Post - Hesla,  Dist Ramgarh, Jharkhand, Pin 829101
10. Point of Water Withdrawal/	Latitude 23038' 35.55 "N & Longitude 850 27 '40.47"E on left Bank of the River
Telephone No.	06553-226846
FAX No.	06553-226845
E.Mail Address	jipllegal@gmail.com
11. Location of Water Treatment Plant	<ul><li>(a) Water treatment plant proposed to be located near water reservoir inside plant permises.</li><li>(b) From intake well water shall be brought to plant water</li></ul>
12. Location of Pumping Station	Pump house and MCC room will be located on the left bank of the bank of river above H.F.L.
13. Number of pumps	Two (02) ( 1 W + 1 S )

Page 14 of 16

14. Capacity of pumps	51.23 LPS (0.0512 m3/s ) of Head - 24 m
15. Location of water meter	Between pump and rising main.
16. Location of Intake point	Nearly 500 metre U/S of Argada Railway bridge in village Hesla.
17. Quantum of water withdrawal in MGD (approved by DVRRC)	0.65 (Zero point Six Five) MGD
18. Date of Commencement of water withdrawal from pumping station (to be filled up later)	

D.

# DETAILS OF RAW WATER USAGE:

(Attach Separate sheet, if necessary, giving details):

(1) Industrial Uses

(2) Sponge Iron

(3) Steel, Power Production Plant

Manoj Kumar Manoj Kumar Oglozizola Signature with full tame of person signing the Agreement & Stamp/ Seasof Com Company



## DAMODAR VALLEY CORPORATION

#### P.O-MAITHON DAM,

Tel No. (06540) 279402/279683/279445; Fax No. 06540-274313

#### ANNEXURES

### ENCLOSURES FORMING THE PART OF THE AGREEMENT:-

Annexure (1) to (4) mentioned below and annexed hereto shall form the integral part of this Agreement:-

(1) ANNEXURE-'A'

Schedule -I & Schedule -II

(2) ANNEXURE-'B'

Detail of the Company

(3) ANNEXURE-'C'

MD/DVRR/W-6/2005/466-474 dated 1st July 2005 of Member Secretary, DVRRC, CWC, Maithon & after recommendation of subcommittee revised water allocation by Water resources Deptt. Govt. of Jharkhand vide letter No.- 2/PMC/WS-655/2005-851 dated 22.11.2016

(4) ANNEXURE-'D'

Nil & letter No.- MRO/Tariff Cell/24/576 dated 06.09.2018 of Dy. Chief Engineer (civil), Water Resources, DVC, Maithon

For and of behand MD SPAT PUT. ID. JHARKHAND MARKAND SPAT PUT. ID. LIMITED NVIRONMENT

PRIVATE

Flat No.- 209, 2nd **Registered Office:** Floor, Tirupati Tower, SA 7/13-2 Aktha Pahariya, Varanasi, Pin.- 221007 (U.P.).

CHIEF ENGINEER For and on behalf of

मुख्य आभयन्ता (सिविल) DAMODAR HAR FALLE OR REGERCATION Chief Engineer (Civil) D.V.C., Maithon Dam, Dhanbad

Kolkata-700054

# Annexure - 3

Certification

ISO



#### YUGANTAR BHARATI ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Sidroul, PO + PS – Namkum, Ranchi – 834010, Jharkhand

Accreditation

Performance audit report and calibration report of air pollution Control Device (APCD)

Project Name	Performance audit report and calibration report of air pollution Control Device (APCD).
Project Site	Jharkhand Ispat Pvt. Ltd. is situated at vill. &P.O Hesla, Argada, Ramgarh, Dist. Ramgarh, Jharkhand.
Introduction	The unit of Jharkhand Ispat Pvt. Ltd. is situated at vill. & P.O.Hesla, Argada, Ramgarh, Dist. Ramgarh, Jharkhand. The unit has installed 4 kilns of 100 TPD capacity each produce sponge iron (400 TPD) and billet plant with a capacity of 240 TPD. The unit has installed Air Pollution Control System in various Locations viz. Coal Crusher, Stock House, Cooler Discharge, Product House, Intermediate bin, Induction Furnace, and Rotary Kiln.
Objective	M/s Jharkhand Ispat Pvt. Ltd. has been asked by JSPCB to submit the Performance audit report and calibration report of the air pollution Control Device (APCD) to comply with the JSPCB CTO Specified Condition.





Jharkhand



Performance audit report and calibration report of air pollution Control Device (APCD)

# **Technical Specifications of Pollution Controls Devices**

1.	Specification	of	Coal	Crusher	<b>Bag Filter</b>
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Air Volume Supply	12000 m³/hr
Bag Size	
Diameter of bag	0.15 m
Length of bag	3.66 m
Each bag filtering area	1.724 m
Existing no. of bags	100 nos.
Total filter area	172.4 m <sup>2</sup>
Air to cloth ratio	69.61 m <sup>3</sup> /hr/ m <sup>2</sup>

# 2. Specification of Stock House Bag Filter

Air Volume Supply	10000	m³/hr
Bag Size		
Diameter of bag	0.15	m
Length of bag	3.66	m
Each bag filtering area	1.724	m
Existing no. of bags	100	nos.
Total filter area	172.4	m <sup>2</sup>
Air to cloth ratio	58.00	$m^3/hr/m^2$

# 3. Specification of Cooler Discharge (1,2,3 & 4) Bag Filter

	CD 1&2	CD 3&4	
Air Volume Supply	25000	27500	m³/hr
Bag Size			
Diameter of bag	0.15	0.15	m
Length of bag	3.66	3.66	m
Each bag filtering area	1.724	1.724	m
Existing no. of bags	180	180	nos.
Total filter area	310.3	310.3	m²
Air to cloth ratio	80.65	80.65	m³/hr/ m²

# 4. Specification of Intermediate Bin Bag filter (1&2)

	I/Bin 1	I/Bin 2	
Air Volume Supply	10000	<b>20000</b> m³/ł	٦r
Bag Size			
Diameter of bag	0.15	0.15m	
Length of bag	3.66	3.66	m
Each bag filtering area	1.724	1.724	m <sup>2</sup>
Existing no. of bags	90	100	nos.
Total filter area	155.16	172.4	m <sup>2</sup>
Air to cloth ratio	64.45	116.00	m³/hr/ m²



Performance audit report and calibration report of air pollution Control Device (APCD)

5.	Specification	of Product H	ouse (1	& 2) Ba	g filter
----	---------------	--------------	---------	---------	----------

	Product House-1	Product Hous	e-2
Air Volume Supply	40000	40000	m³/hr
Bag Size			
Diameter of bag	0.15	0.15	m
Length of bag	3.66	3.66	m
Each bag filtering area	1.724	1.724	m
Existing no. of bags	265	265	nos.
Total filter area	456.8	456.8	m²
Air to cloth ratio	87.57	87.57	m³/hr/ m²

# 6. Specification of ESP for Each Kiln

	ESP 1&2 (ACC)	ESP 3&4 (Elex)	
Air volume Supply	75000	75000	m³/hr
No. of Field	2	2	
Collecting Electrode Size	8840 x 2246	7000 x 500	mm
*Voltage distance 175 175			
Collecting electrode Spacing	400	400	mm
Discharge electrode length	9491	7742	mm
Transformer capacity	43.99	43.99	KVA

\*Distance between collecting and discharge electrode

# 7. Specification of Induction Furnace Venturi Scrubber

In this Unit, Two Induction furnaces are Running 12 x 2

Air Volume Supply (for two no. of induction furnace)	45000	m3/hr
Venturi throat diameter	300	mm WG
Water Consumption	20000 – 2500	L/hr
Fan motor rating	45	KW
Crucible diameter for the furnace		
For 12 MT capacity	1560	mm





Performance audit report and calibration report of air pollution Control Device (APCD)

## **Performance Report**

# 8. Coal Crusher Bag Filter Performance

Date of Sampling	: - 12-02-2021
Stack attached to	: - Bag Filter
Stack height from G.L.	: - 30m
Stack Diameter at port hole	: - 0.7 m

<u>Description</u>: -Pollution Control Equipment Bag filter attached to Coal Crusher Unit, the height of the stack is 30 meter and the diameter of stack is 0.7 meter

# 8.1.1 Monitoring of flue gas before Bag Filter:

Ambient Air Temperature	: -	296 <sup>0</sup> K
Flue Gas Temperature	: -	339 <sup>0</sup> K
Flue Gas Velocity	: -	9.34 m/s
Volumetric Flow Rate	: -	10728.56 Nm <sup>3</sup> /hr
Total Dust Load	: -	51340.21 gm
Dust Concentration	: -	4278.56 mg/Nm <sup>3</sup>

# 8.1.2 Monitoring of flue gas after Bag filter:

Ambient Air Temperature	: -	296 <sup>0</sup> K
Flue Gas Temperature	: -	309°K
Flue Gas Velocity	: -	6.9 m/s
Volumetric Flow Rate	: -	8683.56 Nm <sup>3</sup> /hr
Dust Concentration	: -	88.45 mg/Nm <sup>3</sup>
	1+	07 02 0/




## 9. Stock House Bag Filter performance

Date of Sampling	: -	12-02-2021
Stack attached to	: -	Bag Filter
Stack height from G.L.	: -	30 m
Stack Diameter at port hole	: -	0.7 m

<u>Description</u>: -Pollution Control Equipment Bag filter attached to Stock House Unit, the height of the stack is 30 meter and the diameter of stack is 0.7 meter

## 9.1.1 Monitoring of flue gas before Bag Filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	3450K
Flue Gas Velocity	: -	8.62 m/s
Volumetric Flow Rate	: -	9742.45 Nm3/hr
Total Dust Load	: -	35773.2 gm
Dust Concentration	: -	3577.32 mg/Nm3

## 9.1.2 Monitoring of flue gas after Bag filter:

Ambient Air Tempera	ture :-	296 OK
Flue Gas Temperatur	e :-	331 OK
Flue Gas Velocity	: -	5.97 m/s
Volumetric Flow Rate	; -	7039.12 Nm3/hr
Dust Concentration	: -	80.92 mg/Nm3

9.1.3 Efficiency of the Bag Filter: - 97.73 %





## 10. Cooler Discharge (1& 2) Bag Filter Performance

Date of Sampling	: -	12-02-2021
Stack attached to	: -	Bag Filter
Stack height from G.L.	: -	30 m
Stack Diameter at port hole	: -	0.7 m

<u>Description</u>: -Pollution Control Equipment Bag filter attached to Cooler Discharge (1&2), the height of the stack is 30 meter and the diameter of stack is 0.7 meter

## 10.1.1 Monitoring of flue gas before Bag Filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	351 OK
Flue Gas Velocity	: -	18.07 m/s
Volumetric Flow Rate	: -	20208.19 Nm3/hr
Total Dust Load	: -	126030.9 gm
Dust Concentration	: -	5041.24 mg/Nm3

## 10.1.2 Monitoring of flue gas after Bag filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	315 OK
Flue Gas Velocity	: -	11.38 m/s
Volumetric Flow Rate	: -	14189.65 Nm3/hr
Dust Concentration	: -	86.80 mg/Nm3

1.3 Efficiency of the Bag Filter : - 98.27 %







## 11. Cooler Discharge (3&4) Bag Filter Performance

Date of Sampling	: -	12-02-2021
Stack attached to	: -	Bag Filter
Stack height from G.L.	: -	30 m
Stack Diameter at port hole	: -	0.7 m

<u>Description</u>: -Pollution Control Equipment Bag filter attached to Cooler Discharge (3&4), the height of the stack is 30 meter and the diameter of stack is 0.7 meter

## 11.1.1 Monitoring of flue gas before Bag Filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	3490K
Flue Gas Velocity	: -	19.0 m/s
Volumetric Flow Rate	: -	21262.41 Nm3/hr
Total Dust Load	: -	131546.4 gm
Dust Concentration	: -	4783.41 mg/Nm3

## 11.1.2 Monitoring of flue gas after Bag filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	314 OK
Flue Gas Velocity	: -	12.49 m/s
Volumetric Flow Rate	: -	15526.45 Nm3/hr
Dust Concentration	: -	84.43 mg/Nm3
11.1.3 Efficiency of the Bag Filter :	_	98.23 %





## 12. Intermediate Bin Bag filter-1 Performance

Date of Sampling	: -	13-02-2021
Stack attached to	: -	Bag Filter
Stack height from G.L.	: -	30 m
Stack Diameter at port hole	: -	0.7 m

<u>Description</u>: -Pollution Control Equipment Bag filter attached to Intermediate Bin-1, the height of the stack is 30 meter and the diameter of stack is 0.7 meter

## 12.1.1 Monitoring of flue before Bag Filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	340 OK
Flue Gas Velocity	: -	5.97 m/s
Volumetric Flow Rate	: -	8717.22 Nm <sup>3</sup> /hr
Total Dust Load	:-	41340.21 gm
Dust Concentration	: -	4134.02 mg/Nm3

## 12.1.2 Monitoring of flue after Bag filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	309 OK
Flue Gas Velocity	: -	6.0 m/s
Volumetric Flow Rate	: -	7581 Nm <sup>3</sup> /hr
Dust Concentration	: -	80.31 mg/Nm3

12.1.3 Efficiency of the Bag Filter : - 98.06 %



## 13. Intermediate Bin Bag filter 2 Performance

13-02-2021
- Bag Filter
- 30 m
0.7 m

<u>Description</u>: -Pollution Control Equipment Bag filter attached to Stock House Unit, the height of the stack is 30 meter and the diameter of stack is 0.7 meter

## 13.1.1 Monitoring of flue before Bag Filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	342 OK
Flue Gas Velocity	: -	14.37 m/s
Volumetric Flow Rate	: -	16410.05 Nm <sup>3</sup> /hr
Total Dust Concentration	: -	81649.48 gm
Dust Concentration	: -	4082.47 mg/Nm3

13.1.2 Monitoring of flue after Bag filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	321 OK
Flue Gas Velocity	: -	9.07 m/s
Volumetric Flow Rate	: -	11037.98 Nm <sup>3</sup> /hr
Dust Concentration	: -	89.88 mg/Nm3
13.1.3 Efficiency of the Bag Filter	: -	98.81 %





## 14. Product House -1 Bag filter Performance

Date of Sampling	: -	13-02-2021
Stack attached to	: -	Bag Filter
Stack height from G.L.	: -	30 m
Stack Diameter at port hole	: -	0.7 m

<u>Description</u>: -Pollution Control Equipment Bag filter attached to Product House-1, the height of the stack is 30 meter and the diameter of stack is 0.7 meter

## 14.1.1 Monitoring of flue before Bag Filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	324 OK
Flue Gas Velocity	: -	26.77 m/s
Volumetric Flow Rate	: -	31376.62 Nm <sup>3</sup> /hr
Total Dust Concentration	: -	255670.1 gm
Dust Concentration	: -	6391.75 mg/Nm3

## 14.1.2 Monitoring of flue after Bag filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	307 OK
Flue Gas Velocity	: -	13.86 m/s
Volumetric Flow Rate	: -	17720.62 Nm <sup>3</sup> /hr
Dust Concentration	: -	86.70 mg/Nm3
14.1.3 Efficiency of the Bag Filter	: :-	98.64 %







## 15. Product House -2 Bag filter Performance

Date of Sampling	: -	13-02-2021
Stack attached to	: -	Bag Filter
Stack height from G.L.	: -	30 m
Stack Diameter at port hole	: -	0.7 m

<u>Description</u>: -Pollution Control Equipment Bag filter attached to Product House-2, the height of the stack is 30 meter and the diameter of stack is 0.7 meter

## 15.1.1 Monitoring of flue gas before Bag Filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	3340K
Flue Gas Velocity	: -	26.55 m/s
Volumetric Flow Rate	: -	31035.47 Nm <sup>3</sup> /hr
Total Dust Load	: -	263917.5 gm
Dust Concentration	: -	6597.94 mg/Nm3

## 15.1.2 Monitoring of flue gas after Bag filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	311 OK
Flue Gas Velocity	: -	12.88 m/s
Volumetric Flow Rate	: -	16175.63 Nm <sup>3</sup> /hr
Dust Concentration	: -	89.58 mg/Nm3
15.1.3 Efficiency of the Bag Filter	<u>r :</u> -	98.64 %





Jharkhand

Accrea	litation	Certifi	cation
	JHARKHAND	150 9001-2015 1900 - 2015	(ISO)

Performance audit report and calibration report of air pollution Control Device (APCD)

## 16. ESP-1 Performance

Date of Sampling	: -	14-02-2021
Stack attached to	: -	ESP-1
Stack height from G.L.	: -	55 m
Stack Diameter at port hole	: -	1.8 m

<u>Description</u>: -Pollution Control Equipment ESP-1attached to Kiln-1, the height of the stack is 55 meter and the diameter of stack is 1.8 meter.

## 16.1.1 Monitoring of flue gas before ESP:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	475 OK
Flue Gas Velocity	: -	13.37 m/s
Volumetric Flow Rate	: -	72689.09 Nm <sup>3</sup> /hr
Total Dust Load	: -	2010309.3 gm
Dust Concentration	: -	26804.3 mg/Nm3

## 16.1.2 Monitoring of flue gas after ESp:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	425 OK
Flue Gas Velocity	: -	11.06 m/s
Volumetric Flow Rate	: -	67581.89 Nm <sup>3</sup> /hr
Dust Concentration	: -	94.94 mg/Nm3

<u>16.1.3 Efficiency of the ESP :</u> - 99.63 %



## 17. ESP-2 Performance

Date of Sampling	: -	14-02-2021
Stack attached to	: -	ESP-3
Stack height from G.L.	: -	55 m
Stack Diameter at port hole	: -	1.8 m

Description: -Pollution Control Equipment ESP-2 attached to Kiln-2, the height of the stack is 55 meter and the diameter of stack is 1.8 meter.

## 17.1.1 Monitoring of flue gas before ESP:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	477 OK
Flue Gas Velocity	: -	13.29 m/s
Volumetric Flow Rate	: -	72333.23 Nm <sup>3</sup> /hr
Total Dust Load	: -	2087628.9 gm
Dust Concentration	: -	27835.05 mg/Nm3

## 17.1.2 Monitoring of flue gas after ESP:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	423 OK
Flue Gas Velocity	: -	11.19 m/s
Volumetric Flow Rate	: -	68702.39 Nm <sup>3</sup> /hr
Dust Concentration	: -	94.63 mg/Nm3

17.1.3 Efficiency of the ESP : -99.66 %





#### **18.ESP-3** Performance

Date of Sampling	: -	14-02-2021
Stack attached to	: -	ESP-4
Stack height from G.L.	: -	55 m
Stack Diameter at port hole	: -	1.8 m

*Description*: -Pollution Control Equipment ESP-3 attached to Kiln-3, the height of the stack is 55 meter and the diameter of stack is 1.8 meter.

#### 18.1.1 Outlet Monitoring of flue gas after Bag Filter:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	481 OK
Flue Gas Velocity	: -	13.42 m/s
Volumetric Flow Rate	: -	72430.91 Nm <sup>3</sup> /hr
Total Dust Load	: -	2072164.9 gm
Dust Concentration	: -	27628.87 mg/Nm3

#### 18.1.2 Monitoring of flue gas after ESP:

Ambient Air Temperature	2 :-	296 OK
Flue Gas Temperature	: -	431 OK
Flue Gas Velocity	: -	11.09 m/s
Volumetric Flow Rate	: -	66447.9 Nm <sup>3</sup> /hr
Dust Concentration	: -	95.67 mg/Nm3

<u>18.1.3 Efficiency of the ESP :</u> - 99.65 %





## 19. ESP-4 Performance

Date of Sampling	: -	14-02-2021
Stack attached to	: -	ESP-4
Stack height from G.L.	: -	55 m
Stack Diameter at port hole	: -	1.8 m

<u>Description</u>: -Pollution Control Equipment ESP-3 attached to Kiln-3, the height of the stack is 55 meter and the diameter of stack is 1.8 meter.

## 19.1.1 Monitoring of flue gas before ESP:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	479 OK
Flue Gas Velocity	: -	13.54 m/s
Volumetric Flow Rate	: -	73375.23 Nm <sup>3</sup> /hr
Total Dust Load	: -	2095360.8 gm
Dust Concentration	: -	27938.14 mg/Nm3

## 19.1.2 Monitoring of flue gas after ESP:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	429 OK
Flue Gas Velocity	: -	11.07 m/s
Volumetric Flow Rate	: -	66602.61 Nm <sup>3</sup> /hr
Dust Concentration	: -	93.91 mg/Nm3

<u>19.1.3 Efficiency of the ESP :</u> - 99.66 %





Jharkhand





Performance audit report and calibration report of air pollution Control Device (APCD)

## 20. Induction Furnace Venturi Scrubber Performance

Date of Sampling	: -	15-02-2021
Stack attached to	: -	Venturi Scrubber
Stack height from G.L.	: -	30 m
Stack Diameter at port hole	: -	0.7 m

Description: -Pollution Control Equipment Venturi Scrubber attached to Induction Furnace, the height of the stack is 30 meter and the diameter of stack is 0.7 meter.

## 20.1.1 Monitoring of flue gas before Venturi Scruber :

: -	296 OK
: -	44510K
: -	21.16 m/s
: -	18321.62 Nm <sup>3</sup> /hr
: -	282989.7 gm
: -	6288.66 mg/Nm3
	: - : - : - : - : - : -

## 20.1.2 Monitoring of flue gas after Venturi Scruber:

Ambient Air Temperature	: -	296 OK
Flue Gas Temperature	: -	336 OK
Flue Gas Velocity	: -	10.71 m/s
Volumetric Flow Rate	: -	12516.88 Nm <sup>3</sup> /hr
Dust Concentration	: -	93.71 mg/Nm3

20.1.3 Efficiency of the Venturi Scrubber :- 98.5 %





Sidroul, PO + PS – Namkum, Ranchi – 834010, Jharkhand





Performance audit report and calibration report of air pollution Control Device (APCD)

#### The efficiency/adequacy of each Air Pollution Control System is calculated

Stack Attached to	Air Volume	Inlet dust concentration	Outlet duct concentration	Efficiency of APC
	m³/hr	mg/Nm <sup>3</sup>	mg/Nm <sup>3</sup>	%
Coal Crusher Bag Filter	12000	4278.56	88.45	97.93
Stock House Bag Filter	10000	3577.32	80.92	97.73
Cooler Discharge 1 & 2 Bag Filter	25000	5041.24	86.80	98.27
Cooler Discharge 3&4 Bag Filter	27500	4783.41	84.43	98.23
Intermediate Bin Bag Filter- 1	10000	4134.02	80.31	98.06
Intermediate Bin Bag Filter- 2	20000	4082.47	89.88	98.81
Product House 1 Bag Filter	40000	6391.75	86.70	98.64
Product House 2 Bag Filter	40000	6597.94	89.58	98.64
ESP 1	75000	26804.3	94.94	99.63
ESP 2	75000	27835.05	94.63	99.66
ESP 3	75000	27628.87	95.67	99.65
ESP 4	75000	27938.14	93.91	99.66
Induction Furnace Venturi Scruber	45000	6288.66	93.71	98.50





Sidroul, PO + PS – Namkum, Ranchi – 834010,

Jharkhand

Accreditation

Certification

ISO

Performance audit report and calibration report of air pollution Control Device (APCD)











Sidroul, PO + PS – Namkum, Ranchi – 834010, Jharkhand

Accreditation

Certification

ISO

Performance audit report and calibration report of air pollution Control Device (APCD)







Sidroul, PO + PS – Namkum, Ranchi – 834010, Jharkhand



Certification

Performance audit report and calibration report of air pollution Control Device (APCD)





YugantarBharati, Sidroul, PO + PS – Namkum, Ranchi – 834010, Jharkhand, India Ph : - 9835786677, 9304955304, 9304955301, Email – <u>ybaeel@gmail.com</u>, <u>labincharge.ybaeel@gmail.com</u>



Sidroul, PO + PS – Namkum, Ranchi – 834010, Jharkhand

Accreditation

Certification

ISO

Performance audit report and calibration report of air pollution Control Device (APCD)









## YUGANTAR BHARATI

Annexure - 4

ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY



Accredited by: -

d by: - Jharkhand State Pollution Control Board (JSPCB) y:- ISO 9001:2015 & ISO 45001:2018

## **Test Certificate**

ULR (Unique	Lab Report) No.		T	C	4	0	3	2	2	3	0	0	0	0	0	0	3	5	6	F
Discipline	Chemical .	Group	Atm	nosph	neric	Pollu	tion	Sar	nple	Desc	riptic	n		Stati	onary	Sou	rce E	missi	on	
Report Rele	ase Date	31st March, 20	23					Rep	port I	D		-		YBA	EEL-	23032	4-143	439-5	1	10
W. Order/ J	SPCB App. No.	15893987					1	Wo	rk Or	der [	Date	1		24.0	3.202	3				
Type of Ind	ustry (If any)	Sponge Iron			and a	30		Job	o cod	e/ Re	f. no.	-		YBA	EELA	NA/L/	A/Ma	r-23/1	5	
Report Issu	e to	M/s Jharkha Village - Hes Dist. – Ramg	la, PC Jarh, J	vate ) - Ar Jhark	gada hanc	ted I, 1.	5	1				z.l.	i.							
Sampling P	eriod	28/03/2023				N	<b>Node</b>	of sa	mple	colle	ction		0.50	B	YBA	EEL	Team	1		
Sampling P	rotocol	IS: 11255 & CI	PCB G	uidel	ine (L	_ats/8	0/201	3-14)				- Millo								
Meteorolog	ical Cond. of Field	W.C Clear					RH 9	6 - 48					14	Ten	np 3	2ºC				
Sample rec	eipt Date	29/03/2023	Ar	nalysi	s Sta	rted o	on	29/0	3/202	23		An	aly	sis con	nplete	d on	31	/03/20	)23	2

**General Information** 

As observed while sa	mpling	As reported by	customer	
Location	Sampling port hole	Type of fuel Used	Coal	
Platform	Permanent	Quantity of Fuel Used(During Sampling)	300 TPD	
Stack Description (Shape & Material )	Circular / Metal	Total production Capacity	200 TPD	
Sampling port	Available	Height of Stack from ground level	55.0 m	
Stack Identification	Single	Inner Diameter of Stack	1.8 m	-
Height of port hole from Ground level	25.0 m	Pollution Controlling Device (if any)	ESP	
Running Oven during sampling (if any)	N/A	Total No. of Oven (if any)	N/A	

		******Test Results ******				
SI	Parameters	Test Method	Units	MU %	Results	Limits
1.	Stack gas Temperature	IS 11255 (Part 3)2008	k	-	438.0	
2.	Stack gas Velocity	IS 11255 (Part 3)2008	m/s	-	16.5	
3.	Volumetric Flow Rate	IS 11255 (Part 3)2008	Nm³/hr		102516.0	and the
4.	Particulate Matter (PM)	IS 11255 (Part 1)2009	mg/Nm <sup>3</sup>	2.12	27.1	30
5.	Sulphure Dioxide (SO <sub>2</sub> )	IS 11255 (Part 2)2009	mg/Nm <sup>3</sup>	3.06	182.0	
6.	Oxide of Nitrogen (as NO <sub>x</sub> )	IS 11255 (Part 7)2005 RA 2012	mg/Nm <sup>3</sup>	2.70	55.2	
Emi	ssion Rate	- n			in all	
1.	Particulate Matter (PM)	IS 11255 (Part 1)2009		kg/hr.	2.8	
					and the state of t	

	The State	******End of Report******			2
3.	Oxide of Nitrogen (as NO <sub>x</sub> )	IS 11255 (Part 7)2005 RA 2012	kg/hr.	5.7	-
2.	Sulphure Dioxide (SO <sub>2</sub> )	IS 11255 (Part 2)2009	kg/hr.	18.7	
±.	i di diodidice matter (r m)	10 11255 (1 art 1)2005		2.0	

Limit is specified as	As per EC issued by MoEF. (F. No. – J-11011/41/2013-IA-II (I).
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	Sample complies with prescribed limits

Sample Drawn By Tested By	– Angad Mund – Akash Khaikh	a no (Lab Analyst)	$m_{\rm eff}  {\rm M}$	Allotted Date 24- Submission Date 3 1-2	Tor Control Board 7. 54.87 -07-23 28-23
1 Carter		051103/23	CANER DO NO 16	origin	8/23
		Verified by		3 Issue	ed by
	Sum	iit Kant Srivastava		Sanjeev Ku	umar Singh
	(5	Sr. Lab Analyst)		(Technical	I Manager)
		CENTRATION	and the second	Authorize Atmospha Yugantar Bha Environmental Eng	d Signatory ric Pollution rati Analyticai & gineering Laboratory
Bran	ch Office : -	Jamshedpur	Dhanbad	Hazaribag	Pakur
	Ma	in Office · Namkun	Post Office Sidrou	Ranchi - 834010 Jhar	khand



Main Office : Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph : 098351-97960, 098357-86677, Email - ybaeel@gmail.com, Web - https://ybaeel.in





Accredited by: - Jharkhand State Pollution Control Board (JSPCB)

Certified by :- ISO 9001:2015 & ISO 45001:2018



## **Test Certificate**

ULR (Unique	Lab Report) No.	IN THE REAL PROPERTY AND INCOME.	T	C	4	0	3	2	2	3	0	0	0	0	0	0	3	5	7	F
Discipline	Chemical	Group	Atn	nospł	neric	Pollu	tion	Sar	mple	Desc	riptio	n		Stati	onary	Sou	rce E	missi	on	
Report Rele	ase Date	31st March, 20	)23					Re	port I	D				YBA	EEL-	23032	4-14:	3439-5	52	-
W. Order/ J	SPCB App. No.	15893987						Wo	rk Or	der D	)ate		91.	24.0	3.202	3				
Type of Ind	ustry (If any)	Sponge Iron			1.0	10.1		Job	o cod	e/ Re	f. no.	ų.		YBA	EELA	NA/L	A/Ma	r-23/1	5	
Report Issu	le to	M/s Jharkha Village - Hes Dist. – Ramo	nd Pr sla, PC garh, s	ivate ) - Ar Jhark	Limi gada thanc	ited 1, 1.	-	for					1	al l	1				- See	200
Sampling P	eriod	29/03/2023		-		1	Mode	of sa	mple	colle	ction	Ê.		B	y YBA	AEEL	Tean	1		
Sampling P	rotocol	IS: 11255 & C	PCB G	Guidel	ine (l	_ats/8	30/20 <sup>-</sup>	13-14)												
Meteorolog	ical Cond. of Field	W.C Clear					RH	% - 47			-1		-	Ter	np 3	81ºC			Ś	3-
Sample rec	eipt Date	29/03/2023	A	nalvsi	is Sta	rted	on	29/0	03/20:	23		An	alvs	sis cor	nplete	ed on	3	1/03/2	023	

#### **General Information**

As observed while sa	mpling	As reported by customer					
Location	Sampling port hole	Type of fuel Used	Coal				
Platform	Permanent	Quantity of Fuel Used(During Sampling)	300 TPD				
Stack Description (Shape & Material )	Circular / Metal	Total production Capacity	200 TPD				
Sampling port	Available	Height of Stack from ground level	55.0 m				
Stack Identification	Single	Inner Diameter of Stack	1.8 m				
Height of port hole from Ground level	25.0 m	Pollution Controlling Device (if any)	ESP				
Running Oven during sampling (if any)	N/A	Total No. of Oven (if any)	N/A				

		i cot neo uno				
SI	Parameters	Test Method	Units	MU %	Results	Limits
1.	Stack gas Temperature	IS 11255 (Part 3)2008	k	-	429.0	
2.	Stack gas Velocity	IS 11255 (Part 3)2008	m/s	-	14.7	
3.	Volumetric Flow Rate	IS 11255 (Part 3)2008	Nm <sup>3</sup> /hr	-	93248.0	1
4.	Particulate Matter (PM)	IS 11255 (Part 1)2009	mg/Nm <sup>3</sup>	2.12	22.4	30
5.	Sulphure Dioxide (SO <sub>2</sub> )	IS 11255 (Part 2)2009	mg/Nm <sup>3</sup>	3.06	165.4	
6.	Oxide of Nitrogen (as NO <sub>x</sub> )	IS 11255 (Part 7)2005 RA 2012	mg/Nm <sup>3</sup>	2.70	44.2	
Emi	ission Rate					6
1.	Particulate Matter (PM)	IS 11255 (Part 1)2009	575	kg/hr.	2.1	-
2.	Sulphure Dioxide (SO <sub>2</sub> )	IS 11255 (Part 2)2009	kg/hr.		15.4	

2.	Sulphure Dioxide (	SO <sub>2</sub> )	IS 11255 (Part 2)2009	kg/hr.	15.4	
3.	Oxide of Nitrogen (	as NO <sub>x</sub> )	IS 11255 (Part 7)2005 RA 2012	kg/hr.	4.1	-
		and the second second	******End of Report*****	125		
Limi	t is snacified as	As nor EC issue	d by MOEE (E No - L11011/41/2013-14-11 (1)		Car and A	

Limit is specified as	AS DELECTISSUED BY MOLEF. (F. INO J-11011/41/2013-1A-11 (1).
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	Sample complies with prescribed limits

Sample Drawn By Tested By	– Angad Mu – Akash Kha	unda alkho (Lab Analyst)	and the second second	Jharkhand Application Allotted Da Submission	ny CONCERN for State Pollution Control Board No. <u>5893187</u> ate <u>24-02-23</u> n Date <u>31-03-23</u>	ETUA
		8 51T03/2	3	21/0	353	
		Verified by	24 m	Iss	sued by	
		Sumit Kant Srivastava		Sanjeev Kumar Singh		
		(Sr. Lab Analyst)		(Techni	cal Manager)	- Maria
		Constant and	and the second	Authoriz Atmosph Yugantar Bh Environmental E	red Signatory naric Pollution narati Analyticai & Engineering Laboratory	
Branc	h Office : -	Jamshedpur	Dhanbad	Hazaribag	Pakur	
		·	Devi Offer Older	D	d de se se sel	



Main Office : Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph : 098351-97960, 098357-86677, Email - ybaeel@gmail.com, Web - https://ybaeel.in





## JHARKHAND STATE POLLUTION CONTROL BOARD

## TOWNSHIP ADMINISTRATION BUILDING, HEC COMPLEX, DHURWA, RANCHI 834004 Telephone: 0651-2400850 (Fax)/ 2400851/2400852/2401847/2400979/2400139

Ref No.: JSPCB/HO/RNC/CTE-15218191/2023/136

Dated : 2023-02-25

# Consent to Establish (CTE) under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981

1. Reference: Application (s) No.- 15218191 / dated : 04/01/2023 of JHARKHAND ISPAT PRIVATE LIMITED, RAM CHANDRA RUNGTA for consent under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981

#### 2. Documents Relied Upon:

(a) The content of Copy of Environmental Clearance (EC) accorded to the unit by MoEF &CC GOI vide file no. J-11011/41/2013-IAII(I) dtd 07/09/2022.

(b) The content of Consent to Establish (CTE), vide ref. no. JSPCB/HO/RNC/CTE-14198438/2023/1, vide dated 01.01.2023.

(c) The content of previous Consent to Operate (CTO), vide ref. no. Ref. no. JSPCB/ HO/ RNC/CTO - 10527411 /2022/1497, dtd, -23.10.2022 valid upto 30.09.2026.

(d) The content of self certificate regarding procurement of raw material from valid sources.

(e) The content of Inspection Report (IR) of the Regional Officer, Regional Office cum Laboratory, Hazaribagh vide ref. no.1025, dated 09.11.2022.

(f) The content of letter of the unit vide dated 03.01.2023 for request regarding amendment in CTE as per EC.

**3.** The consent is granted under section 25 / 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 to establish the project in Mauza- HESLA, P S -HESLA, District-RAMGARH as follows:

Project	Site-Area		Investment (Rs)/ Year	Product & Capacity	Period of CTE
	Plot Nos.	Area			
In Expansion	04, 50, 53, 56, 60, 61, 62 Khata No-64, 38,33	AS Per E.C.	18663.00 Lakhs	MS Billets- 36000 TPA, TMT Bar- 90000 TPA, Power AFBC Boiler-12 MW Power WHRB- 6 MW	As Per EC

## (A) Specific Conditions:

1. That, the occupier shall raise and maintain the height of all stacks attached with air pollution control devices (APCD) up to 30 metre.

2. That, the occupier shall comply fugitive emission standards of 2000  $\mu$ g/m3 at a distance of 10 metre from raw material crusher and product handling areas etc.

3. That, the occupier shall provide separate electricity meter and totaliser for continuous recording of power consumption with all APCD. A logbook shall be maintained for recording of daily meterage of electricity meter connected to all APCDs. The amperage of the ID fan shall also be recorded continuously. Non functioning of APCD shall be recorded in the same logbook along with reasons for non-operation of the Pollution Control Equipment.

4. That, the safety cap/emergency stack of rotary kiln type plant, which is generally installed above the after burner chamber (ABC) of feed end column should not be used for discharging untreated emission, bypassing the air pollution control device.

5. That, the occupier shall provide software controlled interlocking facility keeping in view of on-line emission and effluent monitoring system to ensure stoppage of feed conveyor, so that the feed to the kiln would stop automatically, if emergency/safety cap of the rotary kiln is opened or ESP is non - operational.

6. That, the occupier shall install mechanically operated fitted with water mixing (spiral pug mill) system for timely collection and removal of the flue dust generated in ESP or at any other pollution control devices for control of fugitive emission at the dust collection system.

7. That, the occupier shall maintain logbook for daily record of Char production and its usage. The record shall be made available to officials of JSPCB during inspection of the plant.

8. That, the occupier shall make the approach road and roads within premises of the plant and work areas asphalted or concreted.

9. That, the occupier shall have its conveyor belt for transporting the materials fully covered all along its way and transfer points of conveyor belt should also be covered and suction system should be connected to de-dusting equipment.

10. That, the occupier shall make extensive plantation of three tier all along the roads and boundary wall of the industry.

11. That, the occupier shall make water sprinkling arrangement in areas around crushing and screening units, raw material heaps at unloading points, heavy vehicle movement areas, roads and waste dump sites etc.

12. That, the occupier shall construct the shed for keeping Iron Ore properly and ensure Crushing and screening operation in shaded enclosed area.

13. That, the occupier shall, use the fly ash generated from AFBC boiler as per notification released by MoEF & CC, New Delhi "Fly Ash Notification" dated 14th September, 1999 and as amended on 25th January, 2016.

14. That, the occupier shall make arrangement for operation of the plant in such a way that all pollution control devices shall start before start of conveyor belt/plant operation and similarly all pollution control devices shall be put off only after stopping the operation of the plant.

15. That, the occupier shall install and operate the on-line emission monitoring system uninterruptedly.

16. That, calibration of all APCD's shall be done at regular intervals as per the guidelines prescribed by CPCB and submit its report to the Board regularly.

17. That, the occupier shall operate and maintain the CCTV cameras installed with all APCDs and submit its photographs at the time of application of CTO.

18. That, the occupier shall ensure construction of garland drain, toe wall, settling tank with raw material storage area and solid waste storage area separately.

19. That, the occupier shall in no case dispose of the solid waste including fly ash and bottom ash on any agricultural land and keep it within the plant premises.

20. That, the occupier shall comply all the conditions of EC and CTO on six monthly basis alongwith the analysis reports successively to the Board and other concerned organization.

21. That, the occupier shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.

22. That, the occupier shall 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 devices in the process after briquetting/agglomeration.

23. That, this CTE supersedes the CTE granted vide ref. no. JSPCB/HO/RNC/CTE-14198438/2023/1, dated 01.01.2023.

## (B) General Conditions :

(1) That, the occupier shall construct pucca (i) minimum ten feet high boundary wall and (ii) approach road and internal roads and shall keep the premises neat and clean and tidy.

(2) That, the occupier shall install comprehensive enclosure (s) to cover the places of unloading of raw materials, the equipments of their processing & transferring, the places of loading of products, by products and wastes for prevention of fugitive emission and shall install such automatic inbuilt system(s) that in house dust/ gases collect(s) and undergo (es) cleaning and clean air goes out.

(3) That, the occupier shall install such automatic inbuilt system(s) that process flue gas(es) / process gas(es) and undergo(es) cleaning and clean air go(es) out through the chimney(s), having height(s) as per Central Pollution Control Board norm.

(4) That, the occupier shall have D G Set(s) of the standard as laid in the Environment (protection) Rules, 1986 and shall install it (them) within acoustic enclosure (s) and shall keep the height(s) of exhaust pipe(s) as per Central Pollution Control Board norm.

(5) That, the occupier shall impart treatment as per Central Pollution Control Board text to wastewater and shall keep process effluent in close-circuit and effluent from other sources in conformity with the standard (s).

(6) That, the occupier shall install Central Ground Water Board/ State Ground Water Directorate approved system of rain water harvesting-cum-ground water recharge.

(7) That, the occupier shall create new water body (ies) / remove deposit(s) of existing water body(ies) and nearby stream(s) and pond(s) and shall maintain the wholesomeness of water.

(8) That, the occupier shall grow greenery in the periphery and other available spaces and shall continue enhancing its plant density and biodiversity.

(9) That, this CTE is valid subjected to the validity of mining Lease / Mining Plan / Ecofriendly / Environmental Clearance, if applicable. In case of no renewal of Mining Lease/Mining Plan, this consent shall be treated as revoked automatically.

(10) That, this CTE is issued from the environmental angle only and does not absolve the occupier from other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility to comply with these conditions laid down in all other laws for the time being in force, rests with the industry/ unit/ occupier.

(11) That, this CTE shall not in any way, adversely affect or jeopardize the legal proceeding, if any, instituted in the past or that could be, instituted against you by the State Board for violation of the provisions of the Act or the Rules made there under.

(12) That, the occupier shall comply with all applicable provisions of the Water (Prevention & Control of Pollution) Act, 1974; the Water (Prevention & Control of Pollution) Cess Act, 1977; the Air (Prevention & Control of Pollution) Act, 1981; and the Environment (Protection) Act, 1986 and Rules there under.

- 4. That, this CTE shall not absolve the occupier from making compliance of other statutory prescribed under any law or direction of courts or any other instrument for the time being in force.
- 5. That, this CTE is being issued on the basis of information/ documents/ certificate submitted by the unit. This CTE will be revoked if any of the information/ documents/ certificates/ undertaking given by the occupier is found false/fictitious/forged in future.
- 6. This order shall be valid subject to compliance of all other legal requirements applicable to the unit.
- 7. The State Board reserves the right to revoke, withdraw or make any reasonable variation / change / alteration in condition of this consent.

This is issued with the approval of the competent authority



Memo No. : JSPCB/HO/RNC/CTE-15218191/2023/136 Dated : 2023-02-25

**Copy to :** Jharkhand Ispat Private Limited, Vill- Hesla, PO- Argada, Ramgarh, Jharkhand, Director of Industries, Government of Jharkhand, Ranchi/ Deputy Commissioner, Ramgarh/ Director of Mines, Government of Jharkhand, Ranchi/ Chief Inspector of Factories, Ranchi/ DFO, Ramgarh/ DMO, Ramgarh/ R O,JSPCB, Hazaribagh for information & ensuring compliance of the above.

Digitally signed by	
Yatindra Kumar	
Das	[Y. K. Das]
Date: 2023.02.25	
18:11:44 +0 <b>94em</b>	ber Secretary
	Digitally signed by Yatindra Kumar Das Date: 2023.02.25 18:11:44 +0 <b>9/Jem</b>

## JHARKHAND STATE POLLUTION CONTROL BOARD



TOWNSHIP ADMINISTRATION BUILDING, HEC COMPLEX, DHURWA, RANCHI 834004 Telephone: 0651-2400850 (Fax)/ 2400851/2400852/2401847/2400979/2400139

Ref No. JSPCB/HO/RNC/CTO-16016339/2023/1084

Dated : 2023-06-24

# Consent to operate (CTO) under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981

1. Application (s) dated 2023-04-28 of JHARKHAND ISPAT PRIVATE LIMITED, Occupier Name :RAM CHANDRA RUNGTA for consent under section 25 (1)(b)/25 (1) (c)/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21(1) of the Air (Prevention & Control of Pollution) Act, 1981...

#### 2. Documents Relied Upon:

(a) The content of copy of Environmental Clearance (EC) accorded to the unit by MoEF &CC GOI vide file no. J-11011/41/2013-IAII(I) dtd 07/09/2022.

(c) The content of Consent to establish (CTE), vide ref. no. JSPCB/HO/RNC/CTE-14198438/2023/1, dated 01.01.2023 for the production of MS Billets- 36000 TPA, TMT Bar90000 TPA, Power AFBC Boiler-12 MW Power WHRB- 6 MW.

(c) The content of previous Consent to Operate (CTO), vide ref. no. Ref. no. JSPCB/ HO/ RNC/CTO - 10527411 /2022/1497, dtd 23.10.2022 valid upto 30.09.2026.

(d) The content of self certificate regarding procurement of raw material from valid sources.

(e) The content of Inspection Report (IR) of the Regional Officer, Regional Office cum Laboratory, Hazaribagh vide ref. no. 465, dated 03.05.2023.

**3.** The consent is granted under section 25 / 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 to operate the project in Mauza -HESLA, P S -HESLA, District -RAMGARH, as follows:

Project	Site-Area		Investment (Rs)	Product & Capacity	Period of CTO
	Plot Nos.	Area			Date of issue To
In Expansion	As per EC	As per EC	4571.17 Lakh [as per application]	MS Billets- 36000 TPA, Power:- WHRB- 6 MW	31/03/2024

1. That, the occupier shall raise and maintain the height of all stacks attached with air pollution control devices (APCD) up to 30 metre.

2. That, the occupier shall comply fugitive emission standards of 2000  $\mu$ g/m3 at a distance of 10 metre from raw material crusher and product handling areas etc.

3. That, the occupier shall provide separate electricity meter and totaliser for continuous recording of power consumption with all APCD. A logbook shall be maintained for recording of daily meterage of electricity meter connected to all APCDs. The amperage of the ID fan shall also be recorded continuously. Non functioning of APCD shall be recorded in the same logbook along with reasons for non-operation of the Pollution Control Equipment.

4. That, the safety cap/emergency stack of rotary kiln type plant, which is generally installed above the after burner chamber (ABC) of feed end column should not be used for discharging untreated emission, bypassing the air pollution control device.

5. That, the occupier shall provide software controlled interlocking facility keeping in view of on-line emission and effluent monitoring system to ensure stoppage of feed conveyor, so that the feed to the kiln would stop automatically, if emergency/safety cap of the rotary kiln is opened or ESP is non - operational.

6. That, the occupier shall install mechanically operated fitted with water mixing (spiral pug mill) system for timely collection and removal of the flue dust generated in ESP or at any other pollution control devices for control of fugitive emission at the dust collection system.

7. That, the occupier shall maintain logbook for daily record of Char production and its usage. The record shall be made available to officials of JSPCB during inspection of the plant.

8. That, the occupier shall make the approach road and roads within premises of the plant and work areas asphalted or concreted.

9. That, the occupier shall have its conveyor belt for transporting the materials fully covered all along its way and transfer points of conveyor belt should also be covered and suction system should be connected to de-dusting equipment.

10. That, the occupier shall make extensive plantation of three tier all along the roads and boundary wall of the industry.

11. That, the occupier shall make water sprinkling arrangement in areas around crushing and screening units, raw material heaps at unloading points, heavy vehicle movement areas, roads and waste dump sites etc.

12. That, the occupier shall construct the shed for keeping Iron Ore properly and ensure Crushing and screening operation in shaded enclosed area.

13. That, the occupier shall, use the fly ash generated from AFBC boiler as per notification released by MoEF & CC, New Delhi "Fly Ash Notification" dated 14th September, 1999 and as amended on 25th January, 2016.

14. That, the occupier shall make arrangement for operation of the plant in such a way that all pollution control devices shall start before start of conveyor belt/plant operation and similarly all pollution control devices shall be put off only after stopping the operation of the plant.

15. That, the occupier shall install and operate the on-line emission monitoring system uninterruptedly.

16. That, calibration of all APCD's shall be done at regular intervals as per the guidelines prescribed by CPCB and submit its report to the Board regularly.

17. That, the occupier shall operate and maintain the CCTV cameras installed with all APCDs and submit its photographs at the time of application of CTO.

18. That, the occupier shall ensure construction of garland drain, toe wall, settling tank with raw material storage area and solid waste storage area separately.

19. That, the occupier shall in no case dispose of the solid waste including fly ash and bottom ash on any agricultural land and keep it within the plant premises.

20. That, the occupier shall comply all the conditions of EC and CTO on six monthly basis alongwith the analysis reports successively to the Board and other concerned organization.

21. That, the occupier shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.

22. That, the occupier shall 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 devices in the process after briquetting/agglomeration.

23. That, the occupier shall submit applications for renewal of consent under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 again 120 days prior to the date of expiry of this consent with requisite fee and documents showing compliance of all of the above conditions.

(1) That, the occupier shall maintain the **National Ambient Air Quality Standard** given below:

			Concentration in Ambien	
S N	Pollutant	Time Weighted Average	Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Govt.)
(1)	(2)	(3)	(4)	(5)
1.	Sulphur Dioxide (SO2), µg/m3	Annual 24 hours	50 80	20 80
2.	Nitrogen Dioxide (NO2), µg/m3	Annual 24 hours	40 80	30 80
3.	Particulate Matter (size less than 10 µm) or PM10, µg/m3	Annual 24 hours	60 100	60 100
4.	Particulate Matter (size less than 2.5 µm) or PM2.5, µg/m3	Annual 24 hours	40 60	40 60
5.	Ozone(O3), µg/m3	8 hours 1 hour	100 180	100 180
6.	Lead (Pb) µg/m3	Annual 24 hours	0.50 1.0	0.50 1.0
7.	Carbon Monoxide (CO) mg/m3	8 hours 1 hour	02 04	02 04
8.	Ammonia (NH3) µg/m3	Annual 24 hours	100 400	100 400
9.	Benzene (C6H6) µg/m3	Annual	05	05
10.	Benzo(a) Pyrene(BaP) Particulate Phase only ng/m3	Annual	01	01
11.	Arsenic (As) ng/m3	Annual	06	06
12.	Nickel (Ni) ng/m3	Annual	20	20

Note : Serial no. 1 to 4 – Mandatory Serial no. 5 to 12 As applicable for specific type of industry. (2) That, the occupier shall maintain the emission quality within the standard and the quantity, as follows:

S N	Parameter	Standard
1	Particulate Matter	150 mg/Nm3

## (3) That, the occupier shall keep process effluent in close-circuit and the quality of effluent from other sources in conformity with the standard (s) and the discharge quantity as below:

S N	Parameter	Standard
1	Total Suspended Solids	100 mg/L
2	BOD	30 mg/L
3	COD	250 mg/L
4	Oil & Grease	10 mg/L

(4) That, the occupier shall dispose of solid wastes as follows:

S N	Waste Type	Mode of Disposal
1	Hazardous Carbonaceous Wastes	In co-processing in high temperature furnaces or kilns
2	Hazardous Non-Carbonaceous Wastes	In TSDF
3	Non-Carbonaceous Non- Hazardous solid wastes/ Mine Over Burden	As a substitute of Soil or Mineral

- (5) That, the occupier shall keep D G Set(s) within acoustic enclosure and shall keep the height(s) of exhaust pipe(s) as per Central Pollution Control Board norm.
- (6) That, the occupier shall install and maintain Central Ground Water Board/ State Ground Water Directorate approved system of rain water harvesting-cum-ground water recharge and submit the photographic view of the structures within a month.
- (7) That, the occupier shall grow and maintain greenery of the project in the periphery and other available spaces and shall continue enhancing its plant density and biodiversity.
- (8) That, the occupier shall submit environmental statement with supporting stoichiometric calculations analyses reports, every year latest by 30th September of the next financial year.
- (9) That, the occupier shall submit report(s) duly monitored and issued by an NABL accredited / ISO 9001:2008 and OHSAS 18001:2007 certified laboratory in compliance sub-para (2), (3), (4) and (5) of paragraph 3 of this CTO yearly at required periodicity.

- (10) That, this CTO is valid subjected to the validity of mining Lease/Mining Plan/Ecofriendly/Environmental Clearance, if applicable. In case of no renewal of Mining Lease/Mining Plan, this consent shall be treated as revoked automatically.
- (11) That, this CTO is issued from the environmental angle only and does not absolve the occupier from other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility to comply with these conditions laid down in all other laws for the time-being in force, rests with the industry/ unit/ occupier.
- (12) That, this CTO shall not in any way, adversely affect or jeopardize the legal proceeding, if any, instituted in the past or that could be, instituted against you by the State Board for violation of the provisions of the Act or the Rules made there under.
- (13) That, the occupier shall comply with all applicable provisions of the Water (Prevention & Control of Pollution) Act, 1974; the Water (Prevention & Control of Pollution) Cess Act, 1977; the Air (Prevention & Control of Pollution) Act, 1981; and the Environment (Protection) Act, 1986 and Rules made there under.
- 4. That, this CTO shall not absolve the occupier from making compliance of other statutory prescribed under any law or direction of courts or any other instrument for the time being in force.
- 5. That, this CTO is being issued on the basis of information/ documents/ certificate submitted by the unit. This CTO will be revoked if any of the information/documents/certificates/undertaking given by the occupier is found false/fictitious/forged in future.
- 6. The Order shall be valid subject to compliance of all other legal requirements applicable to the unit.
- 7. The State Board reserve the right to revoke, withdraw or make any reasonable variation / change / alteration in conditions of this consent.

This is issued with the approval of the Competent authority



Dated : 2023-06-24

Memo No. : JSPCB/HO/RNC/CTO-16016339/2023/1084

**Copy to:** M/s Jharkhand Ispat private Limited, vill- Hesla, PO- Argarda, Ramgarh, Jharkhand/ Director of Industries, Government of Jharkhand, Ranchi/ Deputy Commissioner, Hazaribagh/ Director of Mines, Government of Jharkhand, Ranchi/ Chief Inspector of Factories, Ranchi/ DFO, Hazaribagh/ DMO, Hazaribagh/ R O,JSPCB, Hazaribagh for information & ensuring compliance of the above.

[Y. K. Das] Member Secretary

Digitally signed by Yatindra Yatindra Kumar Das Kumar Das Date: 2023.06.24 11:54:58 +05'30'



## Annexure - 7 JHARKHAND ISPAT PRIVATE LIMITED

CIN Telephone

ADMN. OFFICE : Near P.N.Bank, Main Road, Ramgarh Cantt. Dist. - Ramgarh (Jharkhand) - 829 122 U34102UP1991PTC012872 : 06553-226846,224601, Fax: 226845 E-mail : jiplramgarh@gmail.com

IS:2830

WORKS :

CM/L-5406356

Vill, & P.O.-Hesla, Argada Dist.-Ramgarh (Jharkhand) PIN.- 829 101

15/01/2020

Date.....

Ref. No.....

JIPL/1516/2019-20

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 & commissioned by M/s Environment SA India Pvt. Ltd., Navi Mumbai on 05/12/2019 (Installation & Commissioning Report enclosed) and it is connected online with Jharkhand State Pollution Control Board URL sever on 15/01/2020.

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

Sr. No.	CAAQMS location	CAAQMS location Co-ordinate	
1	South west corner of Induction area	1 Lat - 23º38'57 (N)	
		Long - 85°27'53 (E)	

This is for your information.

Thanking you.

Yours faithfully,

For Jharkhand Ispat Pvt Ltd.

Authorized Signatory

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

Encl.:-1) PM 10 analyser photograph. 2) Installation & Commissioning Report.

Regd Office : Flat No 209, 2nd Floor, Tirupati Tower, SA 7/13-2 Akhta, Pahariya, Varanasi - 221007 (Uttar Pradesh)

## Jharkhand Ispat Pvt Ltd

## PM 10 Analyser



# JHARKHAND ISPAT PRIVATE LIMITED

#### ADMN. OFFICE

CIN E-mail Id. Near P.N.Bank, Main Road, Ramgarh Cantt. 829 122 Dist. Ramgarh (JHARKHAND) U34102UP1991PTC012872 jiplramgarh@gmail.com jiplpurchaseramgarh@gmail.com WORKS: VILL. & P.O. HESLA, Argada DIST. RAMGARH (JHARKHAND) PIN: 829101

Annexure - 8

Date: 21.12.2022

## Ref. No. PO/JIPL/1186/2022-23

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

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

Dear Sir,

Vide our order number PO/JIPL/1186/2022-23 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	Chemiluminiscenc	0-500ppb	Зррь
SOx	UVFluorescence	0-500ppb	3ppb
PM2.5	BetaAttenuation	0-1000 ug/m3	1ug/m3

TechnicalSpecifications:

- 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

Contd....

REGD. OFFICE : House No.-25, Chanderpuri, Ghaziabad (Uttar Pradesh) - 201001

T12/22

Ref.No. PO/JIPL/1186/2022-23 dt. 21.12.22

Jharkhand Ispat Pvt. Ltd.

## 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
- Warranty of the instrument: 18 months from date of supply or 12 months from date of 2.
- 3. Consumable items lile filter tape will be supplied by you on free of cost basis (Minimum -10
- 4. During warranty period you will perform 4 scheduled and 2 emergency visits, total minimum
- 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 : Jharkhand Ispat Pvt. Ltd., Vill. & Post: Hesla, Argada, Dist. Ramgarh (Jharkhand) Pin: 829101.

GST Number : 20AABCR2993R1ZX

Thanks & Regards

Yours faithfully, For Jharkhand Ispat Pvt. Ltd.

112/202

(AKHOURI JAYPRAKASH) **Head Purchase** M. No. 7050087222


Annexure - 9

ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY dited by: - Jharkhand State Pollution Control Board (JSPCB)



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

**Test Certificate** 

Discipline	Chemical	Group	Atmospheric Po	llution	Sample Descrip	otion F	Fugitive Dust Emission						
Report Rele	ase Date	25th Janua	ry, 2023	100	Report ID	Y	YBAEEL-230120-113953-E01						
W. Order/ J	SPCB App. No.	JIPL/132/2	022-23		Work Order Da	te 06	6.01.2023						
Type of Ind	ustry (If any)	Sponge Iro	on Unit		Job code/ Ref.	no. Y	BAEEL	A/L/A/Jan-2	3/42				
Report Issu		M/s Jharkhand Ispat Pvt. Ltd. Village & Post - Hesla, Argada, Dist Ramgarh											
Sampling P	eriod	23/01/2023		Mode o	of sample collection	EEL Team							
Sampling P	rotocol	IS:5182			- TELL		-						
1 0													
Sampling	ocations	A. N	laterial Handling Are	ea	1	23º38'57"	, 85º27'4	8"E	all'				
Sampling L	ocations	A. N B. P	laterial Handling Ar roduct Handling Ar	ea ea	1	23º38'57"1 23º38'56"1	N, 85º27'4	8"E 2"E	Care and				
Sampling L	ocations cal Cond. of Field	A. N B. P W.C Clea	laterial Handling Ar roduct Handling Ar ar	ea ea RH % -	55	23º38'57"1 23º38'56"1 Temp	N, 85º27'4 N, 85º27'5: 26ºC	8"E 2"E WD-	NW-SF				

\*\*Toct Poculte \*\*\*\*\*

$\sim$			Test Results							
	Parameters	Test Methods	Unite	Sampling	CINE CONTRACT					
		rest methods	Units	Site A	Site B	Limits				
	Particulate matter (RSPM)	Gravimetric Method	µg/m <sup>3</sup>	445.4	521.7	2000				

Limit is specified as	G.S.R. 414 (E), 30 <sup>th</sup> 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 par IS 106-1066 (C)	
Specific contractual notes	All values are expressed in as unit and results listed refer only to the tested sample and applicable parameters in a bit Remandet Exciting	
	This report, in full or in part, shall not be used for advertising or as evidence in any court of law	<u>y</u> .
AND MAKET	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 pertificate unless specified otherwise	Ac
	The liability of the laboratory is limited to the invoiced amount.	1ª
	All disputes are subjected to the Ranchi Jurisdiction.	to a
Remarks	Samples comply with prescribed limits.	

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

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







ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Accredited by: Certified by:-

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



#### **Test Certificate**

ULR (Unique	Lab Report) No.		T	C	4	0	3 2	2	2	0	0	0	0	0	1	8	6	4	F
Discipline	Chemical	Group		Water	r		Sam	ple De	scrip	tion			Ground Water						
Report Relea	ase Date	13th November	2022				Report ID						YBAEEL-221111-132956-GW01					1	
W. Order/ JS	SPCB App. No.	JIPL/101/2022-	23				Wor	Orde	r Dat	9			11.11.2022						
Type of Indu	istry(If any)	Sponge Iron U	nit				Job code/ Ref. no.					)	BAE	EL/WA	/L/C/N	lov2	2/06		
Report Issue	Near P.N Ba DistRamga	nk Ma irh, Jh	ain Ro narkh	and-8	amga 29122	rh Car 2 Mod	tt. e of sa	mple	colle	ction		E	By Cu	stom	er		-		
Sampling Pr	rotocol	N/A		_	-	115	Sam	ple Co	de			8	1	22111	0-GW	-X01		1	
Sampling Lo	ocation	Borewell		2.2			Sam	pling	Sourc	e			(	Grour	nd Wa	ter			
Sample pkg.	. Condition	Sealed Pack	P Bottle Sample (					Sample Quantity					3000 1	nl					
Meteorologi	cal Cond. of Field	W.C N/A					RH % - N/A						Temp	. – N//	A	1.0	1		
Sample rece	eipt Date	10/11/2022	An	alysis	Starte	ed on	10/11/2022 Analysis				sis completed on 13/11/2022					ł			

SI	Parameter	Test Method	Units	MU %	Results	Limits			
1.	pH value	IS 3025 (P-11):2002	IS 3025 (P-11):2002	IS 3025 (P-11):2002	IS 3025 (P-11):2002	pН	1.77	6.92	6.5-8.5
2.	Colour	IS 3025 (P-04):1983	Hazen		10	5-15			
3.	Conductivity	IS 3025 (P-14):2013	µs/cm	1.90	1080.0				
4.	Turbidity	IS 3025 (P-10):2002	NTU	3.63	2.0	1-5			
5.	Total Alkalinity (as CaCO <sub>3</sub> )	IS 3025 (P-23):2003	mg/l	3.68	156.0	200-600			
6.	Total Hardness (as CaCO <sub>3</sub> )	IS 3025 (P-21):2009	mg/l	1.35	340.0	200-600			
7.	Total dissolved solids	IS 3025 (P-16):2006	mg/l	2.85	648.0	500-2000			
B.	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	122.0	-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 <sub>3</sub> -)	APHA 4500 NO3- (B) 23rdedition 2017	mg/l	11.33	2.56	45-No relaxation			
12.	Calcium (as Ca2+)	IS 3025 (P-40): 2003	mg/l	4.19	120.2	75-200			
13.	Magnesium (as Mg <sup>2+</sup> )	APHA 3500 Mg B : 2017	mg/l	1.90	9.6	30-100			
14.	Sulphate (as SO42-)	IS 3025 (P-24):2003	mg/l	5.42	116.0	200-400			

\*\*Tost Results \*\*\*\*\*

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 Tested By - Customer

- Akash Khalkho (Lab Analyst)





**ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY** 

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



#### **Test Certificate**

Discipline	Chemical	Group	Water	Sample Description	Ground Water	
Report Rele	lease Date 13th November, 2022			Report ID	YBAEEL-221111-132956-GW01	
W. Order/ J	SPCB App. No.	JIPL/101/2022-	23	Work Order Date	11.11.2022	
Type of Ind	ustry(If any)	Sponge Iron U	nit	YBAEEL/WA/L/C/Nov22/06		
Report Issu	e to	M/s Jharkha Near P.N Ba DistRamga	nd Ispat Pvt. Ltd nk Main Road Ramga nh, Jharkhand-829122	and the second se		
Sample Rec	eived Date	10/11/2022	can's	'Mode of sample colle	ction By Customer	
Sampling P	rotocol	N/A	P. Ash P.	Sample Code	221110-GW-X01	
Sampling L	ocation	Borewell	6.07 M	Sampling Source	Ground Water	
Sample pkg	. Condition	Sealed Pack	in PP Bottle	Sample Quantity	3000 ml	
Meteorologi	ical Cond. of Field	W.C N/A	1.43	RH % - N/A	Temp. – N/A	
Sample rece	eipt Date	10/11/2022	Analysis Started on	10/11/2022	Analysis completed on 13/11/2022	

#### \*\*\*\*\*\*Test Results \*\*\*\*\*\*

SI	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 PO43-)	IS 3025 (P-31):2003	mg/l	-	BDL (MDL 0.003)	-
	1 - F. T.	******	nd of Report*****			

IS 10500: 2021							
MDL : Minimum detection limit, BDL : Below detection limit.							
Laboratory is maintaining. Temperature 27 ± 2°C and Relative Humidity 65 + 5% in all testing areas as ner (\$ 196:1966 (C)							
All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in ( ab'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.							
Sample complies with prescribed limits.							

Sample Drawn By Tested By

ISO 45001:2018

- Customer Akash Khalkho (Lab Analyst)









**ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY** 

Accredited by: -Certified by : -

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



#### **Test Certificate**

ULR (Unique	ULR (Unique Lab Report) No.				4	0	3	2	2	2	0	0	0	0	0	1	8	6	7	F
Discipline	Chemical	Group		Water			Sa	Sample Description					Ť	Residue & Contaminants in Water						
Report Rele	ase Date	13th November	r, 2022				Report ID							YBAEEL-221111-132956 -GW01						
W. Order/ JSPCB App. No. JIPL/101/2022-23						1.0	Wo	ork Or	der [	Date				+	11.11.	2022			the said	
Type of Ind	ustry(If any)	Sponge Iron U	Init				Job code/ Ref. no.						YBAE	EL/WA	/L/R/N	lov2	2/04			
Report Issu	Report Issue to M/s Jharkhand Ispat Pvt. Ltd Near P.N Bank Main Road Ramgarh Cantt. DistRamgarh, Jharkhand-829122					41	_													
Sample Rec	ceived Date	10/11/2022					Mo	de of	sam	ple c	ollec	tion	-		By Cu	stom	er			
Sampling P	rotocol	N/A		_			Sa	mple	Code	•					22111	0-GW	-X01	12		
Sampling L	ocation	Borewell					Sa	mplin	g So	urce					Grou	nd Wa	ter			
Sample pkg	. Condition	Sealed Pack	in PP E	Bottle			Sample Quantity						1000	ni				_		
Meteorolog	ical Cond. of Field	W.C N/A				18	RH	% - 1	I/A					Temp. – N/A					-	
Sample rec	eipt Date	10/11/2022	Ana	lysis	Starte	d on	10/11/2022 Analysi				is c	is completed on 13/11/2022								

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	1							
Copper (as Cu)	APHA 3111 B 23rd edition 2017	mg/l	11.11	BDL (MDL 0.01)	0.05-1.5	1							
Iron (as Fe)	APHA 3111 B 23rd edition 2017	mg/l	2.34	0.34	1.0-No relaxation								
Lead (as Pb)	APHA 3111 B 23rd edition 2017	mg/l	10.64	BDL (MDL 0.02)	0.01-No relaxation	T							
Zinc (as Zn)	APHA 3111 B 23rd edition 2017	mg/l	15.35	BDL (MDL 0.1)	5-15								
Cadmium (as Cd)	APHA 3111 B 23rd edition 2017	mg/l	5.0	BDL (MDL 0.02)	0.003-No relaxation	1							
Mercury (as Hg)	APHA 3112 B 23rd edition 2017	mg/l	8.47	BDL (MDL 0.003)	0.001-No relaxation	1							
Chromium (as Cr)	APHA 3111 B 23rd edition 2017	mg/l	12.53	BDL (MDL 0.02)	0.05-No relaxation	1							
	Parameter Arsenic (as As) Copper (as Cu) Iron (as Fe) Lead (as Pb) Zinc (as Zn) Cadmium (as Cd) Mercury (as Hg) Chromium (as Cr)	ParameterTest MethodArsenic (as As)APHA 3114 B 23rd edition 2017Copper (as Cu)APHA 3111 B 23rd edition 2017Iron (as Fe)APHA 3111 B 23rd edition 2017Lead (as Pb)APHA 3111 B 23rd edition 2017Zinc (as Zn)APHA 3111 B 23rd edition 2017Cadmium (as Cd)APHA 3111 B 23rd edition 2017Mercury (as Hg)APHA 3112 B 23rd edition 2017Chromium (as Cr)APHA 3111 B 23rd edition 2017	ParameterTest MethodUnitsArsenic (as As)APHA 3114 B 23rd edition 2017mg/lCopper (as Cu)APHA 3111 B 23rd edition 2017mg/lIron (as Fe)APHA 3111 B 23rd edition 2017mg/lLead (as Pb)APHA 3111 B 23rd edition 2017mg/lZinc (as Zn)APHA 3111 B 23rd edition 2017mg/lCadmium (as Cd)APHA 3111 B 23rd edition 2017mg/lMercury (as Hg)APHA 3112 B 23rd edition 2017mg/lChromium (as Cr)APHA 3111 B 23rd edition 2017mg/l	Parameter         Test Method         Units         MU %           Arsenic (as As)         APHA 3114 B 23rd edition 2017         mg/l         10.34           Copper (as Cu)         APHA 3111 B 23rd edition 2017         mg/l         11.11           Iron (as Fe)         APHA 3111 B 23rd edition 2017         mg/l         11.11           Iron (as Fe)         APHA 3111 B 23rd edition 2017         mg/l         2.34           Lead (as Pb)         APHA 3111 B 23rd edition 2017         mg/l         10.64           Zinc (as Zn)         APHA 3111 B 23rd edition 2017         mg/l         15.35           Cadmium (as Cd)         APHA 3112 B 23rd edition 2017         mg/l         5.0           Mercury (as Hg)         APHA 3112 B 23rd edition 2017         mg/l         8.47           Chromium (as Cr)         APHA 3111 B 23rd edition 2017         mg/l         12.53	ParameterTest MethodUnitsMU %ResultsArsenic (as As)APHA 3114 B 23rd edition 2017mg/l10.34BDL (MDL 0.003)Copper (as Cu)APHA 3111 B 23rd edition 2017mg/l11.11BDL (MDL 0.01)Iron (as Fe)APHA 3111 B 23rd edition 2017mg/l2.340.34Lead (as Pb)APHA 3111 B 23rd edition 2017mg/l10.64BDL (MDL 0.02)Zinc (as Zn)APHA 3111 B 23rd edition 2017mg/l15.35BDL (MDL 0.02)Cadmium (as Cd)APHA 3111 B 23rd edition 2017mg/l5.0BDL (MDL 0.02)Mercury (as Hg)APHA 3112 B 23rd edition 2017mg/l8.47BDL (MDL 0.03) Chromium (as Cr)APHA 3111 B 23rd edition 2017mg/l12.53BDL (MDL 0.02)	ParameterTest MethodUnitsMU %ResultsLimitsArsenic (as As)APHA 3114 B 23rd edition 2017mg/l10.34BDL (MDL 0.003)0.01-No relaxationCopper (as Cu)APHA 3111 B 23rd edition 2017mg/l11.11BDL (MDL 0.01)0.05-1.5Iron (as Fe)APHA 3111 B 23rd edition 2017mg/l2.340.341.0-No relaxationLead (as Pb)APHA 3111 B 23rd edition 2017mg/l10.64BDL (MDL 0.02)0.01-No relaxationZinc (as Zn)APHA 3111 B 23rd edition 2017mg/l15.35BDL (MDL 0.02)0.001-No relaxationZinc (as Zn)APHA 3111 B 23rd edition 2017mg/l15.35BDL (MDL 0.1)5-15Cadmium (as Cd)APHA 3111 B 23rd edition 2017mg/l5.0BDL (MDL 0.02)0.003-No relaxationMercury (as Hg)APHA 3112 B 23rd edition 2017mg/l8.47BDL (MDL 0.003)0.001-No relaxationChromium (as Cr)APHA 3111 B 23rd edition 2017mg/l8.47BDL (MDL 0.02)0.05-No relaxation							

cho or Report
IS 10500: 2021
MDL : Minimum detection limit, BDL : Below detection limit,
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Sample complies with prescribed limits.

Sample Drawn By

Customer





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#### **Jest Certificate**

Discipline	Chemical	Group	Water	Sample Description	Residue & Contaminants in Water		
Report Rele	ase Date	13th November	, 2022	Report ID	YBAEEL-221111-132956 -GW01		
W. Order/ J	SPCB App. No.	JIPL/101/2022-	23	Work Order Date	11.11.2022		
Type of Ind	ustry(If any)	Sponge Iron U	nit	Job code/ Ref. no.	YBAEEL/WA/L/R/Nov22/04		
Report Issu	e to	M/s Jharkha Near P.N Ba DistRamga	and Ispat Pvt. Ltd ank Main Road Ramgai arh, Jharkhand-829122	h Cantt.	and the second sec		
Sample Rec	eived Date	10/11/2022	. april 1	Mode of sample collection By Customer			
Sampling P	rotocol	N/A	Course Providence	Sample Code	221110-GW-X01		
Sampling L	ocation	Borewell	la l	Sampling Source	Ground Water		
Sample pkg. Condition Sealed Pack in PP Bottle				Sample Quantity	1000 ml		
Meteorologi	ical Cond. of Field	W.C N/A	111	RH % - N/A	Temp. – N/A		
Sample reco	eipt Date	10/11/2022	Analysis Started on	10/11/2022	Analysis completed on 13/11/2022		

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

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 ner IS 196:1965 (C)								
Specific contractual notes	All values are expressed in as unit and results listed refer only to the tested sample and anticable parameter in Lab's Permanent Earlier.								
	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.	-							
The second se	All disputes are subjected to the Ranchi Jurisdiction.								
Remarks	Sample complies with prescribed limits.								

Sample	Drawn	By	- Customer
Compie	Distanti	~,	- oustonie

ISO 450

Juani	22		13/11/22	2
Tested by		Ve	rified & Issued by	
Shivani Kumari Singh			Umesh Das	1.0100
(Lab Analyst)		Au	thorized Signatory	1.0
and the second s	and starting its	Yuga Environn	Chemical Section ntar Bharati Analytic nental Engineering Lal	cal & poratory
Jamshedpur	Dhanbad	Hazaribag	Pakur	- (1
	Tested by Shivani Kumari Singh (Lab Analyst)	Tested by . Shivani Kumari Singh (Lab Analyst)	Tested by	Tested by Verified & Issued by Umesh Das (Lab Analyst) Verified & Issued by Umesh Das Authorized Signatory Authorized Signatory Chemical Section Yugantar Bharati Analytic Environmental Engineering Lab

Ph : 098351-97960, 098357-86677, Email - ybaeel@gmail.com, Web - https://ybaeel.in



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



**Test Certificate** 

ULR (Unique	Lab Report) No.		T	C	4	0	3	2	2	2	0	0	0	0	0	1	8	5	5	F
Discipline	Biological	Group	Water				Sample Description						Ground Water							
Report Release Date 12th November, 2022						Report ID YBAEEL-221111-1						13295	32956-GW01							
W. Order/ J	SPCB App. No.	JIPL/101/2022-2	JIPL/101/2022-23					Wor	k Or	der D	ate	- 63		11.11	.2022				-	
Type of Indu	ustry(if any)	Sponge Iron Ur	nit	1	1.0			Job	code	/ Ref	. no.			YBAB	ELM	A/L/M/	Nov	22/04		
Report Issu	e to	Near P.N Bar DistRamgar	nk Ma rh, Jh	in Ro arkha	and-8	amga 32912	arh ( 2 Mode	Cantt.	mole	colle	oction			Pv C	untor		1		1	
Sampling P	rotocol	N/A					Sam		de	COIN	221110 CW Vot						-	-		
Sampling Lo	ocation	Bore well		3	1		Sam	oling S	Sourc	e	-		Ground Water				-			
Sample pkg	ample pkg. Condition		Sealed Pack in PP Bottle			ttle Sample Quantity					250m	1				-	-			
Meteorologi	cal Cond. of Field	W.C N/A				RH % - N/A					Tem	N/	A		~		-			
Sample rece	eipt Date	10/11/2022	A	nalysi	s Sta	rted o	n	10/11	2022		-	A	naly	sis co	alamo	ted or		12/11/	2022	

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

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

IS 10500: 2012	
MDL : Minimum detection limit, BDL : Below detection limit,	N. S. M.
Laboratory is maintaining. Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).	- the
All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Perma	nent 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.	· · · ·
Sample complies with prescribed limit.	
	IS 10500: 2012 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. Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C). All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Perma 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. Sample complies with prescribed limit.

Sample Drawn By - Customer





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## YUGANTAR BHARATI

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#### **Test Certificate**

Report Release Date	13th November, 2022	Report ID	YBAEEL-221111-132956-WL			
W. Order/ JSPCB App. No.	JIPL/101/2022-23	Work Order Date	11.11.2022			
Type of Industry(If any)	Sponge Iron Unit	Job code/ Ref. no.	YBAEEL/WA/L/C/Nov22/06			
Report Issue to	M/s Jharkhand Ispat Pvt. Near P.N Bank Main Roa DistRamgarh, Jharkhan	Ltd d Ramgarh Cantt. rd-829122	and and a second second			
Sampling Date	11/11/2022	Mode of sample collection	By YBAEEL Team			
Meteorological Cond. of Field	W.C Clear	RH % - 55	Temp - 28			

#### \*\*\*\*\*\*Test Results \*\*\*\*\*\*

SI	Location	Ground Water Level (mbgl)
1.	Near Store Office	5.0

\*\*\*\*\*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 $\pm$ 2°C and Relative Humidity 65 $\pm$ 5% in all testing areas as per IS 196-1966 (C)
Specific contractual	All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility
1000	This report, an full of in part, shall not be used for adventising or as evidence in any court of law.
	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	

	Devonal 13/11/22	. All and a second		13/11/22	
	Verified by		0	ssued by	
	Sanjeev Kumar Singh		U	mesh Das	
	Deputy Technical Manager		Tech	nical Manager	
			Ch Yuganta Environment	emical Section r Bharati Analytical & al Engineering Laboratory	9
Branch Office : -	Jamshedpur	Dhanbad	Hazaribag	Pakur	:(1
Ma	ain Office : Namkun	Post Office, Sidroul,	Ranchi - 834010, Jhar	khand	

TC-4032



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Certified by : -

Just Discrete State Pollution Control Board (JSPCB) Just Science State State Pollution Control Board (JSPCB)

#### **Test Certificate**

ULR (Unique	Lab Report) No.		T	C	4	0	3	2	2	3	0	0	0	0	0	0	3	5	5	F
Discipline	Chemical	Group	Group Atmospheric Pollution			Sample Description			Ambient Noise											
Report Rele	ase Date	31 <sup>st</sup> March, 2	023					Rep	ort I	D			*	YE	AEEL	-2303	24-14	3439-	N01	-5 3
W. Order/ J	SPCB App. No.	15893987				5		Work Order Date			24.03.2023									
Type of Indu	ustry (If any)	Sponge Iron					Job code/ Ref. no.			YBAEEL/WA/L/A/Mar-23/15										
Report Issu	e to	M/s Jharkha Village - He Dist. – Ram	and Pri sla, PO garh, J	vate ) - Ar Ihark	Limi gada hand	, , I.						-	1	N.	30		124	R-	e d	and the
Sampling Po	eriod	28/03/2023 - 29/03/2023 Mode			lode	ode of sample collection			By YBAEEL Team											
Sampling Pr	rotocol	IS 9989:1981 (RA 2020)																		
Meteorologi	cal Cond. of Field	W.C Clear			1		RH %	6 - 42	100					Te	mp	32ºC	S. Ser			
Sample rece	eipt Date	29/03/2023	Analy	ysis S	tarte	d on	2	9/03/2	2023	11125		An	alysi	s co	mplet	ed on	3	1/03/20	)23	-
		-gh - s			*****	Test R	esulte	****	**								_			-

SI	Locations	Parameters	Units	MU %	Day Time (6.00 a.m. to 10.00 p.m.)	Night Time (10.00 p.m. to 6.00 a.m.)	Limits
1.	Near Main Gate	Leq	dB (A)	3.32	70.6	67.2	- OF MARKET
2.	Near ESP Stack	Leq	dB (A)	3.32	66.7	64.2	Day - 75
3.	Near Online PM-10 Analyser	Leq	dB (A)	3.32	71.2	68.4	Night – 70

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

•	Silence zone is an area comprising not less than 100 meters around hospitals,	and the	Area	Unit	Day Time	Night time
	declared as such by the competent authority.	А	Industrial Area	dB (A)	75.0	70.0
•	Mixed categories of areas may be declared as one of the four above mentioned	В	Commercial Area	dB (A)	65.0	55.0
	dB(A) Leg denotes the time weighted average of the level of sound in decibels on	С	Residential Area	dB (A)	55.0	45.0
	scale(A) which is relatable to human hearing.	D	Silence Zone	dB (A)	50.0	40.0

Limit is specified as	Noise pollution (Regulation & Control) Rules, 2000.
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 fasting 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 Eacility.
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	The liability of the laboratory is limited to the invoiced amount.
Children and Chi	All disputes are subjected to the Ranchi Jurisdiction.
Remarks	Samples comply with prescribed limit.

Sample Drawn By Tested By

State Pollution

Control Board

Angad Munda
Akash Khalkho (Lab Analyst)

8851T03/23	and the second	218/09	ía,
Verified by		STI USA -	ied by
Sumit Kant Srivastava		Sanjeev I	Kumar Singh
(Sr. Lab Analyst)		(Technical Manager)	
		Authorize Atmospha	d Signatory ric Pollution
		Yugantar Bha Environmental En	rati Analytical & gineering Laboratory
	Dhashad	L Des selles s	Deluis



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# Report

#### Annexure - 13

## on

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

### Jharkhand Ispat PVT. LTD.

Vill: Hesla, P.O.: Argada, Dist.: Ramgarh, Jharkhand



**Prepared By** 



Institute for Environmental Management Ranchi, Jharkhand, 834002

December- 2022

#### **Preface**

A report on GHG emission Inventory and its reduction including Carbon Sequestration through plantation for steel plant has been prepared of Jharkhand Ispat Pvt. Ltd. (JIPL) operating a Sponge Iron Plant having two (2) Nos .of coal based Rotary Kilns, each of 100 TPD capacity at village: Hesla, District: Argada in the state of Jharkhand since 2003. The report is prepared based on the secondary data provided by JIPL

Name and address of manufacturing facility:

Jharkhand Ispat Pvt. Ltd.

At- Hesla, Post- Argada - 829122,

Dist. - Ramgarh (Jharkhand)

E-mail: jipllegal@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.



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#### 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 tCO2eq, 2.6 kg NOx, 1.8 kg SOx and 1.4kg PM2.5. 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 tCO2eq/year in global warming potential, 59.02 thousand tSO2eg/year in acidification potential and 287.2 thousand tPM2.5eg/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 fuelswitching from coal to natural gas, and then from natural gas to hydrogen.

Jharkhand Ispat Pvt. Ltd. (JIPL) is a registered company under the Company's Act. It is operating a steel plant having two (2) Nos of Sponge Iron Plant.of coal based Rotary Kilns, each of 100 TPD capacity at village: Hesla, District: Argada in the state of Jharkhand since 2003. 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.

JIPL has installed 2x100TPD (Sponge Iron plants) DRI Units at village: Hesla, District: Argada in the state of Jharkhand since 2003 after getting NOC from Jharkhand Pollution Control Board (JSPCB) and subsequently Consent to Operate from JSPCB.

Now JIPL 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. 2x100 TPD DRI Kilns for production of 60,000 TPA sponge Iron And 2x12T Induction furnaces along with Continuous Casting Mill for 72,000 TPA Billet Production were installed after getting NOC from Jharkhand Pollution Control Board (JSPCB) on 6th November, 2006. JIPL submitted application on 11.01.2013 for grant of TOR for obtaining EC for 2x100 TPD Sponge Iron Plant and 240 TPD MS Billet Plant which are under violation and installation of 1x12 Ton Induction Furnace, 90,000 TPA Rolling Mill & 12 MW Power Plant under expansion.





## Chapter - 2

#### **Project Description**

Overview of direct reduction process

The basic mechanism behind iron production involves two main pathways,

- 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, Lurgi Chemie, Republic Steel Company and National 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  $\sim 2.5^{\circ}$  to facilitate movement of the charge



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).

$$3Fe_{203} + CO \rightarrow 2Fe_{304} + CO_2 - 44.46 \, kJ/mol$$
 (1)

$$Fe_{304} + CO \rightarrow 3Fe_{0} + CO_{2} + 3.07 \, kJ/mol$$
 (2)

$$FeO + CO \rightarrow Fe + CO_2 - 11.12 \, kJ/mol \tag{3}$$

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.

$$C + CO_2 \rightleftharpoons 2CO + 167.52 \, kJ/mol$$
 (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  $2Fe_{2O3} + 3C \rightarrow 4Fe + 3CO_2 + 432.52 \text{ kJ/mol}$  (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 due to 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 CaCO3 and MgCO3 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<sub>2</sub> 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).



S. No	Particulars	Details
1.	Latitude	23 <sup>0</sup> 38' 48.47"N
2.	Longitude	85 <sup>0</sup> 27'37.77"E
3.	Altitude	335 m above MSL
4.	Toposheet	73 E/6 & 73 E/10
9.	Nearest village/Habitation	City Ramgarh at 6 kms
10.	Nearest Town	Ramgarh
11.	Nearest Police Station	Ramgarh Police Station, 5.0 Km in SE
12.	Nearest Post office Ghutu Post office	Argada Post office - 600 meter in NE direction
13.	Nearest River	River Damodar at 300 meter in south direction.
15	Nearest Temple	Bajrangwali Temple at 1 km in North East
16.	Nearest School	Argada Primary school by 1.0 km
17.	Nearest Bus Stop	Digwar High School 2.6 km in NW direction
18.	Nearest Medical	CCL Hospital at a distance of 3 km
19.	Nearest airport	Birsa Munda Airport Ranchi is at 45 kms in SW
20.	Sanctuaries /National Parks/ Biospheres, etc	Not within 10 km radius of the project site
24.	Reserve Forest/ Protected Forest	No Reserve forest present in 10 Km radius of plant area. Few protected forests present in 10 km radius
26	Total Water Requirement	Existing (Non-violating): 170 KLD Existing (Violating): 406 KLD, Proposed: 2330 KLD Total after Expansion: 2906 KLD Source: Damodar Valley Corporation
27.	Total Power Requirement	Existing - 10.5 MW (Non-Violating - 0.8 MW & 9.7 MW for violating Units) Proposed - 7.5 MW (Expansion) Total after expansion: 18.00 MW DG Set Existing: 2x500KVA, 1 x320KVA & 1x750KVA Proposed: 1x500KVA Fuel: HSD: 1000 litres/day (For Emergency and Start up only)
28.	Total Manpower	Non-Violating: 120, Violating: 100 Proposed: 174, Total: 394

## Table 2.1: Salient Features of the Project

29.	Total capital cost	Existing (Non-violating): Rs. 22.41 Crs. Existing (Units under Violation): Rs. 31.71 Crs. Proposed Units: Rs.186.63 Crs. Total: 240.75 Crs.
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Power Plant Waste	Total 18 MW	18 MW	
Heat BoilersAFBC			18MW (Captive
Boiler			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	PRODUCTI ON(TPD)	PRODUCTION(TPA)
EXISTING				
Sponge Iro	n Plant	4x 100 T /day of DRI	400 TPD	120,000T
PROPOSE	D			
Steel Makir	ng Shop,			
Induction F	urnaces	3 x 12 T	360 T	108,000 T
and Billet C	Caster			
Rolling	Mill	15 Stand Mill with	300 T	90,000 T
	_	Direct Hot Charging		
TMT Rebai	<sup>r</sup> Mill			



#### SPONGE IRON PLANT (Existing)

Sponge Iron Plant is having two (2) Nos. Coal Based Rotary Kilns each of 100 TPD Capacity, with an annual capacity of 60,000 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 varying its slope and speed of rotation. There are inlet and outlet cones at opposite ends 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.

Unit	Installed	Working	Annual Production
	Capacity	Days	
Sponge Iron Plant	4x100 TPD	300	65,598 MT of Sponge Iron
Water	Make Up Water	300	170.84 m³/day
Requirement		•••	
Power		300	950 KVA
Requirement			
Raw Material	Raw Material	Size (mm)	Quantity (MT/Annum)
Requirement	Coal	20 & below	98397
	Iron ore Pellets	5-18	126669.7
	Dolomite	2-4	2427
	MS Scrap		1491.24
	Pig Iron		343.42
	Sponge Iron		39640.48

Table 2.3: Raw Material Requirement for Existing Sponge Iron Plant

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.



#### 3.0. Greenhouse Gas Emission

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.

Section	Technology	Process flow
Sponge Ironplant	Coal Based RotaryKiln Process	<ul> <li>Feeding of RM to the Rotary Kiln through feed tube  Cooling in the rotary cooler </li> <li>Screening </li> <li>magnetic separation of the product </li> <li>spongeiron </li> <li>Other outputs - Char</li> </ul>

#### Figure 4: Material flow for sponge iron plant

Table 3.1: Raw Material Requirement



#### LAND USE

The total project area is about 25.54 Acres (10.34 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.

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:

SL	TYPE OF USE	Are a				
No		Acres	Hectare s			
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			

Table 3.2. Land Use of Fiant Lavou	Table	3.2:	Land	Use	of	Plant	Lavout
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#### Table3.3: Emission factors of GHG gases from different energy fuel sources

Energy sources	kg CO₂/kg fuel	kg CH₄/kg fuel	kg N₂O/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<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O have been calculated and reported in the form of CO<sub>2</sub>-equvalent. Within the defined system boundary, mass and energy inputs for the processes within the boundary are included.

#### CO<sub>2</sub> Emission:

The GHG emissions 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<sub>2</sub> emissions have been calculated using carbon content data that are expressed on a mass or volume basis. (Equation no\_)

Mass basis: 
$$E = A_{\rm F} \cdot F_{\varphi} \cdot E \cdot \frac{44}{12}$$
 ---- 1

Volume basis:  $E = A_{\text{ff}} \cdot F_{gn} \cdot F_{b} \cdot \frac{44}{12} - ---2$ 

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<sub>2</sub> emitted (metric tons)

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

*A<sub>f,m</sub>* = 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<sub>2</sub>

$$E = A \cdot HV_{f} \cdot F_{c,h} \cdot F_{12} - --- 3$$

Equation No. 3: Calculating CO<sub>2</sub> 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<sub>f</sub> = 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<sub>OX</sub> = Fraction oxidation factor

44/12 = The ratio of the molecular weight of carbon to that of CO<sub>2</sub>.

#### $CH_4$ and $N_2O$ emissions:

The N<sub>2</sub>O and CH<sub>4</sub> emissions from Electricity Generation and Reheating Furnaces can be calculated using Equation 4.

 $E = \mathbf{f} \cdot HHV_{\mathbf{f}} \cdot EF \cdot GWP -----4$ 

 $E = f. HHV_{f}. ESEF . GWP -----5$ 



Equation :: Calculating N<sub>2</sub>O and CH<sub>4</sub> emissions

Where:

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

A<sub>f</sub> = 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  $N_2O$ 

Process Materials	Carbon Content* (kg C/kg)
Blast Furnace Gas	0.17
Charcoal <sup>a</sup>	0.91
Coal	0.67 <sup>1</sup>
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 <sup>2</sup>
EAF Charge Carbon	0.83 <sup>3</sup>
Fuel Oil	0.864

#### Table 3.4: Carbon contents for materials consumed in process sources



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 CH4 & N2O contents for materials consumed inprocess sources

Fuel		Lo Value(I Valu	ower∣ _HV)/ ıe (N(	Heating Net Ca CV) Ba	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 <sub>4</sub>	N <sub>2</sub> O	CH4	N <sub>2</sub> O	CH4	N <sub>2</sub> O	CH4	N <sub>2</sub> O
Crude			0.6	0.13		2.85	0.5	0.12	
oil and	Crude oil	3.000	00	4	0.027	0	70	7	0.025



derived			0.6	0.08		2.85	0.5	0.08	
substan	Orimulsion	3.000	00	7	0.017	0	70	3	0.017
ces			0.6	0.14		2.85	0.5	0.13	
	Natural Gas Liquids	3.000	00	0	0.028	0	70	3	0.027
			0.6	0.14		2.85	0.5	0.13	
	Motor Gasoline	3.000	00	0	0.028	0	70	3	0.027
			0.6	0.14		2.85	0.5	0.13	
	Aviation Gasoline	3.000	00	0	0.028	0	70	3	0.027
			0.6	0.14		2.85	0.5	0.13	
	Jet Gasoline	3.000	00	0	0.028	0	70	3	0.027
			0.6	0.13		2.85	0.5	0.13	
	Jet Kerosene	3.000	00	9	0.028	0	70	2	0.026
			0.6	0.13		2.85	0.5	0.13	
	Other Kerosene	3.000	00	8	0.028	0	70	1	0.026
			0.6	0.12		2.85	0.5	0.11	
	Shale oil	3.000	00	0	0.024	0	70	4	0.023
			0.6	0.13		2.85	0.5	0.12	
	Gas/.Diesel oil	3.000	00	6	0.027	0	70	9	0.026
			0.6	0.12		2.85	0.5	0.12	
	Residual Fuel oil	3.000	00	8	0.026	0	70	1	0.024
	Liquified Petroleum		0.1	0.05		0.90	0.0	0.04	
	Gases	1.000	00	3	0.005	0	90	7	0.005
			0.1	0.05		0.90	0.0	0.04	
	Ethane	1.000	00	2	0.005	0	90	6	0.005
								0 t	A REAL PROPERTY OF

			0.6	0.14		2.85	0.5	0.13	
	Naphtha	3.000	00	1	0.028	0	70	4	0.027
			0.6	0.12		2.85	0.5	0.12	
	Bitumen	3.000	00	7	0.025	0	70	1	0.024
			0.6	0.12		2.85	0.5	0.12	
	Lubricants	3.000	00	7	0.025	0	70	1	0.024
			0.6	0.10		2.85	0.5	0.09	
	Petroleum coke	3.000	00	3	0.021	0	70	8	0.020
			0.6	0.13		2.85	0.5	0.12	
	Refinery feedstocks	3.000	00	6	0.027	0	70	9	0.026
			0.1	0.05		0.90	0.0	0.05	
	Refinery Gas	1.000	00	5	0.006	0	90	0	0.005
			0.6	0.12		2.85	0.5	0.12	
	Paraffin waxes	3.000	00	7	0.025	0	70	1	0.024
			0.6	0.12		2.85	0.5	0.12	
	White Spirit & SBP	3.000	00	7	0.025	0	70	1	0.024
	Other petroleum		0.6	0.12		2.85	0.5	0.12	
	products	3.000	00	7	0.025	0	70	1	0.024
Coal			1.5	0.02		0.95	1.4	0.02	
and derived	Anthracite	1.000	00	8	0.042	0	25	7	0.040
product			1.5	0.29		9.50	1.4	0.28	
S	Coking coal	10.000	00	7	0.045	0	25	2	0.042
	Other bituminous		1.5	0.27		9.50	1.4	0.25	
	coal	10.000	00	2	0.041	0	25	8	0.039

		1.5	0.19		9.50	1.4	0.18	
Sub-bituminous coal	10.000	00	9	0.030	0	25	9	0.028
		1.5	0.12		9.50	1.4	0.11	
Lignite	10.000	00	5	0.019	0	25	9	0.018
Oil shale and tar		1.5	0.09		9.50	1.4	0.08	
sands	10.000	00	4	0.014	0	25	9	0.013
Brown coal		1.5	0.21		9.50	1.4	0.20	
briquettes	10.000	00	8	0.033	0	25	7	0.031
		1.5	0.21		9.50	1.4	0.20	
Patent fuel	10.000	00	8	0.033	0	25	7	0.031
Coke oven coke &		1.5	0.29		9.50	1.4	0.28	
lignite coke	10.000	00	7	0.045	0	25	2	0.042
		0.1	0.03		0.95	0.0	0.02	
Gas coke	1.000	00	0	0.003	0	95	8	0.003
		1.5	0.29		9.50	1.4	0.28	
Coal tar	10.000	00	5	0.044	0	25	0	0.042
		0.1	0.04		0.90	0.0	0.03	
Gas works gas	1.000	00	3	0.004	0	90	9	0.004
		0.1	0.04		0.90	0.0	0.03	
Coke oven gas	1.000	00	3	0.004	0	90	9	0.004
		0.1	0.00		0.90	0.0	0.00	
Blast furnace gas	1.000	00	3	0.000	0	90	2	0.000
Oxygen steel		0.1	0.00		0.90	0.0	0.00	
furnace gas	1.000	00	8	0.001	0	90	7	0.001

Natural			0.1	0.05		0.90	0.0	0.05	
Gas	Natural Gas	1.000	00	3	0.005	0	90	1	0.005
Non-	Municipal wastes								
biomass	(non-biomass		4.0	0.31		28.5	3.8	0.30	
waste	fraction)	30.000	00	6	0.042	00	00	0	0.040
			4.0			28.5	3.8		
	Industrial wastes	30.000	00	N/A	N/A	00	00	N/A	N/A
			4.0	1.26		28.5	3.8	1.20	
	Waste oils	30.000	00	9	0.169	00	00	6	0.161
			1.5	0.02		1.90	1.4	0.02	
Peat	Peat	2.000	00	1	0.015	0	25	0	0.015
Biomass			4.0	0.49		28.5	3.8	0.46	
waste	Wood/Wood waste	30.000	00	3	0.066	00	00	8	0.062
	Sulphite lyes (Black		2.0	0.03		2.85	1.9	0.03	
	liqour)	3.000	00	7	0.025	0	00	5	0.024
	Other primary solid		4.0	0.36		28.5	3.8	0.34	
	biomass fuels	30.000	00	6	0.049	00	00	8	0.046
		200.00	4.0	6.21		190.	3.8	5.90	
	Charcoal	0	00	1	0.124	000	00	0	0.118
			0.6	0.08		2.85	0.5	0.08	
	Biogasoline	3.000	00	5	0.017	0	70	1	0.016
			0.6	0.08		2.85	0.5	0.08	
	Biodiesels	3.000	00	5	0.017	0	70	1	0.016



		0.6	0.08		2.85	0.5	0.08	
Other liquid biofuels	3.000	00	7	0.017	0	70	2	0.016
		0.1	0.05		0.90	0.0	0.05	
Landfill gas	1.000	00	6	0.006	0	90	0	0.005
		0.1	0.05		0.90	0.0	0.05	
Sludge gas	1.000	00	6	0.006	0	90	0	0.005
		0.1	0.05		0.90	0.0	0.05	
Other biogas	1.000	00	6	0.006	0	90	0	0.005
Municipal wastes		4.0	0.36		28.5	3.8	0.34	
(biomass fraction)	30.000	00	6	0.049	00	00	8	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 decarbonisation process, and also as a source of iron units. Reuse of scrap in BOF helps reducing greenhouse gas emissions.

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

#### Table4.1: Heating and cooling reactions of BOF



#### 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<sub>2</sub> 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 regenerable solvents, which have a 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<sub>2</sub> absorption with MEA

 $MEA + H_3O^+$  : MEA +  $H_2O$  (amine protonation)

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



 $HCO_{3}^{-} + H_{2}O :+ H_{3}O^{+} + CO_{3}^{2-}$  (carbonate formation)

 $MEA + HCO_3^- : + MEACOO^- + H_2O$  (carbamate 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 9.95 acres with total plantation of 6030 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:

1.	Total Area	35.54 acres
2.	Existing Greenbelt	9.95 Acres
3.	Existing no.of plants	6030
4.	Greenbelt Enhancement	4.26 Acres
5.	No. of trees to be planted	2,580



#### 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:

 $W_{above-ground}$  = 0.25 D<sup>2</sup> H (for trees with D<11)  $W_{above-ground}$  = 0.15 D<sup>2</sup> H (for trees with D>11)  $W_{above-ground}$  = 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<sub>total green weight</sub> = 1.2\* W<sub>above-ground</sub>

#### 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<sub>dry weight</sub> = 0.725 \* W<sub>total green weigh</sub>

#### 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.

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



#### 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.

As per the study conducted the total carbon emissions mounts to 75,603 ton for the year 2021-2022. In this respect the sequestered carbon is calculated to be 0.02% approximately. List of existing plant is attached as for >10 years, 5-10 years, < 5 years respectively. Therefore a suitable plan has been suggested for plantation attempting to take this sequestration to the rise of 0.1% approximately in an average period of 3 Years. Plantation plan is attached as Annexure 1. When it comes to sequestration through afforestation, it is the best possibleway 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 sequestrationis 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<sub>2</sub> emission intensity in Jharkhand Ispat Pvt. Ltd. has been calculated using ISO 14404 which is proposed by world steel Association. The CO<sub>2</sub> emission intensity in in Jharkhand Ispat Pvt. Ltd. is in optimum range and not harmful for environment. Still the plant has made a proposed plan to further reduce the CO<sub>2</sub> 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/availability, technoeconomic uncertainties, etc., the development of a robust and

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.



#### CO2 emissions data submission form for worldsteel sectoral approach

#### \*Please do not change downloaded form

Site:	JIPL022
Organization:	JIPL
Year(Report period):	2022

Mandatory to fill-in	n
Stainless steel on	ly
Fill-in if available	
Protected calculation	tion
Fixed value	

Ma

Pro Fix

#### Site structure (the number of operated units)

Coke battery	BF > 1000 m <sup>3</sup>	Open hearth	Cold rolling		A&P lines	
Sinter plant	100 <bf<1000< td=""><td>Hot rolling</td><td>HDG lines</td><td></td><td>Bright A lines</td><td></td></bf<1000<>	Hot rolling	HDG lines		Bright A lines	
Pellet plant	BF < 100 m <sup>3</sup>	Lime kilns	EG lines		Batch Annealing	
Gas DRI	BOF shops	Oxygen plant	Tining lines		Argon/Oxy Decar	b
Coal DRI	EAF units	Power plant	Smelting Reduct	on	Vacuum Oxy Dee	carb

#### **BASIC** information Total coke production (dry t) Sinter production (t) Pellet production (t) Hot metal production (t) DRI production (t) 65,598 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) 49,060 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) 93,039 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) 18 Data verified by external body No

#### Electricity grid Information

Source of information	Energy Equivalent	Upstream CO <sub>2</sub> value
	GJ/MWh	t CO <sub>2</sub> /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	Energy Equivalent	Emission Factor	Upstream CO <sub>2</sub> value	Scope 1 Direct emissions	Scope 1.1 emissions	Scope 2 emissions	Scope 3 emissions	Total Energy
					t C/unit	GJ/unit	t CO <sub>2</sub> /unit	t CO <sub>2</sub> /unit	t CO <sub>2</sub>	t CO <sub>2</sub>	t CO <sub>2</sub>	t CO <sub>2</sub>	TJ
	Iron ore	dry t	94,735		0.010		0.037		3,505			-	-
	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	74,571		0.672	25.900	2.462		1,83,594			-	1,931
	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		8,330		18.800			-			-	- 157
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	m³				37.700	2.907	0.276	-			-	-
	Light oil	m <sup>3</sup>				35.100	2.601	0.247	-			-	-
	Kerosene	m°				34.700	2.481	0.247	-			-	-
	LPG	t				47.300	2.985		-			-	-
	LNG	k.m <sup>s</sup> N			0.550	35.900	2.015	0.665	-			-	-
	Natural gas	k.m <sup>s</sup> N			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 nydrogen	t			0.754	120.000		19.800	-			-	-
New	Fossil free blogas	t devid			0.751	50.400	0.440	0.000	-			-	-
	Limestone Durant lines	ary t			0.120	4.500	0.440	0.050	-			-	-
	Burnt lime	l.	4.045		0.420	4.500	0.470	0.950	-			-	-
	Crude dolomite	aryı	1,815		0.130	4.500	0.476	4 400	804			-	-
	Sinter	t t				4.500		0.262	-				-
	Ballate	+	-			2.430		0.202					-
	FAE electrodes	t 1				2.100	3,663	0.157					
Now	Low carbon iron units	t			0.047	20.900	0.172	1 855					
	Pig Iron	t	15 258		0.047	20.000	0.172	1.855	2 624			28.304	319
	Cold Iron	t	10,200		0.047	20.000	0.172	1.855	2,021				-
	Ni pig iron	t			0.005	20.000	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	39,640	65,598	0.020	17.900	0.073	1.210	- 1,895			- 31,409	- 465
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	74,066			9.800		0.504	-		37,329		726
	Steam	t				3.800		0.195	-		-		-
	Oxygen	k.m <sup>3</sup> N				6.900		0.355	-			-	-
	Nitrogen	k.m <sup>3</sup> N				2.000		0.103	-			-	-
	Argon	k.m <sup>3</sup> N				2.000		0.103	-			-	-



	Coke oven gas	k.m <sup>3</sup> N			0.228	19.000	0.835	0.977	-	-	-		-
	Blast furnace gas	k.m <sup>3</sup> N			0.243	3.300	0.890	0.170	-	-	-		-
	BOF gas	k.m <sup>3</sup> N			0.413	8.400	1.513	0.432	-	-	-		-
New	Waste heat	GJ				1.000		0.051	-		-		-
New	Ethanol	m <sup>3</sup>			0.410	23.575		1.494	-			-	-
New	Methanol	m <sup>3</sup>			0.293	15.662		1.369	-			-	-
New	Ammonia	t				37.500		1.600	-			-	-
	BF slag	t		93,039				0.550	-			- 51,171	-
	BOF slag	t						0.300	-			-	-
New	EAF slag	t						0.300	-			-	-
	CO2 to external use	t					1.000		-			-	-
New	Permanently sequestered CC	t					1.000		-			-	-
	Coal tar	t				37.000	3.389		-			-	-
	Benzole	t				40.570	3.382		-			-	-
	w/o undecided credits	CO2 Intensity	4.54	tCO2/tCrudeSteel	Grand Total	2,22,916	tCO2	Sub Total	1,88,692	-	37,329	- 3,105	
	w/ undecided credits	CO2 Intensity	3.50	tCO2/tCrudeSteel	Grand Total	1,71,745.00	tCO2	Sub Total	1,88,692	-	37,329	- 54,276	2,354
		CI by Slags	- 1.04	tCO2/tCrudeSteel	Slags	- 51,171.00	tCO2	Slags	-	-	-	- 51,171	
		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		47.98	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



				Average Height	Average	the tree	Total Weight	Dry weight	Weight of the	vveight of	Weight of the	Weight of the
Common Name	Plant Spieces	Family	Number	above the	Diameter of	above	of the tree	of the tree	carbon	dioxide	carbon	carbon
		i cinity	Humbor	around	the trunk	around	(pounds)	(pounds)	present	sequestere	sequestered	sequestered
				(feet)	(inches)	(nounds)	(1)	(1	(pounds)	d (pounds)	(tonne)	(tonne/annum)
		1	1			TREES				1		
_	Monoon	Annonacea		10	00	4470000	4704000	4070000	000450	0040704 5	1000 740004	
P		e	300	49	20	1470000	1764000	1278900	639450	2346781.5	1066.718864	300.0729040
Akashmoni	Auriculiformis	Fabaceae	150	78	25	1828125	2193750	1590468.8	795234 375	2918510.2	1326 595526	442 1985085
Mimosa	Acacia farnesiana	Fabaceae	65	82	18	431730	518076	375605.1	187802 55	689235.36	313 2887993	104 4295998
	/ louola la lioola la	Sapotacea				101100	010010	01000011	101002.00	000200.00	01012001000	10111200000
Chiku	Achrassapota	e	50	75	20	375000	450000	326250	163125	598668.75	272.1221591	90.70738636
-		Simarouba										
	Ailanthus excels	ceae	45	65	26.3	505798.31	606957.975	440044.53	220022.266	807481.72	367.0371436	122.3457145
Siris	Albizia amara	Fabaceae	50	64	45	1620000	1944000	1409400	704700	2586249	1175.567727	391.8559091
Frywood	Albizia lebbeck	Fabaceae	45	70	27	574087.5	688905	499456.13	249728.063	916501.99	416.5918134	138.8639378
Karoi	Albizia procera	Fabaceae	35	42	54	1071630	1285956	932318.1	466159.05	1710803.7	777.6380516	259.2126839
N Allin		Apocynace	45	20	40	50000	00004	50700 4	05000.0	00404.004	40.00040040	44 40004070
Milkwood	Alstonascholaris	ae	45	30	12	58320	1490125	50738.4	20309.2	93104.964	42.32043818	14.10081273
INCEIN	Azauli acittali luica Boubinio	Wellaceae	200		19	1240937.5	1409125	1079015.0	00001.010	1901094.7	900.4975761	300.1036394
Bidi leaf	recemosa	Fabaceae	75	16	10	30000	36000	26100	13050	47893.5	21 76977273	7 256590909
Didirical	Bauhinia	Tabaocae	10	10	10	00000	00000	20100	10000	47000.0	21.10011210	7.200000000
White Orchid	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	14008.849	6.367658523	2.122552841
Shisham	Dalbergia sisoo	Fabaceae	75	76	70	6982500	8379000	6074775	3037387.5	11147212	5066.914602	1688.971534
		Anacardiac										
Mango	Mangifera indica	eae	200	60	25	1875000	2250000	1631250	815625	2993343.8	1360.610795	453.5369318
Chinaberry	Melia azadirachta	Meliaceae	50	50	24	360000	432000	313200	156600	574722	261.2372727	87.07909091
	Peitopnorumptero	E-h	75		25	4070405	4050750	4400000 0	500404.075	0000407.7	4000 040005	222 2400440
Yellow Flame	Carpum Dithocollobium	Fabaceae	/5	60	35	1378125	1653750	1198968.8	599484.375	2200107.7	1000.048935	333.3490449
Manila Tamarind	ducle	Fabaceae	65	45	20	292500	351000	254475	127237 5	466961 63	212 2552841	70 75176136
Java Plum	Syzygium cumini	Myrtaceae	35	47	25	257031 25	308437.5	223617 19	111808 594	410337 54	186 5170632	62 1723544
ouru riani	Thespesia	ingraceae			10	201001120		220011110	1110001001	110001101	10010110002	02.11.20011
Tulip Tree	populnea	Malvaceae	45	62	32	714240	857088	621388.8	310694.4	1140248.4	518.2947491	172.7649164
Teak	Gmelina arborea	Lamiaceae	350	100	14	1715000	2058000	1492050	746025	2737911.8	1244.505341	414.8351136
Indian Bael	Aegle marmelos	Rutaceae	30	26	8	12480	14976	10857.6	5428.8	19923.696	9.056225455	3.018741818
Banyan	Ficus benghalensis	Moraceae	35	87	112	9549120	11458944	8307734.4	4153867.2	15244693	6929.405738	2309.801913
			2190								23485.41917	7828.473057
			76	10		Flowering tre	es	045040	400000	4554740-4	700 7440045	004 500 4000
Golden Snower	Cassia Fistula Micholio	Fabaceae	/5	40	36	972000	1166400	845640	422820	1551749.4	703.7412245	234.5804082
Champak	champaca	agrioliace	50	85	62	4084250	4901100	3553207 5	1776648 75	6520300 9	2057 052568	085 68/1803
Coral Tree	Ervthrina Blakei	Fabaceae	45	65	45	1480781.3	1776937.5	1288279 7	644139 844	2363993.2	1072 105772	357 3685906
Colui Hoo	Barringtonia	Lecythidac	70		+0	1100701.0	1110001.0	1200210.1	011100.044	2000000.2	1012.100112	001.0000000
Mango-pine	Acutangula	eae	50	82	26	692900	831480	602823	301411.5	1106180.2	501.6690272	167.2230091
Velley, eld-r	Teermenterr	Bignoniace	40	10	16							
reliow elder	recoma stans	ae	40	10	01	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
			320								5409.490278	1803.163426
												9631.636484



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#### 7.5 HAZARD IDENTIFICATION

#### Annexure - 14

#### 7.5.1Introduction

Hazard analysis involves the identification and quantification of the various hazards (unsafe conditions) that exist in the project site. In this chapter, an attempt has been made towards hazard identification and risk assessment with regards to the incident leading towards losses and to prioritize the action for either eliminating the hazard or minimizing the effect of it along with the disaster management plan.

The metallurgical industry is labor intensive and uses large scale and potentially hazardous manufacturing processes. These hazards mainly impact on those working within the industry, however, can also impact on local communities.

Some examples of such hazards likely to occur in Sponge Iron plant, Induction Furnace Area, Electrical System, Rolling Mill and Captive Power Plant, etc at M/s JIPL are given below:

- Fire at Lubrication, Hydraulic & Transformer oil installations
- Fire/explosion at Coal/ Diesel handling area
- Physical Hazards due conveyor system, material handling
- Fugitive Dust of Raw Material Handling at charging bay, storage yard
- Collapse of Structures/Fall of Material, stacking failure
- Loading/ Unloading failures
- Electrocution/ Electrical Hazards
- Accidental Spillage of Hot Molten Metal
- Fire hazards/Slippage hazard due to waste oil generated in plant
- Mechanical Hazards

#### 7.5.2 Common Causes of Accidents

Based on the analysis of past accident information, common causes of accidents are identified as:

- Poor housekeeping;
- Improper use of tools, equipment, facilities;
- Unsafe or defective equipment facilities;
- Lack of proper procedures;
- Failure to follow prescribed procedures;
- Jobs not understood;
- Lack of awareness of involved hazards;
- Lack of guides and safety devices;
- Lack of protective equipment and clothing.



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#### 7.5.3 Failures of Human Systems

Major causes of human failures reported are due to:

- Stress induced by poor equipment design,
- Unfavourable environmental conditions, fatigue, etc.;
- Lack of training in safety
- Indecision in critical situations;
- Inexperienced staff being employed for critical operations

Often, human errors are not analysed while accident reporting. Accident reports only provide information about equipment and/or component failures. Hence, a great deal of uncertainty surrounds analysis of failure of human systems and consequent damages.

#### 7.5.4 Physical Hazardsonsite

- Accident due to Conveyor feedingsystem/Machines
- Slip/Trip/ Fall due to improper stacking of material/unclean platforms
- Snaping of crane sling
- Contact with Hot molten Mildsteel
- Approach of goods vehicles for unloading of material
- Excessive Dust during Loading/unloading operation
- Unauthorized passages ,travelling over transportation system

#### 7.5.5 Hazards at Steel Melting Shop

The main hazards arise out of spillage of liquid steel may cause serious burn injuries and fires. Severe explosions may becaused due to tapping of liquid steel on pool of water, resulting in injuries to persons, fire and damage to equipment due to flying of hot splinters & splashing of liquid metal/slag.

#### Hazards in Induction Furnace

- Heat Radiation
- Exposure to molten metal
- Electrical hazards.

#### 7.5.6 AFBC Boiler

- Steam Handling and Pressure drop(Steam Explosion)
- Fly Ash handling
- Exposure to high temperatures
- Blast overpressure
- Design failure
- Failure of Safety Relief devices



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- ID fan/PA fan/SA fan failure
- Circulation line failure
- Turbine system failure

#### 7.5.7 Waste Heat Recovery Boiler (WHRB Unit)

- Blast Over pressure
- Steam Pressure drop
- Leak , Catastrophic rupture in steam lines
- Temperature drop in Boiler, Pre heater
- Process failure, Explosion due to Blast overpressure

#### 7.5.8 Damage Criteria for Thermal radiation and Overburden impacts

The Self Ignition of coal or in-site storage of HSD and handling of coal in the facility may lead to fire and explosion hazards. Following section describes damage criteria due to accidental release of hydrocarbon arise from fire and explosion. The vapours of these fuels are not toxic and hence no effects of toxicity are expected. Tank fire will occur if the radiation intensity is high on the peripheral surface of the tank leading to increase in internal tank pressure. Pool fire will occur when fuel collected in the dyke due to leakage gets ignited.

A flammable hydrocarbon (HSD/Coal/FO) can undergo combustion. This releases heat based on the heat of combustion and the burning rate of the fluid. A part of the heat is radiated while the rest is convicted away by rising hot air and combustion products. The radiations can heat the contents of a nearby storage or process unit to above its ignition temperature and thus result in a spread of fire. The radiations can also cause severe burns or fatalities of workers or fire fighters located within a certain distance. Hence, it will be important to know beforehand the damage potential of a flammable fluid likely to be created due to leakage or catastrophic failure of a storage or process equipment. The damage effects on people and equipment due to thermal radiation intensity and explosion are presented in following tables.

Fire load is expressed in terms of thermal radiation and explosion is expressed in terms of overpressure waves

SI.No.	Heat Loads	Type of Damage Intensity		
	(kW/m²)	Damage to Equipment	Damage to People	
1.	37.5	Damage to process equipment	100% lethality in 1 min. 1%Lethality in 10 s-	
2.	25.0	Minimum energy required to ignite wood	50% Lethality in 1 min. Significant injury in 10 sec	

#### Table 7.6: List of Damages Envisaged at Various Heat Loads



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SI.No.	Heat Loads	Type of Damage Intensity		
	(kW/m²)	Damage to Equipment	Damage to People	
3.	19.0	Maximum thermal radiation intensity allowed on thermally unprotected Equipment		
4.	12.5	Minimum energy required to melt plastic tubing	1% lethality in 1 min	
5.	4.0		First degree burns, causes pain for exposure longer than 10 sec	
6.	1.6		Causes no discomfort on long exposures	

*Source*: World Bank (1988). Technical Report No. 55: Techniques for Assessing Industrial Hazards. , Washington, D.C: The World Bank.

#### Impact due to explosion in terms of pressure waves is given below:

Indoor

- 0.17 (50 % Probability of Fatality)
- 0.35 (100 % Probability of Fatality)

#### Outdoor

- 0.35 (50 % Probability of Fatality)
- 0.5 (100 % Probability of Fatality)

(Reference OGP Guideline)

Table 7.7:	Damage due	to Overp	ressures

Peak Overpressure (Bar)	Damage Type	
0.83	Total destruction	
0.30	Heavy damage, nearly complete destruction of houses	
0.27	Cladding of light industrial building ruptures	
0.2	Steel frame buildings distorted and pulled from	
0.2	foundations	
0.16	Lower limit of serious structural damage	
0.14	Partial collapse of walls and roofs of houses	
0.027	Limited minor structural damage	
0.01	Typical pressure of glass breakage	

(Reference: TNO Green Book)



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#### 7.6 RISK ASSESSMENT

The main objective of the risk assessment study is to determine damage due to major hazards having damage potential to life and property and provide a scientific basis to assess safety level of the facility. The secondary objective is to identify major risk in manufacturing process, operation, occupation and provide control through assessment and also to prepare on-site, off site plans to control hazards. Risk assessment requires an assessment of failure probability, credible accident scenario, vulnerability of population etc. Much of this information is difficult to get or generate consequently, the risk analysis in present case is confined to maximum credible accident studies and safety and risk aspect related to steel Industry.



Risk assessment is the determination of quantitative and qualitative value of risk related to a concrete situation and a recognized threat. Activities requiring assessment of risk due to occurrence of most probable instances of hazard and accident are both onsite and off-site.

The risk management measures for the proposed project activities will be adopted as required for best safety practice within the works boundary.

#### 5 x 5 Matrix for Risk Assessment Likelihood

- 5. Almost Certain
- 4. Probable
- 3. Possible
- 2. Possible (under unfortunate circumstances)
- 1. Rare

#### Severity

- 5. Fatality
- 4. Major Injury, resulting in disability



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- 3. Injury Requires, Doctor's or Hospital attendance
- 2. Minor Injury, 1st Aid required
- 1. Minor Injury, 1st Aid not required

## **Risk Rating**

Risk Rating is calculated by multiplying the likelihood against the consequences, e.g. taking a likelihood of 4, which is classified as Probable, and multiplying this against a consequence of 2, which is classified as a Minor Injury aid required, would give you and overall risk rating of 8, which would be risk rated as a low risk.



HighRisk	High Risks activities should cease immediately until further control		
(16 –25)	gate the risk are introduced		
Medium Risk	Medium Risks should only be tolerated for the short-term and		
(9 – 15)	then only whilst further control measures to mitigate the risk are		
	being planned and introduced, within a defined time period.		
	Note: Medium risks can be an organizations greatest risk, can be		
	considered as Achilles heel, this due to the fact that they can be		
	tolerated in the short-term.		
Low Risk			
(1 – 8)	Low Risks are largely acceptable, subject to reviews periodically,		
	of after significant change etc.		



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#### Table 7.8: Associated Risk and Proposed Safety System for M/s JIPL

SI. No.	Activity	Hazard	Risk	Risk Level	Proposed Safety system		
1	Material Handling (Raw Materials & Finished Products)						
1.1	Unloading of material from trucks	Dust	Respiratory problems	Medium	<ol> <li>Preparation of SOP and SMP and Trainingmanuals</li> <li>Provide adequate training tothe operators</li> <li>Conduct regular safety audits and rectify safety issue and monitor safety compliance reports.</li> <li>Ensure use ofPPE</li> </ol>		
1.2	Transportation of materials by truck	Collision of trucks	Injury to person	High			
1.3	Transportation of material by conveyors	Dustarising during conveying of materials / Spillage	Respiratory problem Injury to personnel	Low			
1.4	Handling of Coal	Inflammable, fire/explosion hazard	Fire and Explosionhazard in the facility can lead to fatality.	High	<ol> <li>Inspection and Maintenance</li> <li>Fire protection/suppression system.</li> <li>Fire/smoke detectors</li> <li>Fire Hydrant system</li> </ol>		
1.5	Finished Product Handling and Transportation	Occupational and Physical Hazard	Cuts, Falling of material	Low	<ol> <li>Avoid overloading</li> <li>Training to operators</li> <li>Ensure use of PPE</li> </ol>		
2.	Steel Melt shop						
2.1	Melting operation in furnace	Electric shock	Body injury	Medium	1. Inspection of ladle for presence o water before tapping of liquid steel o		
2.2	Tapping of liquid steel	Spillage of liquid steel	Burn injury,	High	slag 2. Safety distance of 4 mtr from the		
		Explosionin ladle due to trapped water	Body injury. May be fatal	High	<ul> <li>according spoul are suggest to work heat molten metal</li> <li>Complete dryness of material prior to contact with liquid iron and steel</li> </ul>		



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SI. No.	Activity	Hazard	Risk	Risk Level	Proposed Safety system
2.3	Material Handling System - Cranes	Improper handling leads to accident. Snapping of wire rope	Personnel injury, may be fatal	High	<ol> <li>Regular Maintenance of EOT cranes in respect of wire ropes, brakes, lifting hook, rails/wheels, electrical system/motors etc.</li> <li>Limit switches / Emergency main switches of the cranes to be provided near the platform or at an easily accessible place.</li> <li>Bell/Siren is to be provided in the cabin for crane operator &amp;Annual inspection of Cranes/Lifting tackles by competent person every year, as per the factory act.</li> <li>Display of safe working load on each crane</li> <li>Proper Guarding of all stairs and crane's CT Trolley</li> </ol>
3.	Rolling Mill	1	1	1	
3.1	Rolling operation	Hot object	Burn injury	High	1. SOPs and SMPs and Trainingmanuals
3.2	Cutting of re bars in shear machine	Flying off sharp metals	Body injury	Medium	shall be prepared and awareness shall be created
3.3	Water treatment plant operation and cleaning	Chemical attack	Body injury	Medium	<ol> <li>Provide adequate training tooperators</li> <li>Conduct regular safety audits and rectify safety issue and monitor safety compliance reports</li> <li>Ensure use ofPPE</li> </ol>



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SI. No.	Activity	Hazard	Risk	Risk Level	Proposed Safety system
4.	Captive Power Plant				
4.1	Boiler Area	Exposure to High temperatures & Blast overpressure	Burn injury, Body injury	Moderate	<ol> <li>Insulating clothing, body suits, aprons etc. of appropriate materials</li> <li>Preparation of SOP and SMP and</li> </ol>
4.2	Ash Handling Area	Dust Exposure/ Dust fumes	Respiratory problem and injury to personnel	Moderate	<ul> <li>Training manuals</li> <li>3. Fire-fighting system in operation</li> <li>4. For high dust levels, wear: a Full-face Class P3 (Particulate) or an Air-line respirator.</li> <li>5. For inhalation risk exists, wear: a Class P1 (Particulate) respirator.</li> <li>6. Provide Onsite rescue equipment</li> </ul>
6.	Fire/explosion hazard (G	General)	•	•	
6.1	Hot Area	<ol> <li>All Hot Metal Areas</li> <li>Furnace Transformers</li> <li>Furnace Operating Floor</li> </ol>	<ol> <li>Scope of fire accidents and burns</li> <li>Scope of damage to skin</li> </ol>	Medium	<ol> <li>Proper SOPs for O &amp; M and good firefighting scheme eliminate these Hazards</li> <li>Proper safety and protective equipment eliminate impact of these Hazards</li> <li>Safety distance of 4 mtr. from the delivery spout are suggest to work</li> </ol>
					near molten metal
6.2	Diesel Generator	Mechanical hazards, fire hazards in Lube oil system and Cable galleries,Short circuits	Fire/electrical accident	Medium	<ol> <li>Inspection and Maintenance</li> <li>Fire protection system.</li> <li>Provision in electrical system describedabove</li> </ol>



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SI. No.	Activity	Hazard	Risk	Risk Level	Proposed Safety system
6.3	Hydrocarbon handling (Coal/HSD)	Highly inflammable nature of fuels may cause fire/explosion in the facility leading to fatality.	Fire and Explosion	High	<ol> <li>1.Inspection and Maintenance</li> <li>2. Fire protection/suppression system.</li> <li>3.Fire/smoke detectors</li> <li>4.Fire Hydrant system</li> </ol>
6.4	Used Oil Storage in the Plant	Fire hazard/Slippage	Burn injury, May be fatal if magnitude of fire is high and uncontrollable Body injury due to slippage	High	<ol> <li>Oil storage on Concrete floor with catchment</li> <li>Firefighting system</li> <li>Fireproof bulb in Oil storage area</li> <li>Proper house keeping</li> <li>No smoking/any other ignition source while handling Used oil</li> </ol>
7.	Electrical System	•		·	
7.1	Electrical System	<ol> <li>Exposure to Electrical Shocks</li> <li>Scope of Fire due to Electrical Short circuits</li> <li>Exposure to Burns due to Electrical Systems</li> </ol>	<ol> <li>Burns due to electrical accidents</li> <li>Shocks due to electrical accidents</li> <li>Damages to skin due to electrical fire accidents</li> <li>Neurological problems due to electrical shocks</li> </ol>	Medium	<ol> <li>Adequately rated and quick response circuit breakers, aided by reliable and selective digital or microprocessor based electromagnetic protective relays would be incorporated in the electrical system design for the proposed activities.</li> <li>Proper firefighting scheme for electrical failures eliminate these Hazards</li> <li>Proper design of electrical equipment as per standards/HAC and proper isolation to eliminate these Hazards.</li> <li>All motors should be flame proof in case of usage near Hydrocarbon</li> </ol>



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SI. No.	Activity	Hazard	Risk	Risk Level	Proposed Safety system
					handling area. 5. The metering and instruments would be of proper accuracy class and scale dimensions.
8.	Construction & Mainter	nance			
8.1	Movement of workers in the plantduring maintenance work in different units	Accidents	Body injury	Medium	<ol> <li>The plant machinerieswill be comprising of standard engineering designs meeting all quality specifications.</li> <li>Since most accidents occur due to human error and improper work</li> </ol>
8.2	Construction work Road accidents due to vehicular movement, etc.	Accidents	Body injury	Medium	<ul> <li>practice, safety awareness workshop for the plant personnel will be organized on regular basis.</li> <li>Workers are encouraged to wear and use PPEs like safety boots, hand gloves, helmets, aprons, goggles.</li> <li>Safety belt to be used while working at height</li> </ul>



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#### 7.7 MITIGATION MEASURESFOR IDENTIFIED HAZARD AND RISKS

Risk Mitigation measures for the proposed Expansion requires adoption of best safety practice at the respective construction zones as well as operational phase within the works boundary. In addition, the design and engineering of the proposed facilities will take into consideration of the proposed protection measures for air and water environmental as outlined in the earlier Chapters.

#### 7.7.1 CoalHandling Plant

The following actions would be taken to prevent any accident in the premises:

- Coal handling unit shall be minimum 500 meters away from the residential area, school/colleges, Historical Monuments, Religious Places, Ecological sensitive area as well as forests area. Also, from Railway line, Express ways, National Highways, State ways and District Roads and from water bodies like River, Nala, Canal, Pond etc.
- Coal storage unit shall provide paved approach with adequate traffic carrying capacity.
- Compound wall with adequate height should be constructed around the coal storage area. Coal storage unit should ensure that stacking of coal and coke in heaps does not get higher than the compound wall of premises of unit
- The unit should have adequate water supply through pipe/ surface water before selection of the site.
- Adequate dust suppression measures should be provided.
- Specific measures should be under-taken to avoid fugitive emission at the time of loading/unloading of coal by individual coal yard unit.
- Firefighting measures should be provided to avoid any fire and ensure that there is no explosive or chemical reaction in storage yard.

#### 7.7.2 DRI Kilns

 Gas safety man would accompany the team and would test the atmosphere for the presence of CO, before starting the work. If CO, concentration is found exceeding the sage limit, the job would be undertaken using necessary safety appliances viz., Oxygen Breathing Apparatus/Blower type Gas mask.

#### 7.7.3 Control Rooms

- Control rooms shall be blast proof and shockproof
- The building shall be located upwind of the process storage and handling facilities.
- Adequate number of doors shall be provided in the control room for safe exit
- Smoke detectors system shall be provided for control rooms at suitable locations
- One hydrant (minimum) for every 45m per wall of the building shall be positioned all around the building.



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#### 7.7.4 Mitigation Measure for Metal spillage

Any accumulation of water will be prevented in such vulnerable areas.

- In case of minor leakages, the flow of molten metal will be controlled.
- If there is major breakout, the area would be cut off and cordoned.
- Vital connections e.g. water, compressed air etc., would be cut off or regulated as per requirement.

#### 7.7.5 Electrical safety

- Adequately rated and quick response circuit breakers, aided by reliable and selective digital or microprocessor based electromagnetic protective relays would be incorporated in the electrical system design for the proposed activities.
- The metering and instruments would be of proper accuracy class and scale dimensions.
- Installation of electrical equipment as per HAC.

#### 7.7.6 Furnace Safety

- To ensure the furnace safety, proper inspection of the furnace to be done by competent person before start of operation.
- Safety valves/Temperature indicators and control system should be inspected and maintained.

#### 7.7.7 Fire Fighting Facility inside the Plant

All the fire extinguisher system will be controlled by the Security Department. Safety department will consist of qualified safety manager, safety officer and supporting staff. Following are fire-fighting facilities required in the plant:

- Portable fireextinguishers
- Fire Hydrant system
- Sprinkler system employed near fire prone areas
- Fire Buckets

#### Table 7.9: Details of Fire Fighting Facilities onsite

S.No.	Name of site	Type of Extinguisher
1.	Cable galleries	CO <sub>2</sub> & Dry chemical powder
2.	High voltage panel	$CO_2$ &, Dry chemical powder
3.	Control rooms	CO <sub>2</sub> & Dry chemical powder
4.	MCC rooms	CO <sub>2</sub> & Dry chemical powder
5.	Pump Houses	CO <sub>2</sub> & Dry chemical powder
6.	Offices	Dry chemical powder, foam type



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S.No.	Name of site	Type of Extinguisher
7.	Godowns	CO <sub>2</sub> & Foam type, Dry chemical powder
8.	Bunkers, Silo, enclosed dust collector	CO <sub>2</sub> type, N <sub>2</sub> type, automatic sprinkler, fixed spray nozzle(unless water reactive)

#### 7.7.8 Personal Protective Equipment (PPE)

Personal Protective equipment kept onsite are made readily available to plant personnel. Following **Table 7.10**shows the lists of recommended Personal Protective Equipment (PPE) onsite.

	Workplace Hazards	Suggested PPE
Eye and face protection	Flying particles, hot metal, gases or vapors, light radiation	Safety glasses with side-shields, protectiveshades, etc.
Head protection	Falling objects, inadequate heightclearance, and overhead power cords	Plastic helmets for top and side impact protection
Hearing protection	Noisy Areas	Hearing protectors (ear plugs or ear muffs)
Foot protection	Failing or rolling objects, points objects. Corrosive or hot liquids	Safety shoes and boots for protection against moving and failing objects, liquids and chemicals
Hand protection	Hazardous materials, cuts or lacerations, vibrations, extremetemperatures	Gloves made of rubber orsynthetic material(Neoprene),etc.
Respiratory protection	Dust, fogs, fumes, mists, gases, smokes, vapors	<ul> <li>Facemasks with appropriate filters for dust removal and air purification (chemical, mists, vapors andgases).</li> <li>Single or multi-gas personal monitors, if available</li> </ul>
	Oxygen deficiency	Portable or supplied air (fixed lines). Onsite rescue equipment
Body / leg protection	Extreme temperatures, hazardousmaterials, biological agents, cutting and laceration	Insulating clothing, body suits, aprons etc.of appropriate materials
Bag Filter Dust	Dust handling and storage	<ul> <li>Dust-proof goggles and rubber or PVC gloves shall be given</li> </ul>

#### Table 7.10: Summary of Recommended Personal Protective Equipment



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Workplace Hazards	Suggested PPE		
	<ul> <li>For large quantities or where heavy contamination is likely, wear coveralls.</li> </ul>		
	<ul> <li>For high dust levels, wear Full-face Class P3 (Particulate) or an Air-line respirator.</li> </ul>		
	<ul> <li>For inhalation risk exists, wearClass P1 (Particulate) respirator.</li> </ul>		

#### 7.8 RISK ASSESSMENT SUMMARY

The preliminary risk assessment has been completed for the proposed expansion of steel plant and associated facilities. The hazardous event scenarios and risks in general at this facility can be adequately managed to acceptable levels by performing the recommended safety studies as part of detailed design, applying recommended control strategies and implementing a Safety Management System.

#### 7.8.1 Recommended Approach to Combat with the Possible Accidents

Considering all possible accident scenarios as analysed in the risk analysis, it is established that there are potential hazards for handling of hazardous chemicals. So, the project authorities should be well prepared to handle any such eventuality described below:

#### i. In case of Fire/Explosion

The following measures and actions are to be taken:

- Evacuate the area in vicinity;
- Take all necessary actions to avoid escalation of the accident;
- If problem appears to be out of control, call fire brigade and police. Report to district collector, etc.; and
- Provide first aid to the victims as suggested in the Material Safety Data Sheets.

#### ii. Loss of Containment (LOC) of High-Speed Diesel (HSD)

In present case, for DG sets HSD is handled in the plant. Possible sources of release of HSD are flanges, valves, tail ends or during transfer from truck tanker (TTS)/Storage tank.

#### Action Plan considered preventing loss of containment (LOC) of HSD

- Preventive maintenance of all flanges, valves, joints, fittings etc. to prevent leakage.
- Periodic maintenance/inspection for corrosion.
- Regular inspection/maintenance of fire detectors and checking its operability.



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In case of leakage of oil from flanges, valves, tail ends or during transfer from truck tanker (TTS):

- Detect the source of leakage;
- If possible, try to collect the leaking oil in a suitable container;
- Bring portable fire extinguishers near to the area of leakage; and
- Stop flow of spilled oil and prevent it from coming into contact with any ignition source.

In Case HSD is ignited at the source of leak, in addition to the above, following actions are to be taken:

- Use fire extinguishers/Hydrant/Monitors to diminish the fire;
- See that the flame does not impinge on tanks or any other adjacent installation;
- If impingement of flame is unavoidable, put water protection system in between and cool the adjacent installations;
- Give priority to closure of valve and stop the flow;
- Best trained personnel to prevent further spread of fire;
- Take all necessary actions to avoid escalation of the accident; and
- In case of fire, ensure suffocation and toxicity due to flame does not take place.

In case of fire near HSD storage tanks following measures shall be taken:

- If the fire is near the storage tanks area, use water hydrant and DCP type fire extinguishers;
- Never allow fire to spread to the area below the tank, start cooling the tank by the emergency water spray; and
- Call fire brigade & police for assistance.

#### 7.9 OCCUPATIONAL HEALTH & SAFETY ONSITE

#### 7.9.1 Occupational Health Hazards at M/s. JharkhandIspatPvt Ltd, Jharkhand

JIPL adopts suitable measures for the proper occupational health safety of workers complying with OSHA standards. Following are the measure taken:

- Dust level of shop floor is appropriatelymonitored.
- Check on the effectiveness of preventive and control measureon regularbasis.
- Adequate supply of potable drinking water. Water supplied to areas of Plant food preparation or for the purpose of personal hygiene (washing or bathing) is according to drinking water qualitystandards
- Where there is potential for exposure to harmful dusts by ingestion, arrangements are made for clean eating areas so that workers are not exposed to the hazardous or noxioussubstances
- Periodic audiometrychecks are to be performed on workers exposed to high noise levels



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- OHS orientation training is provided to all new employees to ensure they are apprised of the basic site rules of work at / on the site and of personal protection and preventing injury to fellowemployees
- Contractors that have the technical capability to manage the occupational health and safety issues of their employees are hired, extending the application of the hazard management activities through formal procurementagreements
- Ambulances and First aid treatment facilities are made available for any emergencysituation

Permissible Exposure Level (PEL) of various Chemical Handled onsite are listed below in **Table 7.11.** 

S. No.	Chemical Name	OSHA PEL	Cal /OSHA PEL	NIOSH REL	ACGIH
		mg/m3	8-hour TWA (ST) STEL (C) Ceiling mg/m3	Up to 10-hour TWA (ST) STEL (C) Ceiling mg/m3	TLV
1.	Coal Dust				0.9 (resp.)
2.	a) Respirable fraction less than 5% SiO2	2.4 mg/m <sup>3</sup>	0.9(bitumin ous)	1	bituminous or lignite; 0.4 (resp.) anthracite (coal dust to be monitored for
	b) Respirable fraction greater than 5% SiO2	10 (%SiO <sub>2</sub> )	0.1(bitumin ous)		crystalline silica
3.	Iron oxide	10 (fume)	5 fume)	5 (dust and fume)	5 mg/m3
4.	Limestone				
5.	a) Total Dust	15 mg/m3	10 mg/m3	10 mg/m3	
	b) Respirable dust fraction	10 mg/m3	5 mg/m3	5 mg/m3	
6.	Gypsum				
	a. Total Dust	15 mg/m3	10 mg/m3	10 mg/m3	
	b. Respirable dust fraction	10 mg/m3	5 mg/m3	5 mg/m3	
7.	Quartzite	5 mg/m3	2 mg/m3	2 mg/m3	2 mg/m3
8.	Fly Ash (calcium				1 mg/m , natural as

Table 7.11: PEL level Summary as per OSHA



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S. No.	Chemical Name	OSHA PEL	Cal /OSHA PEL	NIOSH REL	ACGIH		
		mg/m3	8-hour TWA (ST) STEL (C) Ceiling mg/m3	Up to 10-hour TWA (ST) STEL (C) Ceiling mg/m3	TLV		
	oxide, sillicates)				Wollastonite (IHL, no asbestos and <1% crystalline silica		
9.	Carbon Monoxide	55 mg/m3	25 ppm	35 ppm	25 ppm		
Refer	Reference- OSHA/PEL exposure limit Guide						

#### 7.9.2Evaluation forSpecific Health Status of Workers

As this is an expansion project, company is already in practice to conduct the evaluation of workers health in pre designed format. All the workers working in the company will beevaluated pre-placement and periodically for chest X-rays, Audiometry, Spirometry, Vision testing (Far & Near vision. color vision and any other ocular defect) ECG. The format of evaluation sheet is provided below:

Spirome	try Te	sts											
Year		Total Manpowe	FV r (lit	'C ters)	FE	V 1	FEV 1/ FVC %	PE	EFR Conclu		clusion	lusion	
Physical	Exam	ination Test	s				<u>.</u>						
YEAR	Tota Mar	al npower	Pulse	ECG	BP		Right Eye		Left Eye	Color Blind	Iness	Squint	
Investige	ations	: Tests			-					•		•	
YE	AR	Tota Manpow	il i ver	Blood (CBC)		Blo (	od Sugar F& PP)	gar Lipid ) profile (		e (	JRINE R&M )		
Audiome	etry Te	ests											
YEAR	Т Л	'otal Manpower	Audio done	metry		Nor	mal	,	Abnorm	al	Conclu	sion	

## **7.9.3Annual report of health status of workers with special reference to Occupational Health andSafety**

Report of the latest conducted evaluation for health status of workers on the abovementioned parameters as per age, sex, duration of exposure and departmentwise is provided as Annexure-13. Annual report of health is always reviewed for the facility and necessary actions are taken in the facility for maintaining the OHS.



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## 7.9.4 Plan and fund allocation to ensure the Occupational Health & Safety of all contract and casual workers

Budget of **Rs.27.5lakhs** is allocated to ensure safety of all Employees including contract & casual workers. Breakup of the OH&S budget is provided below:

SI. No.	Requirement	Budget (In Lakh Rupees)
1.	Installation of Fire hydrant/ Sprinkler/Routine Maintenance of Fire Hydrant Line	5.0
2.	Installation of smoke detectors and Maintenance	2.0
3.	Maintain register of Fire Extinguisher system with proper numbering, location and next refilling due date	
4.	Yearly Hydro tests of Fire Extinguishers	2.0
5.	CO <sub>2</sub> Flooding System for MCC & Panel Rooms	5.0
6.	Environment Audit (Once in a Year)	1.5
7.	Third Party EHS Audit (Once in 2 years alongwith)	2.0
8.	PPE Purchase	5.0
9.	Exhaust Ventilation Test	2.5
10.	Training and Safety Awareness Program/Safety week celebration Conduction and Safety Slogans	1.5
11.	Miscellaneous	1.0
	Total	27.5

#### 7.10NATURAL AND MANMADE CALAMITIES WHICH CAN LEAD TO EMERGENCY

#### 7.10.1 Earthquake

Ramgarh district of the state Jharkhand lies in Seismic Zone-III indicating area under moderately affected zone in terms of being prone to Earthquake activity. Earthquake cannot usually be forecasted and therefore precautions immediately prior to such event are not usually possible. Emergency plan has been considered by the emergency management team as per the situation and site conditions.

#### 7.10.2 Storm

The contingency actions during storm shall be based on the weather forecasts obtained from meteorological stations and the local meteorological department. Some of the important actions to be carried out are as follows:



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#### **Prior to Storm**

- Communication with the local meteorological department
- Maintain distances from storm in order to execute preparatory actions in a shorter time.
- Considering the consequences about the emergency might have on operations and personnel.
- Review all operations carefully to ensure that systems in jeopardy are taken care of or shut down.
- Ensure the readiness of first aiders, emergency vehicles, medical Centre, medicines etc.
- Metallic sheets, loose materials, empty drums and other light objects shall be properly secured.
- Flush the drainage systems.

#### **During Storm**

- Remain calm.
- Avoid going outdoors.
- Do not seal the office completely as the suction created by the difference in atmospheric. Pressure inside and outside can rip open a window or door by breaking window glass panes.

#### After the Storm

- Do not touch electric lines.
- Stay away from the disaster area.
- Take special precautions in driving vehicles since the under-pavement could cave in due to the weight of automobile.

#### 7.10.3 Flood

Jharkhandfaces major floods mainly due to Flash Floods. Appropriate measures are taken to maintain the Plant safety. Flash flood has caused severe damages to houses, roads, bridges and culvert. As Damodar River is located at just at an approximate 0.3km away from the plant site, flood control measures will be taken as required to maintain the Plant safety.

#### 7.10.4 Air Raid

Air raid warning is obtained from the District Emergency Authority or Defense Authorities, during which total blackout of the entire complex should be considered. Some of the contingency actions to be considered during an air raid are as follows:

- The Aviation Lights installed on highest point inside the factory shall be switched off.
- All the lighting on the Streets shall be put off.
- All the plant lighting shall be put off.
- Brown curtains shall be provided for all windows inside the building.



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• Other emergency actions shall be followed in addition as per the general procedure.

#### 7.10.5 Food and Water Poisoning

Food and water poisoning to a no. of persons, due to canteen food or other means, is another scenario which can leads to major emergency. In this case Medical Officer would be informed immediately by the Main Controller at site and then to incident Controller(IC) and Site Controller (SC). In such situation doctors will act and if situation demands additional help such as ambulances, doctors and medicine would be arranged from nearby factories and hospitals.

#### 7.11DISASTER MANAGEMENT PLAN AND MITIGATION MEASURES

The objectives of DMP are to describe the company's emergency preparedness, organization, the resource availability and response actions applicable to deal with various types of situations that can occur at facility in shortest possible time.

Thus, the overall objectives of the emergency plan are summarized as:

- Rapid control and containment of Hazardous situation
- Minimizing the risk and impact of event/ accident
- Effective prevention of damage to property

In order to achieve effectively the objectives of emergency planning, the critical elements that form the backbone of Disaster Management Plan (DMP) are:

- Reliable and early detection of an emergency and immediate careful planning
- The command, co-ordination and response organization structure along with availability of efficient trained personnel
- The availability of resources for handling emergencies
- Appropriate emergency response action
- Effective notification and communication facilities
- Regular review and updating DMP
- Training of the concerned personnel

Steps taken for minimizing the effects may include rescue operations, first aid, evacuation, rehabilitation and communicating promptly to people living nearby.

#### 7.11.1 Key Elements

#### a) Basis of Plan

Hazard Identification necessitates preparation and planning the prevention andmethods by which accidental failure can be tackled without much damage to life. HIRA and consequence analysis combines and requires planning for the following:



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- Hazards from spread of fire or release of flammable from storage and process units
- Hazards due to formation of pressure waves due to vapour cloud explosion of flammable gases
- Hazards during handling of Hot Materials

#### b) Emergency planning and Response procedure

The Emergency Response Plan is plan for dealing with emergencies are implementedimmediately whenever there is a fire, explosion, or release of a hazardous substance etc, that threatens human health or the environment. The emergency response plan isreviewed and immediately amended whenever:

- The plan fails in an emergency
- Change in list of emergency contacts
- The list of emergency equipment changes
- The facility changes in its design, construction, operation, maintenance, or othercircumstances in a way that increases the potential for fire, explosions, or release of a hazardous substance

#### c) Incident Response Plan

It is the Frame work of addressing the emergency situation arose due to failure scenario.

#### 7.11.2 On-Site Emergency Plan

Disaster management plan are prepared with an aim of taking precautionary step to control the hazard propagation, avert disaster, take action after the disaster which limits damage to the minimum and follow the on-site emergency planning.

The onsite emergency is an unpleasant situation that causes extensive damage to plantpersonnel and surrounding area and its environment due to in operation, maintenance, design and human error. Onsite plan will be applied in case of proposed expansion. Following point are taken into consideration:

- To identify, assess, foresee and work out various kinds of possible hazards, their places, potential and damaging capacity and area in case of above happenings.
- Review, revise, redesign, replace or reconstruct the process, plant, vessels and control measures if so assessed.
- Measures to protect persons and property of processing equipment in case of all kinds of accidents, emergencies and disasters
- To inform people and surroundings about emergency if it is likely to adversely affect them.



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#### 7.11.2.1 Disaster Control Management system at M/s Jharkhand IspatPvt Ltd

Disaster Management group plays an important role in combating emergency in a systematic manner. Schematic representation Emergency Control Management system for facility is shown in following figure:





#### 7.11.2.2 Key Personnel and Their Roles and Responsibility

A team of following Essential persons shall be taking necessary action in case of emergency. The roles and responsibilities of these personnel are defined subsequently:

- Work Incident Controller (WIC)
- Site Incident Controller(SIC)
- Works Main Controller (WMC)
- Combat Team Leader
- Rescue Team Leader
- Auxiliary Team Leader(Communication Officer)
- Liaison Officer
- In-charge (Security)
- In-charge (Medical)
- Shift In-charge (Security)

## a) Work Incident Controller (WIC)

- The Works Incident Controllers are the departmental heads of respective divisions for DRI, SMS and CPP whose duties include the direction of the efforts and lead to onsite emergency response team to control the situation.
- Since in the initial stages of emergency, the WIC may be called on to take decisions involving the operations of other plants, it is necessary for the person selected to have a thorough knowledge of the overall works situation.



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• The person working as shift in-charge/manager i. e., an individual having overall control of the works processes for a shift shall work in the authority of WIC, when the WIC may be off-site or affected by the emergency.

### b) Site Incident controller (SIC)

He will be available at the factory or in the colony nearby. At any point of time and on being informed about an accident, he has to:

- Intimate the Works Main Controller (WMC) and proceed to the emergency site.
- Take the necessary information from Combat Team Leader (CTL), assess the situation and call Rescue Team Leader (RTL) and Auxiliary Team Leader (ATL).
- Inform Works Main Controller (WMC) regarding the situation.
- Take necessary steps and provide guidance to Combat Team, Rescue Team, and Auxiliary Team Leaders to mitigate the emergency situation.
- Examine for major emergency shutdown operation activities, decide safe escape route and announce for evacuation to Assembly Point.
- Inform Works Main Controller (WMC) about the status of the situation at regular intervals.

## c) Works Main Controller(WMC)

The WMC is the Director of the unit and is generally available in the factory or reside in the nearby except on tours. On emergency, he can reach work site at any odd hour within 30-45minutes time. In his absence, GM at Plant shall take up his charge as WMC.

In the major situation, decisions will have to be taken by WMC by collaboration with the senior managers at works which may affect the whole or a substantial part of the works and senior officers of the outside services as per site situation. After getting informed of an emergency situation WMC will rush to the emergency site, collect all information from SIC and:

- Decide if emergency is to be declared and advise Site Incident Controller (SIC) accordingly and reach Emergency Control Room (ECR)
- Take decision to shut-down the plant if necessary to take up repair and other combating measures
- Advise Rescue Team Leader (RTL)/Security Gate to blow the 'emergency siren' with appropriate code for declaration of emergency.Emergency Siren: Twenty Seconds with a pause of Five Seconds for 5 times
- Advice (Auxiliary Team Leader) ATL for communication to statutory authorities and formutual aid as required


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- Through Auxiliary Team Leader (ATL) shall ensure constant communication to statutory authorities and to mutual aid partners as required
- Maintain continuous communication with Site Incident Controller (SIC) to review the situation and assess the possible course of action for emergency operations
- To declare normalcy at the end of operation and advise Rescue Team Leader(RTL)/Security Gate to blow 'All clear siren'. All Clear Siren will be blown for 1 minute continuously
- Ensure the record keeping of emergency operations chronologically

## d) Essential Personnel

The Works Incident Controller/Main Controller will be supported by a Task Force of suitably trained people. The nature of essential works to be performed is:

- Shutdown of Plants
- Isolation, repairing of the affected equipment /pipeline etc.
- First Aid and removal of the injured persons to hospital.

# e) Combat Team Leader

He is the leader to attend to the emergency and is available in the factory or in the colony at any instant. On being informed about an accident, he has to:

- Immediately rush to thesiteandleadtherescueteamto control thesituation. InformSiteincidentcontroller(SIC)abouttheincidentandrequesthimtorush to the spot.
- Give he necessary instructions to the rescue team to combat the situation
- Co-ordinatetheactivitiesofteammembersandcombattheemergency,soasto eliminatetheroot causeof thehazard.
- To arrest the leakage and spillage from various equipment, shut down the concerned equipment.
- Takenecessary action to remove unwanted persons from the site of the incident.
- Keepinformed about thedevelopments to Site Incident Controller(SIC).

# f) Rescue Team Leader

He is the person who conducts rescue operations and should be available at any instant. On receiving the information about the incident he has to:

- Rush to site of emergency through safe route
- Ensure presence of all his team members, availability of firefighting facilities and take necessary action to arrest the fires/leakage of gas
- Arrange for safe escape of entrapped persons
- Make necessary arrangements to send the affected persons for immediately medical attention through the medical officer



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- Search for the missing persons on the basis of role call taken by Auxiliary team leader (ATL)
- Give the feedback to the site incident controller (SIC) about the developments

## g) Auxiliary Team Leader (Communication Officer)

He is the communication manager for the crisis management. On being informed of the emergency, he should proceed to Emergency Control Room (ECR) and shall:

- Keep in constant touch with works main controller (WMC) and Site Incident Controller (SIC)
- Inform the Statutory Authorities and District Administration. Communicate to mutual Aid Partners, Fire service stations at Ramgarh
- Send communications to District Hospital Ramgarh for rendering services
- To arrange for suitable persons to act as runners/messengers in case of failure of communication system
- Inform the relatives of causalities and send them to their residence or hospital as the case maybe
- Take care of visit of the authorities to the Emergency site
- Give feed back to work main controller (WMC) about the status with respect to his areas of activities

### List of Important Contact Numbers:

Designation	Ph. No.
Dy. Commissioner / Collector	9431176500
Superintendent of Police	9431706113
Sub Division Officer	9431146488
Circle Officer	9608783320
Sub Division Police Officer	9431706300
Police Station, Ramgarh	9431706319
Fire Station, Ramgarh	9404953422

#### Important Contact numbers of health officers for Ramgarh District

Designation	Ph. No.
Civil Surgeon	99551-60921
Cantonment General Hospital, Ramgarh (Medical Superintendent / RMO)	9835140948
CCL Hospital, Naisarai, Ramgarh	9431165954

#### Contact numbers for Block Disaster Management Committee:



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Designation	Ph. No.	Email
Deputy Commissioner	94311-46500	dc-ramgarh@gov.in
Superintendent of Police	94317-06113	sp-ramgarh@jhpolice.gov.in
Sub Divisional Officer	94311-46488	sdoramgarh5@gmail.com
Civil Surgeon	7004280685	csramgarh@yahoo.in
Additional Collector	94311-46411	acramgarh2010@gmail.com

Telephone Number of Emergency Command Team of M/s JIPL

SI	Name	Position in Team	Mob.Number
1	Sri SoumenPandey	Plant Head	8294449516
2	Sri Krishna Singh	Commercial Head	7004373083
3	Sri AdyaPada Das	Factory Manager	7061981848
4	Sri Jaikishor Singh Yadav	Prod. Manager- Induction	9471131277
5	Sri Pankaj Pandey	Tech. Head - Induction	8709124544
6	Sri Manoj Kumar	Manager- Environment	9661817022

## h) Liaison Officer

HOD (HR&A) shall be the Liaison officer. He shall be responsible for: -

- To contact Fire Brigade, Police, and Medical facilities on intimation from Works MainController & arrange for the rescue operation
- To ensure that the casualties receive attention
- To inform relatives of the affected employee at the earliest
- To arrange for additional transport if required
- To arrange for relief of personnel & organize refreshment/catering facility, in case the duration of emergency is prolonged
- To issue authorized statements to news media and ensure that evidence is preserved for enquiry to be conducted

# i) In-charge (Medical)

On receiving the information, he will reach First Aid Centre immediately and take followingactions:

- He will keep necessary first aid and medicines and artificial respiration equipment ready
- Inform doctors at other places to be ready, for attending serious injury, burn cases and food poisoning

# j) In-charge - Security



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**Proposal-** Expansion of Jharkhand Ispat (P) Ltd. for enhancement of Sponge Iron Production from 60,000 to 120,000 TPA, Billet Production 108,000 TPA, 90,000 TPA Rolling Mill along with 18 MW Captive Power Plant (WHRB –6MW & AFBC –12MW

- The In-charge (Security) shall guide the crew, according to the condition ofemergency site, for the actions required to handle the emergency i.e. for fire-fighting, removal of debris, arresting of dust, removal of oil-soaked earth etc. He shall giveinstructions to Security Guards to cordon off areas as required by WIC
- He shall be responsible for ensuring the discipline at control points and for preventing the entry of unauthorized persons inside the affected area as well as inside the factory during emergency

# k) Shift In charge – Security

He shall be responsible for;

- To arrange the necessary help as requested by WIC
- To inform In-charge (Security)
- To blow emergency siren, if instructed by the WMC
- To send Ambulance near accident area
- To rush to the accident site with fire brigade along with available trained securitypersons

**Silent Hour Command Structure:** The Senior Officers/ Key Persons of the plant remain during day time i.e. 8A.M. to8P.M. Hence the timing of 8P.M. to 8A.M. is considered as silent hour that to 10P.M.to 8A.M. is the crucial time. Still each and every unit/section of the plant is headed by shift in charge in the rank of Officer, Engineer or Sr. Engineer or Asst. Manager, who shall be responsible for handling the emergency. The other supporting/services and emergency sections like Fire Service, Ambulance, Security, Personnel, Water Supply, Transport departments etc. are also running for 24 hours shift wise with shift in charge and crew to handle emergency during the silent hour till main command personnel arrives. However, most of the key persons of the main command structure reside in nearby area and can reach within minimum time.The command structure of the silent hour shall be same as during normal hour, however, during the silent hour, the operation Shift-in charge of the concerned area where the fire or leakage of gas has taken place, shall act as SIC-in-charge, till the arrival of actual designation members.

# 7.11.2.3 Facilities Available For On-Site Emergency Plan

# a). Assembly Point

In any emergency it will be necessary to evacuate people from affected zones other zones likely to be affected, to a safer place. Safer places are identified and designated as Assembly Points. Taking the area and hazard zones into consideration three nos. of assembly points have been marked in different areas these are:

- Near car Parking area (Assembly Point-1)
- Near Rolling Section (Assembly Point-2)



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**Proposal-** Expansion of Jharkhand Ispat (P) Ltd. for enhancement of Sponge Iron Production from 60,000 to 120,000 TPA, Billet Production 108,000 TPA, 90,000 TPA Rolling Mill along with 18 MW Captive Power Plant (WHRB –6MW & AFBC –12MW

# • Near Fly Ash Silo (Assembly Point-3)

Above points are well connectable to the plant road and facilities like drinking water, temporary shelter and first aid is available there. These points are displayed at different places inside plant and near administrative building.

# b). Escape Routes

Escape routes are provided for systematic, safe and orderly evacuation of all the occupants in case of fire or any emergency, in the least possible time, to a safe assembly pointthrough nearest safe means of escape. Escape routes are ear marked on the drawings as well as on the routes, which will facilitate all for safe evacuation.Facility staff will be notified of evacuation by one or more of the following method(s):

- Verbal, Intercom, Portable Radio, Alarm, Other
- Notification to emergency services to ECR
- Staff will follow predetermined evacuation routes and assemble at designated areas.
- Evacuation maps must be displayed throughout the facility.
- Individuals responsible for coordinating evacuations must confirm the process.

# c). Emergency Control Room (ECR)

An Emergency Control Room (ECR) is established from which emergency operations are directed and coordinated. Room will be activated as soon as on-site emergency isdeclared. During an emergency, the EmergencyManagement Staff, including the main controller will gather in the ECR. Therefore, theECR will be equipped with adequate communication systems in the form of telephonesand other equipment to allow unhampered organization and other nearby facilitypersonnel.

The ECR will provide shelter to its occupants against the most common accidents; in addition, the ECR's communication systems will be protected from possible shutdown. The ECR will always be ready for operation and provided with the equipment and supplies necessary during the emergency such as:

- Hazard identification chart
- All Emergency response plans
- Population around factory
- Internal telephone connections and External telephone connections
- A list of key personnel, with addresses, telephone numbers, etc.
- Hotline connection to district collector, police control room, fire brigade, Hospital etc.
- Public address system (PAS)
- MSDS of all the materials used in Plant site
- List of dispensaries and registered medical practitioners around factory



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- Area map of surrounding villages
- Note pads and ball pens to record message received and instructions
- The blown-up copy of Layout plan showing areas where accident has Occurred
- Updated copies of the On-site Disaster Management Plan
- Emergency telephone numbers
- The names, phone number, and address of external agencies, response organizations and neighboring facilities
- The adequate number of telephones
- Emergency lights
- List of fire extinguishers with their type no. and location, capacity, etc
- Personal protective equipment (PPE)
- Safety helmets
- Clock
- Several maps of the facility including drainage system for surrounding area showing:
  - Areas where hazardous materials are stored
  - Plant layout
  - Plot plans of storage tanks, routes of pipelines, all water permanent lines etc.
  - The locations where personal protective equipment are stored
  - The position of pumping stations and other water sources
  - Roads and plant entrances
  - Assembly areas
  - Layout of Hydrant lines

#### d). Automatic Fire Detection System

Unattended vulnerable premises like electrical control rooms, cable tunnels, MCC,oil cellars, etc. will be provided with automatic fire detection and alarm systems.

#### e). Manual Call Point Systems

All major units and welfare/administrative building will be provided with manual callpoints for summoning the fire-fighting crew from the fire station for necessary assistance.

### f). Fire Station

The equipment provided in the fire posts are Water Tender, Foam Tender, Portable pump, Wireless set, Hot Line Telephone and Hoses.



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## g). Alarm System

A hooter installed at the Security Office shall blow 'Emergency Siren:Siren blown forTwenty Seconds with a pause of Five Seconds for 5 times'toindicate major emergency in the plant. In such case, allnon-essential employees are expected to gather at any of the four designated assembly point. Signal for the clearance of emergency shall be given by blowing the'All Clear Siren: Siren blowing continuously for one minute'.

## h). First Aid Centre

- Company has provided First Aid boxes with required first aid medicines at different locations inside the plant to address minor injuries. First aid boxes are checked by the pharmacists once in a month & and medicines are filled/replaced. The first aid boxes are provided in the following locations: Occupational Health Centre, Administrative building, SMS and Security Office.
- An organized Occupational Health Centre with ambulance, stretchers, oxygen cylinder etc. is placed in inside the plant. The Occupational Health Centreis manned by one Doctor/pharmacist and one attendant. An external Ambulance service is also hired to meet emergency situation. The Occupational Health Centre is manned round the clock.
- To ensure that the system is strictly followed, In-charge (Safety) shall cross check randomly once in a fortnight the preparedness of Ambulance as per the check list and counter sign.
- The injured shall be shifted to nearby hospital, as per the opinion of the MedicalOfficer.
- The names & contact numbers of trained First Aiders are provided the same is displayed at all the prominent locations in the premises.
- In case of Injury caused due to Hazardous Chemicals, Material Safety Data Sheet(MSDS) available with the user department/Hospital shall be referred.

# i). Communication

Public address system and EPABX telephone are available for effective communication inside the plant. Telephone directory is available in all the departments.

### j). Mock Drill

For reviewing and assessing the level of preparedness, EHS Managershall conduct mock trials four times in a year simulating the covered emergencies and will maintain records of the trials. Fire drills will be exercised once in every six months under the leadership of EHS Manager. The findings of the mock drills shall be used for improvements in preparedness and response. All RTL shall be responsible for implementing the suggestions.



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## k). Training

On yearly basis class room training for fire-fighting and mitigating measures to beadopted to reduce environmental impact & OHS risks, will be imparted covering at least20% employee by the EHS Manager. The records of thesame are maintained.

# 7.11.2.4 Activation & Closing Procedure for On-Site Emergency

- The person noticing the incident of fire or leakage of gas, shall inform about the location & nature of fire to the combat team Leader (CTL), security Gate and concerned Shift-in-charge.
- Combat team Leader (CTL) shall inform site incident controller (SIC) and shall rush to the site immediately. He shall arrange for firefighting and first aid available at site. He shall arrange to take necessary steps to eliminate the root cause of fire.
- Site incident controller (SIC) on getting information shall inform the WMC and reach the site at the earliest. He shall take over the charge and shall direct Rescue Team Leader (RTL)) to carry out rescue operations including firefighting and medical attention. Site incident controller (SIC) shall co-ordinate with Combat team leader (CTL) to eliminate the root cause of fire.
- Work main controller (WMC), on arrival at site shall take stock of the situation from site incident controller (SIC) and then rush to emergency control room (ECR) to declare emergency on the basis of assessment made by (Site incident controller (SIC). He shall give direction to the security gate/ (Rescue Team Leader) RTL to activate siren
- Twenty seconds with a pause of five seconds for 5 times for fire Accident.
- Thirty seconds with a pause of five seconds for 5 times for leakage of gas.
- Rescue Team Leader (RTL) shall mobilize fire-fighting and medical resources to site and shall assist (Site incident Controller) SIC.
- Auxiliary Team Leader (ATL) shall take charge of Emergency Control Room (ECR), shall ensure smooth operation of ECR and shall inform relatives of casualties. Informs mutual Aid partners and ensures their arrival at site if required.
- Auxiliary Team Leader (ATL) informs statutory authorities and district administration regarding emergency suitably and coordinates their visit at site.
- WMC coordinates and keeps the track of all the activities at site and off the site and arranges the recording of the activities in a chronological manner for review of the Onsite emergency Plan.

# 7.11.2.5 Responsibility of Implementation of DMP

Responsibility for establishing and maintaining an Emergency Preparedness Plan/DMP belongs to the EHS Manager. He is responsible for the control of the plan, and for ensuring that the plan is applicable and implementing procedures are operated during emergency situation and are reviewed and revised annually.As a member of top



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**Proposal-** Expansion of Jharkhand Ispat (P) Ltd. for enhancement of Sponge Iron Production from 60,000 to 120,000 TPA, Billet Production 108,000 TPA, 90,000 TPA Rolling Mill along with 18 MW Captive Power Plant (WHRB –6MW & AFBC –12MW

management he is responsible for the training of personnel to ensure that adequate emergency response capabilities are maintained in accordance with the plan. He is also responsible for ensuring the regular conduct of drills and other measures, as outlined in the DMP.

# 7.11.3 Off-Site Emergency Plan

The off-site emergency plan is an integral part of any hazard control system. It is basedon those accidents identified by the works management, which could affect people andthe environment outside the works. The roles of the various parties that may be involved in the implementation of an off-site plan are described below. The responsibility for the off-site plan will be likely to rest either with the works management or with the local authority. Schematic representation of various organization involved during emergency is shown below in **Fig.7.2**.

Either way, the plan must identify an emergency coordinating officer who would take overall command of the off-site activities. Consideration of evacuation may include the following factors:

- In the case of a major fire but without explosion risk (e.g. an oil storage tank), onlyhouses close to the fire are likely to need evacuation
- If fire is escalating very fast it is necessary to evacuate people nearby as soon as possible
- In acute emergency people are advised to stay indoors and shield themselves from the fire.



Fig 7.2:Various Organizations Involved During Emergency

# Organization

Organizational details of command structure, warning systems, implementation procedures, emergency control centers include name and appointments of incident controller, site main controller, their deputies and other key personnel involved duringemergency.



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#### Communications

Identification of personnel involved, communication centre, call signs, network, list oftelephone numbers.

#### **Special Emergency Equipment**

Details of availability and location of heavy lifting gear, specified fire-fighting equipment, fireboats etc.

#### Voluntary Organizations

Details of Voluntary organizations, telephone numbers nearby of hospitals, Emergencyhelpline, resources etc are to be available with chief authorities.

#### Non-governmental Organizations (NGO)

NGO's could provide a valuable source of expertise and information to support emergency response efforts.

- Evacuation of personnel from the affected area
- Arrangements at rallying posts and parking yards
- Rehabilitation of evacuated persons

#### Chemical information

Details of the hazardous substances (MSDS information) and a summary of the risksassociated with them will be made available at respective site.

#### **Meteorological information**

There is to be arrangements for obtaining details of weather conditions prevailing at before the time of accident and weather forecasts updates.

#### **Humanitarian Arrangements**

Transport, evacuation centres, emergency feeding, treatment of injured, first aid, ambulances, temporary mortuaries.

#### **Public Information**

- Dealing with the media-press office
- Informing relatives, etc.

#### Assessment

- Collecting information on the causes of the emergency
- Reviewing the efficiency and effectiveness of all aspects of the emergency plan.



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#### Role of local authority

Local Authorities like Panchayat, Sabha, Samity, municipalities can help in combatingemergency situation after assessing the impact scenario in rescue phase.

### Role of police

The police are to assist in controlling of the accident site, organizing evacuation and removing of any seriously injured people to hospitals.

- Co-ordination with the transport authorities, civil defence and home guards
- Co-ordination with army, navy, air force and state fire services
- Arrange for post mortem of dead bodies
- Establish communication centre with easy contact with ECC

### Role of Fire Brigade

The fire brigade shall be organized to put out fires and provide assistance as requiredduring emergency.

### Media

- The media is to have ready and continuous access to designated officials withrelevant information, as well as to other sources in order to provide essential andaccurate information to public throughout the emergency and to avoid commotionand confusion.
- Efforts are made to check the clarity and reliability of information as it becomes available, and before it is communicated to public.Public health authorities are consulted when issuing statements to the mediaconcerning health aspects of chemical accidents.
- Members of the media are to facilitate response efforts by providing means forinforming the public with credible information about accidents involving hazardoussubstances.

### Role of health care authorities

- Hospitals and doctors shall be ready to treat all type of injuries to causalities duringemergency.
- Co-ordinate the activities of Primary Health Centers and Municipal Dispensaries toensure required quantities of drugs and equipment
- Securing assistance of medical and paramedical personnel from nearbyhospitals/institutions
- Temporary mortuary and identification of dead bodies

### 7.12 CONCLUSION

As discussed in above sections, adequate risk Control measures for process needs to be considered for to say that the proposed expansion or new proposed Project Activity is not



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Production 108,000 TPA, 90,000 TPA Rolling Mill along with 18 MW Captive Power Plant (WHRB -6MW & AFBC -12MW

likely to cause major significant risk to onsite, offsite & environment. Suitable Mitigation Measures will be taken by M/s Jharkhand IspatPvt Ltd, District:Ramgarh, Jharkhand to ensure complete workplace safety. In the event of disaster onsite, offsite and all the emergency planning procedures will be followed so as to minimize the impact on working personnel, plant surrounding and environment.

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# Annexure - 15

Name of the Factory: M/s Jharkhand Ispat Pvt. Ltd.

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(In respect of person employed in occupations declared to be dangerous operations under section-87)
 Note: (i) Column 8 : Detailed summary of reason for transfer or discharge should be stated
 (ii) Column 11: should be expressed as fit/unfit/suspended.

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HEALTH REGISTER FORM No. 16

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Address : Hesla, Argada, Ramgarh

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(In respect of person employed in occupations declared to be dangerous operations under section-87) Note: (i) Column 8 : Detailed summary of reason for transfer or discharge should be stated (ii) Column 11: should be expressed as fit/unfit/suspended.

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HEALTH REGISTER FORM No. 16

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Name of the Factory: M/s Jharkhand Ispat Pvt. Ltd. Name of Certifying Surgeon: Dr. Davidur (Cume

5618121

Address : Hesla, Argada, Ramgarh

(In respect of person employed in occupations declared to be dangerous operations under section-87)
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FORM No. 16 HEALTH REGISTER

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Name of the Factory: M/s Jharkhand Ispat Pvt. Ltd. Name of Certifying Surgeon: Dr. Raindy June

Eci5131

Address : Hesla, Argada, Ramgarh





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Annexure - 17

# JHARKHAND ISPAT PRIVATE LIMITED

ADMN. OFFICE

CIN Telephone : Near P.N. Bank, Main Road, Ramgarh Cantt. Dist Ramgarh (Jharkhand) -829 122 : U34102UP1991PTC012872 : 06553-226846, Fax:226845 E-mail: jipIramgarh@gmail.com



WORKS : Vill, & P.O.- Hesla, Argada Ramgarh Cantt.-829 122 Dist.-Ramgarh (Jharkhand)

Ref. No.....

#### Date.....

#### ENVIRONMENT POLICY

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JHARKHAND, ISPAT PRIVATE LIMITED (JIPL) is engaged in production of Steel & Steel product is committed towards clean and sustainable environment. The mission of JIPL is to produce Steel & Steel product in an environment friendly manner and is strive to;

- Integrate sound environmental management practices in all the activities.

Conduct the operations in environmentally responsible manner to minimize pollution and its' impact on environment.

- Comply with applicable legal and other requirements related to environmental aspects of the operations and strive to go beyond. The environmental management cell will be headed by EHS Manager, a well qualified and experienced environment engineer.
- JIPL shall ensure that deviations from this policy and cases of violations/non-compliances of Environment or Forest Laws, if any, shall be reported to the Board of Directors through EHS Manager and shall identify designate responsible person for ensuring compliance with the Environmental Laws and Regulations.

Conserve energy, and other natural resources, minimize waste generation and promote recovery, recycle and reuse.

- Increase greenery in and around the plant.
- Ensure continual improvement in environmental performance by setting & reviewing objectives & targets.

For and on behalf of JHARKHAND ISPAT PVT. LTD.

bolcer Kumar Alarwoof

RAJEEV KUMAR AGARWAL (Director) DIN: 00185959

Annexure - 18

# JHARKHAND ISPAT PRIVATE LIMITED

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JIPL/084/2022-23

CIN Telephone

To,

: Near P.N. Bank, Main Road, Ramgarh Cantt. Dist. - Ramgarh (Jharkhand) - 829 122 : U34102UP1991PTC012872 : 06553-226846, 224601, Fax : 226845 E-mail : jiplramgarh@gmail.com

-8



WORKS :

Vill, & P.O.- Hesla, Argada Dist.- Ramgarh (Jharkhand) PIN. - 829 101

Date.....

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15/09/2022

Dr. R. B. Lal Scientist 'E'/ Additional Director, Ministry of Environment, Forest and Climate Change, (I.A. Division – Industry I sector) Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi - 110003

- Sub: Submission of compliance of Environment Clearance Miscellaneous condition no. i and ii regarding.
- Ref: Environment Clearance Letter No. F. NO. J-11011/41/2013-IA-II(I), Dated-7<sup>th</sup> September, 2022.

Respected sir,

With reference to the EC issued vide above referred letter, the compliance of Miscellaneous condition no. i and ii are given below:-

S1. No.	Condition	Compliance
Х.	Miscellaneous Conditions:	~
i	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.	Advertised in two local newspapers of the District. Publications are made in Prabhat Khabar and Danik Bhaskar on 13/09/2022 and 14/09/2022 respectively. Copy of newspapers cutting are enclosed as Annexure – 1. Environment Clearance letter has been put on our web site www.jharkhandispat.in
ii	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn	Copy of environment clearance letter has been sent to the following authorities:- 1) The Member Secretary, Jharkhand State Pollution

Regd Office : Flat No. 209, 2nd Floor, Tirupati Tower, SA 7/13-2 Akhta, Pahariya, Varanasi - 221007 (Uttar Pradesh)



Control Board, Ranchi, Jharkhand dated 12/09/2022.

- The Regional officer, Jharkhand State Pollution Control Board, Hazaribagh, Jharkhand dated 12/09/2022.
- The District Industries Centre, District -Ramgarh, Jharkhand dated 12/09/2022.
- The Deputy Commissioner, District- Ramgarh, Jharkhand dated 12/09/2022.
- 5) President, Ramgarh Nagar Parishad, District- Ramgarh, Jharkhand dated 12/09/2022.

Hope you will find the above in order and oblige.

Thanking you. Yours faithfully **For** Jharkhand Ispat Pvt Ltd

Manoj Kumar (Manager Environment)

Enclosures: As above. Cc to:-

> 1) The Secretary, Department of Environment, Government of Jharkhand, Secretariat, Nepal House, Doranda, Ranchi – 834001.

झारखण्ड, राँचे

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- 2) The Director General of Forest, Ministry of Environment, Forest and Climate Ports Change, New Delhi.
  - 3) The Principal Chief Conservator of Forests & Government of Jharkhand, Van
  - Bhawan, P.O. Hinoo, Doranda, Ranchi 823002.
  - 4) The Deputy Director General of forests (C), Integrated Regional Office (Eastern Central Zone), Ministry of Environment, Forest and Climate Change, 2nd Floor, Headquarter-Jharkhand State Housing Board, Harmu Chowk, Ranchi, Jharkhand-834002.
  - 5) The Member Secretory, Central Pollution Control Board, Parivesh Bhawan, CBD- 8-1-2 or cum-office complex, East Arjun Nagar, Delhi-110032.
  - 6) The Member Secretory, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), HEC Campus, P.O. Dhurwa, Ranchi - 834004, Jharkhand.
    - The Member Secretary, Central Ground Water Authority, West Block II, Wing-3, Parts on Sector I, R.K.Puram, New Delhi - 110086.
    - The District Collector, Ramgarh District, Jharkhand.
    - The Regional Officer, Regional Office, State Pollution Control Board, Hazaribagh, Paster Jharkhand.



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**MISSION** 

**Pitambara College** 

of Pharmacy

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#### 4 दैनिक जामरण रांची, 14 सितंबर, 2022

पौचारोपण करती मुखिया रोपन देवी। मांडू (रामगढ़) : पुंडी पंचायत के डा राम मनोडर लोडिया श्रमिक उच्च विद्यालय बोंगाहारा में मंगलवार को बिरसा हरित आम बागवानी योजना के तहत पौधारोपण कार्यक्रम का आयोजन किया गया। कार्यक्रम में मुख्य रूप से मुखिया रोपन देवी शामिल हई। इस दौरान मुखिया ने

शिश्वको के साथ पिलकर विद्यालय में शिश्वको के साथ पिलकर विद्यालय में ज्ञात हो कि कोल कंपनी में अत्यंत कार्य हो कि कोल कंपनी में अत्यंत 10.00.000/-+ किरामा 25,000/ गोकरी मेलरी 30,000/-+ बाइक संपर्क # 08100533657

#### 10: सूचना

म, निस्तोर कुजूर,पिता स्व. हेलारियुस कुजूर,निवास ग्राम-बदुवा,पा.-मझगवि,थाना-डूम्री, बहुवा, था. – महागाव, यात्रम-डूनेस, जिलो-पुमल,ब्रारखण्ड सच्य पत्र संख्य –1747, दिराज–11/07/2022 के पाध्यम से मुचित करता हूँ कि मेरे सेवापुस्तिका में मेरी बडी पुत्री का नॉम अंग्रेजी में Rupa Kuju एवं जन्मतिथि-02/10/2000 देवे है जो गलत है। मेरी पुत्रों का सही जाम Anupa Kujar एवं जन्मतिथि -02/10/2003 है एवं मेरे गांव वा नाम BANDUWA के स्थान पर BANDUWA NOVGAHI दर्ज हो गया • है, जो गलत है। मेरे गांव का सही नाम BANDUWA है।

दूर एण्ड ट्रेवल्स (Saskatchwan/ कनाडा

Manitoba/ Quebec) 빅 칼로/ अन्द्रेड वर्कर चाहिए, रहना+ खाना फ्री पासपोर्ट सहित मिले ( एजेट आमंत्रित) 16 चिनार पार्क कोलकाता 8505989295

C.YO



अगस्त 2022 को मख्मात गांव के से लिया और इसकी सचना राष्ट्रीय

मोर्चा, कांग्रेस एवं राष्टीय जनता दल ही मुस्लिम समाज के लोगों ने टलित अनुमाजित अ मामले की जानकारी बच्ची कमें हेतु भी मामले देवी सेवा समिति मंडल जी गली हर संभव भदानीनगर के सदस्य कमलेश कुमार े सहयोग करने को हुई। इसके बाद कमलेश ने इसकी का आश्वासन जानकारी समिति के सचिव जितेन्द्र दिया।

# शिवांशु व पल्लवी को नीट में मिली सफलता

संवाद सूत्र, कुजू (रामगढ़): अग्रसेन डीएवी भरेचनगर के छात्र शिवांशु एवं छात्रा पल्लवी प्रिया ने नीट

2022(मेडिकल) परीक्षा में सफलता हासिल कर विद्यालय को गौरवान्वित किया है । दोनों ही छात्र-छात्राओं ने अपने प्रथम प्रयास में उत्कृष्ट सफलता अर्जित की है। शिवांशु ने अपने सफलता का श्रेय माता-पिता व

गुरुजनों को दिया है। विद्यालय के प्राचाय श्री निशिकांत कर ने सफल छात्र एवं छात्रा को सम्मानित करते हुए कहा कि योजनाबद्ध तरीके से समय प्रबंधन का ध्यान रखते हुए परिश्रम किया जाए तो बड़ी से बड़ी सफलता अर्जित को जा सकती है। डादश बोर्ड की परीक्षा में

अधिकतम अंक लाकर विद्यालय के टापर रहे शिवम ने कक्षा एकादश तथा द्वादश के छात्रों को सफलता के गुर बताए और उन्हें प्रोत्साहित करते हुए कहा कि पूरी लगन से सही दिशा में लगातार परिश्रम किया जाए तो ऊंची से ऊंची सफलता प्राप्त की जा सकती है।



रात के ग्यारह चजे थे। विवेक पदते-पदत धक मया था। बालकनी में जाकर चांद तारों को देखने लगा। अचानक घर की घंटी बजी। इस वक्त कौन हो सकता है। चाचा जी, मामा अथवा दादा-दादी? मम्मी-पापा भी उठ गए। दरवाजा खोला तो उसके सबसे अच्छे दोस्त अन्नू के माता-पिता खड़े थे। वे अंदर आ गए। बैठते ही अन्तू के पापा बोले- बेटा, स्कूल की छुट्टी क्या देर से हुई थी? विवेक ने ना में सिर हिलाया। फिर पूछा-क्या बात है, अंकल? वह बोले- क्या अन्तू तुम्हारे साथ छुट्टी के

सुवद्ध से गान

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रामगढ़ जागरण

मेसर्स झारखण्ड इस्पात प्राईवेट लिमिटेड ग्राम-हेसला, पोस्ट-अरगडा जिला-रामगढ, झारखण्ड पिन-829101 Email : jipllegal@gmail.com, jiplramgarh@gmail.com Website- www.jharkhandispaLin सार्वजनिक सूचना सर्वसाधारण को सूचित किया जाता है कि मेसर्स झारखण्ड इस्पात प्राईवेट पता लिमिटेड, ग्राम-हेसला, पोस्ट-अरगडा, जिला-रामगढ, झारखण्ड पिन-829101 के मौजूदा 4x100 TPD स्पंज आयरन प्लांट एवं 2x12 Ton स्टील मेल्टींग शॉप (इन्हेक्सन फरनेस एवं बिलेट कास्टर) में विस्तार किया जा रहा है। विस्तारीकरण के क्रम में 18 मेगावाट (12 मेगावाट ए.एफ.बी.सी. बॉयलर एव 6 मेगावाट देस्ट हिट dbla रिकवरी बॉयलर) के साथ 1x12 Ton स्टील मेल्टींग शॉप (इन्डक्सन फरनेस एवं बिलेट कास्टर) – 38,000 टन एवं रोलिंग मिल-90,000 टन प्रतिवर्ष उत्पादन क्षमता के इकाईयों की ख्यापना की जा रही है। इस विस्तारीकरण के लिए भारत सरकार के बिना आय प्रमाण पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली–110003 डारा पर्यावरणीय स्वीकृति पत्र क्रमांक F.No. J-11011/41/2013-IA-II(I) दिनांक 7 सितम्बर 2022 के द्वारा दी गई है। लेबर चाज पर्यावरण स्वीकृति पत्र की प्रतिलिपि पर्यावरण,वन एवं जलवायु परिवर्तन मंत्रालय, भारत तरकार की वेबसाइट - www.envfor.nic.in एवं मेससे झारखण्ड इस्पात प्राईवेट लिमिटेड की वेबसाइट- "www.jharkhandispat.in" पर उपतब्द है

ह./- राम चन्द्र रुंगटा निदेशव झारखण्ड इस्पात प्राईवेट लिमिटेड JIPL/081/2022-23 Date-12.09.2022

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जमीन पर ही बसाया जाए। कहा

कि जब से राज्य में झारखंड मुक्ति

दैनिक आगरण

निर्धन एवं वृद्ध महिला का देहांत

हो गया था। घर की आर्थिक स्थिति

कमजोर होने के कारण परिवार के

लोग अंतिम संस्कार करने में असमर्थ

**CLASSIFIED ADVT.** 

**OVER PHONI** 

in Ranchi

For More Details Contact

POOJA-842902026

0651-3056400

Classifieds

# JHARKHAND ISPAT PRIVATE LIMITED

OC

ADMN. OFFICE : Near P.N. Bank, Main Road, Ramgarh Cantt. Dist. - Ramgarh (Jharkhand) - 829 122 : U34102UP1991PTC012872

CIN	
Teleph	one

: 06553-226846, 224601, Fax: 226845 E-mail : jiplramgarh@gmail.com



#### WORKS :

Vill. & P.O.- Hesla, Argada Dist.- Ramgarh (Jharkhand) PIN. - 829 101

Date.....

10/09/2022 \*

Ref. No..... JIPL/079/2022-23 To Sri J. Bedia, President. Ramgarh Nagar Parishad, Dist - Ramgarh (Jharkhand).

- Sub : Submission of copy of Environmental clearance issued for Sponge Iron Plant (4x100 TPD), Induction furnace (2X12T+1X12T), Rolling Mill (90,000TPA) and 18 MW Power Plant (6 MW WHRB and 12 MW AFBC Boiler) of M/s Jharkhand Ispat Private Limited located at Hesla, P.O. Argada, District Ramgarh, Jharkhand.
- Ref: MoEF&CC, New Delhi EC Letter vide F.No. J-11011/41/2013-IA-II(I), Dated 7th September 2022-Copy enclosed.

#### Sir,

With reference to above and as directed vide above mentioned EC letter, please find enclosed copy of our Environmental clearance Letter F.No. J-11011/41/2013-IA-II(I), Dated 7th September 2022, as granted by MoEF&CC, New Delhi for Sponge Iron Plant (4x100 TPD), Induction furnace (2X12T+1X12T), Rolling Mill (90,000TPA) and 18 MW Power Plant (6 MW WHRB and 12 MW AFBC Boiler) of M/s Jharkhand Ispat Private Limited located at Hesla, P.O. Argada, District Ramgarh, Jharkhand.

This is for your kind information and record please.

Thanking you.

**Yours Sincerely** For JHARKHAND ISPAT PVT. LTD.

Manoj Kumar (Manager Environment)

Encl: - As above.

21210

परिषट रामगढ

# JHARKHAND ISPAT PRIVATE LIMITE

CIN

Telephone

ADMN. OFFICE : Near P.N. Bank, Main Road, Ramgarh Cantt. Dist. - Ramgarh (Jharkhand) - 829 122 U34102UP1991PTC012872 : 06553-226846, 224601, Fax: 226845 Olc

E-mail : jiplramgarh@gmail.com



#### WORKS :

Vill. & P.O.- Hesla, Argada Dist.- Ramgarh (Jharkhand) PIN. - 829 101

Date.....

10/09/2022

JIPL/075/2022-23 To The Deputy Commissioner Ramgarh (Jharkhand)

Ref. No.....

- Sub : Submission of copy of Environmental clearance issued for Sponge Iron (4x100 TPD), Induction furnace Plant (2X12T+1X12T), Rolling Mill (90,000TPA) and 18 MW Power Plant (6 MW WHRB and 12 MW AFBC Boiler) of M/s Jharkhand Ispat Private Limited located at Hesla, P.O. Argada, District Ramgarh, Jharkhand.
- Ref: MoEF&CC, New Delhi EC Letter vide F.No. J-11011/41/2013-IA-II(I), Dated 7th September 2022-Copy enclosed.

#### Sir,

With reference to above and as directed vide above mentioned EC letter, please find enclosed copy of our Environmental clearance Letter F.No. J-11011/41/2013-IA-II(I). Dated 7th September 2022, as granted by MoEF&CC, New Delhi for Sponge Iron Plant (4x100 TPD), Induction furnace (2X12T+1X12T), Rolling Mill (90,000TPA) and 18 MW Power Plant (6 MW WHRB and 12 MW AFBC Boiler) of M/s Jharkhand Ispat Private Limited located at Hesla, P.O. Argada, District Ramgarh, Jharkhand.

This is for your kind information and record please.

871 Thanking you.

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**Yours Sincerely** For JHARKHAND ISPAT PVT. LTD.

Manoj Kumar (Manager Environment)

Encl: - As above.

# JHARKHAND ISPAT PRIVATE LIMITED

1

ADMN. OFFICE : Near P.N. Bank, Main Road, Ramgarh Cantt. Dist. - Ramgarh (Jharkhand) - 829 122

CIN Telephone : U34102UP1991PTC012872 06553-226846, 224601, Fax: 226845 E-mail : jiplramgarh@gmail.com

Ref. No.....

IS: 2830

#### WORKS :

Vill, & P.O.- Hesla, Argada Dist.- Ramgarh (Jharkhand) PIN. - 829 101

Date.....

10/09/2022

JIPL/076/2022-23 To The District Industries Centre Ramgarh Cantt. Ramgarh (Jharkhand)

- Sub : Submission of copy of Environmental clearance issued for Sponge Iron Plant TPD). (4x100 Induction furnace (2X12T+1X12T), Rollina Mill (90,000TPA) and 18 MW Power Plant (6 MW WHRB and 12 MW AFBC Boiler) of M/s Jharkhand Ispat Private Limited located at Hesla, P.O. Argada, District Ramgarh, Jharkhand.
- Ref: MoEF&CC, New Delhi EC Letter vide F.No. J-11011/41/2013-IA-II(I), Dated 7th September 2022-Copy enclosed.

#### Sir,

With reference to above and as directed vide above mentioned EC letter, please find enclosed copy of our Environmental clearance Letter F.No. J-11011/41/2013-IA-II(I), Dated 7th September 2022, as granted by MoEF&CC, New Delhi for Sponge Iron Plant (4x100 TPD), Induction furnace (2X12T+1X12T), Rolling Mill (90,000TPA) and 18 MW Power Plant (6 MW WHRB and 12 MW AFBC Boiler) of M/s Jharkhand Ispat Private Limited located at Hesla, P.O. Argada, District Ramgarh, Jharkhand.

This is for your kind information and record please.

Thanking you.

**Yours Sincerely** For JHARKHAND ISPAT PVT. LTD.

Manoj Kumar (Manager Environment)

Encl: - As above.

Regd Office : Flat No. 209, 2nd Floor, Tirupati Tower, SA 7/13-2 Akhta, Pahariya, Varanasi - 221007 (Uttar Pradesh)

# JHARKHAND ISPAT PRIVATE LIMITED

OLC

Ref. No..... JIPL/077/2022-23

ADMN. OFFICE : Near P.N. Bank, Main Road, Ramgarh Cantt. Dist. - Ramgarh (Jharkhand) - 829 122

CIN Telephone U34102UP1991PTC012872 06553-226846, 224601, Fax: 226845 E-mail : jiplramgarh@gmail.com



#### WORKS :

Vill. & P.O.- Hesla, Argada Dist.- Ramgarh (Jharkhand) PIN. - 829 101

Date.....

10/09/2022 \*

To The Regional Officer, Jharkhand State Pollution Control Board PTC Chowk, Matwari Road, Hazaribagh, Jharkhand.

- Sub : Submission of copy of Environmental clearance issued for Sponge Iron Plant (4x100 TPD). Induction furnace (2X12T+1X12T), Rollina Mill (90,000TPA) and 18 MW Power Plant (6 MW WHRB and 12 MW AFBC Boiler) of M/s Jharkhand Ispat Private Limited located at Hesla, P.O. Argada, District Ramgarh, Jharkhand.
- MoEF&CC, New Delhi EC Letter vide F.No. J-11011/41/2013-IA-II(I), Ref: Dated 7th September 2022-Copy enclosed.

#### Sir.

With reference to above and as directed vide above mentioned EC letter, please find enclosed copy of our Environmental clearance Letter F.No. J-11011/41/2013-IA-II(I), Dated 7th September 2022, as granted by MoEF&CC, New Delhi for Sponge Iron Plant (4x100 TPD), Induction furnace (2X12T+1X12T), Rolling Mill (90,000TPA) and 18 MW Power Plant (6 MW WHRB and 12 MW AFBC Boiler) of M/s Jharkhand Ispat Private Limited located at Hesla, P.O. Argada, District Ramgarh, Jharkhand.

This is for your kind information and record please.

Thanking you.

**Yours Sincerely** For JHARKHAND ISPAT PVT. LTD.

Manoj Kumar (Manager Environment)



Encl: - As above.

: 03

# JHARKHAND ISPAT PRIVATE LIMITE

ADMN. OFFICE : Near P.N. Bank, Main Road, Ramgarh Cantt. Dist. - Ramgarh (Jharkhand) - 829 122

CIN Telephone U34102UP1991PTC012872 06553-226846, 224601, Fax: 226845 OIC E-mail : jiplramgarh@gmail.com



#### WORKS :

Vill. & P.O.- Hesla, Argada Dist.- Ramgarh (Jharkhand) PIN. - 829 101

Date.....

10/09/2022 .

JIPL/078/2022-23 To

Ref. No.....

The Member Secretary,

Jharkhand State Pollution Control Board.

TA Division Building (Ground Floor),

HEC Campus, Dhurwa, Ranchi-834004.

- Sub : Submission of copy of Environmental clearance issued for Sponge Iron Plant (4x100 TPD), Induction furnace (2X12T+1X12T),Rolling Mill (90,000TPA) and 18 MW Power Plant (6 MW WHRB and 12 MW AFBC Boiler) of M/s Jharkhand Ispat Private Limited located at Hesla, P.O. Argada, District Ramgarh, Jharkhand.
- Ref: MoEF&CC, New Delhi EC Letter vide F.No. J-11011/41/2013-IA-II(I), Dated 7th September 2022-Copy enclosed.

#### Sir.

With reference to above and as directed vide above-mentioned EC letter, please find enclosed copy of our Environmental clearance Letter F.No. J-11011/41/2013-IA-II(I), Dated 7th September 2022, as granted by MoEF&CC, New Delhi for Sponge Iron Plant (4x100 TPD), Induction furnace (2X12T+1X12T), Rolling Mill (90,000TPA) and 18 MW Power Plant (6 MW WHRB and 12 MW AFBC Boiler) of M/s Jharkhand Ispat Private Limited located at Hesla, P.O. Argada, District Ramgarh, Jharkhand.

This is for your kind information and record please.

Thanking you.

**Yours Sincerely** For JHARKHAND ISPAT PVT. LTD.

Manoj Kumar (Manager Environment)

Encl: - As above.



# YUGANTAR BHARATI

Annexure - 19

**ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY** 



Accredited by:

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

# **Test Certificate**

ULR (Unique Lab Report) No.	- 18 M	T	C	4	0	3	2	2	3	0	0	0	0	0	0	3	5	4	F		
Discipline Chemical	Group	Atn	nosph	eric	Pollu	ition	ion Sample Description				Ambient Air Quality										
Report Release Date	31 <sup>st</sup> March,	2023					Re	port	ID				YB	AEEL	2303	24-14	3439-	-A01			
W. Order/ JSPCB App. No.	15893987					12	Wo	ork O	rder [	Date		100	24.0	3.202	23						
Type of Industry (If any)	Sponge Iron	1					Jol	b cod	le/ Re	f. no.	100		YB	AEEL	WA/L	JA/Ma	ar-23/	15			
Report Issue to	M/s Jharkh Village - He Dist. – Ran	and Piesla, Pingarh,	rivate O - Aı Jhark	Lim gad chan	a, d.	*	Z N			-th			0013	200		or (	3., 5	yh i	anti-		
Sampling Period	28/03/2023 -	- 29/03/	2023			Mode	of sa	mple	colle	ction			B	y YBA	AEEL	Team	1				
Sampling Protocol	IS:5182 and	CPCB	Air Ma	anua	l Vol	ume-1	(NAAC	QM/36	5/2012	2-13)	1.1						18		-		
	A. Ne	A. Near Main Gate							230	38'57.	87"N	, 85%	27'53.	22"E		31					
Sampling Locations	B. Ne	B. Near ESP Stack								23º38'55.39"N, 85º27'45.97"E						1.03					
11 M M	C. Ne	C. Near Online PM-10 Analyser						alyser 23º38'56.58"N, 85º27'51.72"E						- 53							
Meteorological Cond. of Field	W.C Clear	.C Clear RH % - 42							Ten	np	32°C			Constant of	W.D	) NV	V-SE				
Sample receipt Date	29/03/2023	Ana	lysis	Star	ted o	n	29/	03/20	)23	A	alysi	s col	mplet	ed on		3	1/03/2	023			

#### \*\*\*\*\*\*Test Results \*\*\*\*\*\*

Parameters	Test Methods	Unite	MIL 9/	Sa	ampling Locati	on	Lines and a
	rest methods	Units	NO %	Site A	Site B	Site C	Limits
Particulate matter (PM10)	IS:5182 (P-23) 2006, RA 2017	µg/m³	2.68	94.7	87.8	92.3	100
Particulate matter (PM2.5)	IS:5182 (P-24) 2019	µg/m³	2.60	39.5	38.6	34.7	60
Sulphure Dioxide (SO <sub>2</sub> )	IS:5182 (P-2) 2001 RA 2017	µg/m <sup>3</sup>	7.84	17.1	12.9	10.8	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-6) 2006 RA 2017	µg/m³	4.17	34.6	28.2	26.1	80

\*\*End of Report\*

Limit is specified as	Environmental (Protection) Rule – 1986.	
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	
110	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 limit.	

Sample Drawn By - Angad Munda Tested By - Akash Khalkho (Lab Analyst)

Only CONCERN for Jharkhand State Pollution Control Board Application No. 15893987 Submission Date 31-03-23

8/3/10-372	3	OKSI	202
Verified by		-510	ued by
Sumit Kant Srivastava		Sanjeev	Kumar Singh
(Sr. Lab Analyst)	100 million (200 million)	(Technical Manager)	
and a state of the	and Lease	Autro Atmos Yuganta Environment	spharic Pollution rati Analytical & al Engineering Laborator
Branch Office : - Jamshedpur	Dhanbad	Hazaribag	Pakur
Main Office : Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph : 098351-97960, 098357-86677, Email - vbaeel@gmail.com, Web - https://vbaeel.in		khand ns://vhaeel.in	



# JHARKHAND ISPAT PRIVATE LIMITE

0/0

CIN Telephone

ADMN. OFFICE : Near P.N. Bank, Main Road, Ramgarh Cantt. Dist. - Ramgarh (Jharkhand) - 829 122 U34102UP1991PTC012872 : 06553-226846, 224601, Fax : 226845

E-mail : jiplramgarh@gmail.com

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## WORKS :

Vill, & P.O.- Hesla, Argada Dist.- Ramgarh (Jharkhand) PIN. - 829 101

Annexure - 20

#### Ref. No... JIPL/042/2022-23

Date. 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 & M.S. Billet Plant.

Dear Sir,

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

Please find above in order and do the needful.

Thanking you,

Yours faithfully, For JHARKHANFD ISPAT PVT.LTD.

Manoj Kumar Manager (Environment)

Encl: As above.

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

रतीरा डाक RJ218528685IN IVR:82742185286 RL RAMGARH CANTT HO (829122) Counter No:1,23/06/2022,11:14 India Pha TO: THE REGIONAL OFFICER, H BAGH PIN:825301, Hazaribagh HO From: JHARKHAND ISPAT PVT. RAMGARH Wt:25gas Amt:27.00(Cash) (Track on www.indiapost.gov.in) (Dial 18002666868) (Wear Masks, Stay Safe)

Regd Office : Flat No. 209, 2nd Floor, Tirupati Tower, SA 7/13-2 Akhta, Pahariya, Varanasi - 221007 (Uttar Pradesh)

#### ENVIRONMENTAL STATEMENT Jharkhand Ispat Pvt. Ltd. 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	Jharkhand Ispat Pvt. Ltd. Occupier name – Sri Ram Chandra Rungta Village & PO – Hesla, Via - Argada Dist. – Ramgarh, Jharkhand – 829101
2.	Industry Category Primary (S.T.C. Code) Secondary (S.T.C. Code)	Red Category
3.	Production Capacity	Sponge Iron – 4 X 100 TPD M.S. Billet – 240 TPD
4.	Year of Establishment	2003/2006
5.	Date of the last Environmental Statement Submitted	22/09/2021

#### PART - B

# WATER AND RAW MATERIAL CONSUMPTION

:

#### (I) <u>Water consumption in m3/day</u>:

Process & Cooling

170.84 m3/day (Sponge Iron)

127.77 m3/day (M.S. Billet)

5.28 m3/day (Sponge Iron)

Domestic

3.95 m3/day (M.S. Billet)

	Process Water Consumption per Unit of Product Output			
Name of Product	During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)		
Sponge Iron	0.951	0.951		
MS Billet	0.951	0.951		

# (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)
Coal	Sponge Iron	1.892	1.520
Dolomite		0.052	0.037
Iron Ore/Iron Ore Pellets		1 954	1.021
MS scrap		0.112	1.931
Pig Iron	MS Billet	0.112	.304
		0.196	0.007
Sponge Iron (I/F)		0.806	0.808

# (III) POWER CONSUPTION (KWH/MT):

During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)
58.475 KWH/MT of Sponge Iron	41.737 KWH/MT of Sponge Iron
1265.416 KWH/MT of MS Billet	1453.905 KWH/MT of MS Billet

# (IV) TOTAL PRODUCTION (MT):

Product Name	During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)	
Sponge Iron	66,017.00	65,598.00	
MS Billet	69,149.50	49,060.00	

# 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	<ul> <li>No industrial effluent is generated. In compliance to Zero Liquid Discharge (ZLD), the web camera and flow meter are installed with online monitoring facilities.</li> <li>The waste water generated from the office toilet and messes are discharged via sentic tank and soaks pits.</li> </ul>		
(b) Air	<ul> <li>Online continu with web conn</li> <li>Unit has install control of fugit</li> <li>Continuous An parameter is in</li> </ul>	ank and soaks pits. tinuous emission monitoring system of PM & SO2 are installed onnectivity with CPCB & SPCB. stalled Dust handling system with 100 m3 capacity silo to ugitive emission from bag filter & ESP discharge points. Ambient Air Quality Monitoring System (CAAQMS) PM 10 s installed	

# PART - D .

# HAZARDOUS WASTE

(As specified under Hazardous and Other Wastes (Management & Trans boundary Movement) Rules, 2016)

Hazardous	Total Quantity (Ltrs.)			
Waste	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.	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 – 1692859 /2019/17, dated 29/06/2019, valid upto 30.09.2022.	Hazardous waste authorization issued vide letter no JSPCB/ HO/ RNC/HWM – 1692859/2019/17, dated 29/06/2019, valid upto 30.09.2022.		
(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	A CONTRACTOR S	And the second second		
	1) Dolachar (Coal Chai)	53,775.00	8330.00		
13	2) Other waste	16838.39	93039.23		
(b)	From Pollution Control Facility	Nil	Nil		
(c)	Quantity recycled or re- utilized within the unit				
10	1) Sold (Coal Chai)	46574.21	6337.780		
	2) Dispose	16838.39	93039.23		
		I and the second s			

#### PART - F

#### <u>Please specify the characterization (in terms of composition and quantum) of hazardous as</u> 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) and other wastes, the solid waste generated in process are being sold at present, the earlier stock of coal char are also being sold as per demand.

#### PART - G

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

- Unit has 4X100 TPD Sponge iron kilns, installed four numbers of ESP attached to each Rotary kiln stack to control stack emission.
- Unit has installed eight numbers of bag filters at various material transfer points of Sponge Iron plant to control fugitive emissions. One fume extraction system (Ventury Scrubber) is installed with Induction Furnace plant.
- Unit has installed Dust/Ash handling system with 100 m3 capacity silo to control of fugitive emission from bag filter & ESP discharge points.
- 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 villages during rainy season every year. New plantations are also made every year in the plant during rainy season.
- The Captive Power Plant (AFBC & WHRB) and its installation will be taken up after grant of EC & CTE.

# 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) & SO<sub>2</sub>.
- · The web camera & flow meter has installed with online monitoring facilities.
- Continuous Ambient Air Quality Monitoring System (CAAQMS) PM 10 parameter is installed with online monitoring facilities
- Data of CEMS, Camera & flow meter are continuously updated on CPCB & SPCB server.
- Unit has installed Dust/Ash handling system with 100 m3 capacity silo to control of fugitive emission from bag filter & ESP discharge points.