RASHMI GREEN HYDROGEN STEEL PRIVATE LIMITED

Address : 9, AJC Bose Road, 1st Floor, Ideal Centre, Kolkata, West Bengal,700017
CIN : U27100WB2021PTC246718 | **PAN** : AALCR1619N | **TAN** : CALR19495A | **GSTIN** : 19AALCR1619N1ZT
Website : www.rashmigroup.com | **Email Id** : projectseamless@rashmigroup.com

Ref: RGHSPL/EC_SMC/DEC23/2023-24/01 Date: 27.11.2023

To,

The Deputy Director General of Forests (C),
Ministry of Environment, Forest and Climate Change,
Integrated Regional Office, A/3, Chandersekharpur,
Bhubaneswar – 751023, Odisha

Sub.: Six Monthly (December 1st 2023) Compliance status report of the conditions stipulated in environmental clearance for the period of April 2023 to September 2023 for "Proposed an Integrated Steel Plant of 3.1 million Ton per annum (Finished Steel) along with 230 MW (80 MW WHRB/TRT based + 150 MW coal based) Captive Power Plant by M/s Rashmi Green Hydrogen Steel Private Limited., located at Mouza – Changual (J.L. No. 360), Jethia (J.L. No. 361), Khatranga (J.L. No. 362), Gopinathpur (J.L. No. 359) and Goyalara (J.L. No. 391), P.S. – Kharagpur (Local), Dist. – Paschim Medinipur, West Bengal

Ref.: EC Identification No. EC23A008WB113189, File No. IA-J-11011/102/2022-IA-II(IND-I) dated: 07.03.2023.

Dear Sir,

With reference to the above mentioned subject, we are submitting herewith six monthly compliance status report of the conditions stipulated in Environmental clearance having EC Identification No. EC23A008WB113189 accorded vide File No. 11011/102/2022-IA-II(IND-I) dated: 07.03.2023 for "Proposed an Integrated Steel Plant of 3.1 million Ton per annum (Finished Steel) along with 230 MW (80 MW WHRB/TRT based +150 MW coal based) Captive Power Plant by M/s Rashmi Green Hydrogen Steel Private Limited., located at Mouza – Changual (J.L. No. 360), Jethia (J.L. No. 361), Khatranga (J.L. No. 362), Gopinathpur (J.L. No. 359) and Goyalara (J.L. No. 391), P.S. – Kharagpur (Local), Dist. – Paschim Medinipur, West Bengal for the period of April 2023 to September 2023.

We assure that we will comply with all the conditions laid down in the consent letter and also abide to follow all the Rules & Regulations.

Rashmi Green Hydrogen Steel Pvt. Ltd.

Director

Hope you will find the same in order.

Thanking you.

Yours Faithfully,

For, **M/s Rashmi Green Hydrogen Steel Private Limited**

Rashmi Green Hydrogen Steel Pvt. Ltd.

Authorized Signatory Director

CC to: 1. The Inspector General of Forest, Sub Regional Office, Kolkata, Ministry of Environment, Forests & Climate Change, Kolkata IB – 198, Sector-III, Salt Lake City– 700106 West Bengal

2. The Member Secretary, West Bengal Pollution Control Board, Parivesh Bhawan, 10A Block–LA, Sector–III, Salt Lake City, Kolkata – 700098.

Encl.: Six Monthly (December 1st 2023) Compliance status report along with annexures

Six monthly compliance status report of the conditions stipulated in environmental clearance For the period of April 2023 to September 2023 (December 1st 2023)

Project Details:

Proposed an Integrated Steel Plant of 3.1 million Ton per annum (Finished Steel) along with 230 MW (80 MW WHRB/TRT based +150 MW coal based) Captive Power Plant by M/s Rashmi Green Hydrogen Steel Private Limited., located at Mouza - Changual (J.L. No. 360), Jethia (J.L. No. 361), Khatranga (J.L. No. 362), Gopinathpur (J.L. No. 359) and Goyalara (J.L. No. 391), P.S. - Kharagpur (Local), Dist. - Paschim Medinipur West Bengal

EC Details:

EC Identification No. EC23A008WB113189,

File No. IA-J-11011/102/2022-IA-II(IND-I) dated: 07.03.2023

SUBMITTED BY

M/s Rashmi Green Hydrogen Steel Private Limited
9 AJC Bose Road 1st Floor, Ideal Center Kolkata,
West Bengal-700017
Email: rashmi.greenhydrogen@gmail.com

Name of the Project : Proposed an Integrated Steel Plant of 3.1 million Ton per annum (Finished Steel) along with 230 MW (80MW WHRB/TRT based +150 MW coal based) Captive Power Plant by M/s Rashmi Green Hydrogen Steel Private Limited., located at Mouza – Changual (J.L. No-360), Jethia (J.L. No- 361),Khatranga (J.L. No-362), Gopinathpur (J.L. No. 359) and Goyalara (J.L. No. 391), P.S. – Kharagpur (Local), Dist. – Paschim Medinipur ,West Bengal

Clearance Letters No. Date : EC No. EC23A008WB113189; File No. IA-J-11011/102/2022-IA-II(IND-I); dated 07.03.2023

Period of Compliance Report : April 2023 to September 2023

S. No.	Specific conditions	Compliance Status
i.	The PP shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, and risk mitigation measures relating to the project shall be implemented.	Agreed and noted for compliance. The project is still in construction phase. Only Seamless pipe/tube plant of capacity 3,20,000 Ton/year and Coal gasifier plant of 31,500 Cum/Hr are in operation after obtain valid CTO from WBPCB. All the environmental protection measures and safeguards proposed during construction phase & operational phase (i.e. use of movable water tanker, sweeping machine, installation of APCD etc.) are being complied.
ii.	The project proponent shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, and risk mitigation measures relating to the project shall be implemented.	
iii.	The project proponent shall utilize modern technologies for capturing of carbon emitted and shall also develop carbon sink/carbon sequestration resources capable of capturing more than emitted. The implementation report shall be submitted to the IRO,	The project is still in construction phase. Only Seamless pipe/tube plant of capacity 3,20,000 Ton/year and Coal gasifier plant of 31,500 Cum/Hr are in operation after obtain valid CTO from WBPCB. Rest of the EC accorded facilities are yet to be implemented.

Rashmi Green Hydrogen Steel Pvt. Ltd.

Director

	MoEF&CC in this regard.	The flue gas generated from balance EC accorded project i.e. Blast Furnace, Coke Oven Plant, Sinter, ferro alloy plant will be utilized in various units like in BF, Sinter, Coke Oven Plant, Ferro Plant, power generation etc up to extent possible as proposed in EIA/EMP report. Plantation is a suitable method to sequester carbon and 33% of the plant area shall be developed under greenbelt. Details of carbon foot prints and carbon sequestration is enclosed as **Annexure-I**.
iv.	The nearest human settlement from the project site are Khatranga (Adjacent to plant boundary,W), Gopinathpur (2.5 km, SE), Goalara (1.2 km, NE), Radhanagar (2.5 km, NNW) and Kharagpur (7.5 km, W). Project Proponent shall prepare and implement an action plan for environmental safeguard measures to minimise the impact on the habitation of the locals. The company shall also include some of these locations in its environmental monitoring programme.	Agreed and noted for compliance. The details of nearby schools, villages, habitations and other environmental sensitivity area and its impact due to the proposed activities and details mitigation measures is enclosed as **Annexure-II**.
v.	Digra Pond (3.30 km, W), Kajla Pond (1.85 km, NW), Paiknagari pond (3.25 km, E), Changual Pond (1.45 Km, SW), Midnapore High Level Canal (4.0 km, N), Kapaleshwari Khal (4.5 Km, SE), Kangsabati River (5.0 Km, N) and Jakala Nalla (2.5 Km, NW) exists within the study area of 10 km from the project site. A robust and full proof Drainage Conservation scheme to protect the natural drainage and its flow parameters; along with Soil conservation scheme and multiple Erosion control measures shall be implemented.	Impact on the drainage in the buffer zone is not anticipated as no construction will be taking place outside plant boundary. However, the volume of water from the plant area going outside the plant will reduce during rainfall as the rainwater will be stored in raw water reservoir/rain water harvesting ponds. A network of drainage system having size 0.5 m Depth × 0.5 m width will be provided to collect storm water and diverted to surface Ponds of Dimension 110 m x 205 m, 120 m X 170 m, 105 m X 85 m, 130m X 70 m, 50 m X 115 m & 20 m X 30 m . The drainage is being constructed in the proposed plant area.

Rashmi Green Power Steel Pvt. Ltd.

Director

		and connected to the rainwater harvesting pond. Storm water drainage will be constructed in the plant to ensure rain water runoff to flow easily. Contour & Drainage Map of the project site is enclosed as **Annexure-III**.   **Photograph of drain constructed in plant**
vi.	ESA's such as Griffins International School – 0.45 km & Khatranga School – 0.46 are in close proximity to the project site. Environmental safeguards as per the submitted EMP Plan for environmental sensitivity area shall be implemented.	Agreed & noted for compliance. The project is still under construction phase. The required Environmental Safeguard or Mitigation measures will be taken up to provide a system in order to reduce, avoid or offset the potential adverse environmental consequences of the development activities. The details of nearby schools, villages, habitations and other environmental sensitivity area and its impact due to the proposed activities and details mitigation measures is enclosed as **Annexure-II**.
vii.	The water requirement of 11,000	The industrial water requirement will be

Rashmi Green Hydrogen Steel Pvt. Ltd.

Director

	m^3/day, shall be met from the Surface Water (Kangsabati River) & Rainwater Harvesting Structure. Necessary permission from the Competent Authorities shall be obtained. PP shall explore the possibility of shifting to alternate source of water to reduce dependency on groundwater.	sourced from surface water (Kangsabati river), rain water harvesting pond and ground water (domestic water requirement only). ➢ Permission obtained from SWID, West Bengal for 150 KLD vides permits no.- P14211690051100000002TSE; P14211690052500000001TSE & P14211690049900000003TSE respectively. ➢ Permission obtained by Irrigation & water Department, Govt. of W.B. for 5000 KLD surface water from Kangsabati River vide Memo no-530 dated 22.04.2022 in name of Rashmi Green Hydrogen Steel Private Limited. ➢ Permission obtained by West Bengal Industrial Development Corporation Limited, Govt. of W.B. for 2.0 MGD surface water from Kansabati River vide letter no– WBIDC/VIP/Water & Sewerage/2014-15/2021/3627 dated 01.03.2021 in name of associate company RISPL (Formerly Gleam Iron Mines Pvt. Ltd.). Tie-up made for water demand with associate company. Water Permission from Irrigation & water Department, West Bengal from Kangsabati River, and SWID, West Bengal are given as **Annexure-IV.**
viii.	As committed, PP shall adopt 08 nos. of Villages namely Khatranga, Chakmakrampur, Jethia, Gopinathpur, Goyalara, Kajala, Changual & Radhanagar. PP shall formulate robust village Adoption program consisting of need-based community development activities, to develop them into model villages.	M/s. Rashmi Green Hydrogen Steel Private Limited is also proposing to adopt the below mentioned 08 nos. of Villages as a part of Social welfare development based on need base assessment carried. The detail of villages are: 1) Khatranga 2) Chakmakrampur 3) Jethia

Rashmi Green Hydrogen Steel Pvt. Ltd.

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		4) Gopinathpur 5) Goyalara 6) Kajala 7) Changual & 8) Radhanagar ₹ 45.0 crores under the head of EMP for Social & Infrastructure development activities for implementation of the commitments made during Public Hearing & fulfilling the Need based activities as per MoEF&CC OM dated 30.09.2020 is being earmarked which will be spent in 03 years. Details regarding the same are enclosed as **Annexure-V**.
ix.	Performance test shall be conducted on all pollution control systems every year and report shall be submitted to Integrated Regional Office of the MoEF&CC.	Agreed and being complied. The project is still in construction phase. Only Seamless pipe/tube plant of capacity 3,20,000 Ton/year and Coal gasifier plant of 31,500 Cum/Hr are in operation after obtain valid CTO from WBPCB. Rest of the EC accorded facilities are yet to be implemented. Latest stack emission report carried by NABL accredited laboratory for operation plant is enclosed as **Annexure-VI.**
x.	Three tier Green Belt shall be developed in a at least 33% of total project area as per the submitted action plan with native species all along the periphery of the project site of adequate width and tree density shall not be less than 2500 per ha. Survival rate of green belt developed shall be monitored on periodic basis to ensure that damaged plants are replaced with new plants in the subsequent years. PP shall develop greenbelt in the form of shelter belt comprising of total of 6 rows of 2x2 m plantation with tall trees & broad leaves with thick canopy along with windshield inside the plant premises towards	Agreed and is being complied with. Thick Green belt to a width of 30 meters with a tree density of about 2500 trees/ha consisting of at least 3 tiers consisting of large trees, smaller trees and shrubs, whereas some grasses and flowering plants are grown on lawns and garden. The short trees will be planted in the first rows and the tall trees in the outer rows around the purview of the project site. Greenbelt will be developed as a green buffer for mitigating the impact towards the villages namely Khatranga towards West direction and towards North East direction of project site. The greenbelt development will be covered 33% of

Rashmi Green Hydrogen Steel Pvt. Ltd.

Director

	Khatranga (Adjacent to plant boundary, W), Gopinathpur (2.5 km, SE), Goalara (1.2 km, NE), Radhanagar (2.5 km, NNW) and Kharagpur (7.5 km, W) villages and other ESA's to act as green barrier for air pollution & noise levels. Compliance status in this regard, shall be submitted to concerned Regional Office of the MoEF&CC.	the project area i.e. about 36.83 Hectares at the project area. Around 92,075 numbers of trees which are resistant to pollutants, will be planted as per CPCB/MoEFCC, New Delhi guidelines. Till September 2023, total 50,000 numbers of trees have been planted. Details of Greenbelt are annexed as **Annexure VII**.
xi.	Greening and Paving shall be implemented in the plant area to arrest soil erosion and dust pollution from exposed soil surface.	Agreed and being complied. Greening and paving is being carried out in parallel with implementation of proposed project.    **Paving of internal road and working area**

Rashmi Green Hydrogen Steel Pvt. Ltd.

Director

xii.	Solid waste utilization		
	a.	PP shall install a slag crusher to convert steel slag into aggregate for use in construction industry, fine sand for use as flux in steel plant, sand in brick making and as lime in cement making.	Project is still in construction phase. The plant will be designed to comply with the condition mentioned.
	b.	PP shall recycle/reuse solid waste generated in the plant as far as possible.	Agreed and Will be complied
	c.	Used refractories shall be recycled as far as possible.	Agreed and will be complied once the project comes in operation.
xiii.	Sinter Plant shall be equipped with Sinter cooler waste recovery system and suitable technology for control of dioxins and furans emissions from the plant.		Project is still in construction phase. Civil foundation erection work is in progress. Agreed and will be complied once the project comes in operation.
xiv.	Coke oven plant shall be equipped with modified wet quenching system.		Agreed & will be complied. Plant/Process design will be made keeping in record the said condition. The stipulated conditions will be complied by the project proponent.
xv.	Tar shall be recovered from producer gas and shall be sold to registered processors.		Agreed and will be complied once the project comes in operation.
xvi.	Following additional arrangements to control fugitive dust shall be provided:		
	a.	Fog/Mist Sprinklers at all on bulk raw material storage area (at the transfer points) like Iron Ore, Coal and for Fly Ash and similar solid waste storage areas.	Noted and Will be Complied. Project is still in construction phase. Bulk raw material storage area (at the transfer points) like Iron Ore, Coal and for Fly Ash and similar solid waste storage areas are yet to be implemented.
	b.	Proper covered vehicle shall be used while transport of materials.	Agreed. Project proponent will follow necessary precautionary step to control emission during transportation/movement of vehicles. • Trucks movement for transporting in fully covered way to avoid dust pollution. Speed of the vehicles to be regulated

Rashmi Green Hydrogen Steel Pvt Ltd.

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			(20 km/hr) to control the fugitive dust emission from the roads.
	c.	Wheel washing mechanism shall be provided in entry and exit gates with complete recirculation system.	Agreed and Will be complied.
xvii.	Blast Furnaces shall be equipped with Top Recovery Turbine (capacity more than 450 m^3), dry gas cleaning plant, stove waste heat recovery, cast house and stock house ventilation system and slag granulation facility.		Agreed and noted for compliance. Project is still in construction phase. Civil foundation erection work is in progress. Blast furnace will be equipped with Top Recovery Turbine and all other mentioned parameter will be complied.
xviii.	Secondary fume extraction system shall be installed on converters of Steel Melting Shop.		Not applicable, as no Steel melting shop (Induction furnace) is proposed to be installed.
xix.	Basic Oxygen Furnace (BOF) gas shall be cleaned dry		Agreed and will be complied. Project is under construction phase. The plant will be designed to comply with the condition mentioned. The said condition will be complied once the project comes in operation.
xx.	Electric Arc Furnace shall be closed type with 4th hole extraction system.		Agreed and noted for compliance. Project is under construction phase. The plant will be designed to comply with the condition mentioned.
xxi.	85-90 % of billets shall be rolled directly in hot stage. RHF shall operate using only Light Diesel Oil or Mixed BF/CO gas/Producer gas.		Agreed and will be complied once the project comes in operation.
xxii.	Cold Rolling Mill (CRM), color coating and galvanizing plants shall have CETP to treat and recycle the treated water from CRM complex. Sludge generated at CRM ETP shall be sent to TSDF.		Agreed and will be complied once the project comes in operation. Effluent from Process will be treated in ETP plant and treated water will be reused in plant process. Acid recovery plant will be installed to recover acid.
xxiii.	Dust emission from all the stacks shall be less than 30 mg/Nm^3.		Agreed and will be complied. As stated in S. No. i & ii, only Seamless pipe/tube plant of capacity 3,20,000 Ton/year and Coal gasifier plant of 31,500 Cum/Hr are in operation after obtain valid CTO from WBPCB. Latest stack emission report carried by NABL

Rashmi Green Hydrogen Steel Pvt. Ltd.

Director

			accredited laboratory for operation plant is enclosed as **Annexure-VI.**
xxiv.	Air Cooled condensers shall be used in the captive power plant.		Agreed and noted for compliance. The said condition will be taken care of at the time of finalizing the plant/process design.
xxv.	During operational phase at Captive Power Plant, PP shall measure coal dust exposures and to maintain coal dust exposures within stipulated standards at coal handling areas. PP shall identify extreme hot areas through heat stress survey as well as noise monitoring within process plants to ensure that workers not exposed above 90 dBA levels as per Factories Act, 1948.		Agreed and will be complied once the project comes in operation.
xxvi.	Ductile Iron (DI) plant shall have the following provisions:		
	a.	Bag filter for Zn coating and Mg converter area.	Agreed and noted for compliance. Construction of DIP plant not yet started. The said condition will be taken care of at the time of finalizing the plant/process design.
	b.	Wet scrubbers in paint and bitumen coating area.	
	c.	Bag Filter in Cement lining area.	
	d.	PTFE dipped bags shall be used in the plant.	
	e.	PM emissions from BF in Zinc coating area shall be 5 mg/Nm^3.	
	f.	ETP with recycling facility shall be included.	
xxvii.	Rain water harvesting shall be implemented to recharge/harvest water as per the action plan submitted in the EIA/EMP report.		Agreed and being complied. A network of drainage system having size 0.5 m Depth × 0.5 m width will be provided to collect storm water and diverted to surface Ponds of Dimension 110 m x 205 m, 120 m X 170 m, 105 m X 85 m, 130m X 70 m, 50 m X 115 m & 20 m X 30 m . The drainage is being constructed in the proposed plant area and connected to the rainwater harvesting pond. Rainwater harvesting structure is already implemented.

Rashmi Green Hydrogen Steel Pvt. Ltd.

Director

		  **Photographs of the rainwater harvesting pond developed inside plant premises**
xxviii.	The proposed project shall be designed as "Zero Liquid Discharge" Plant. ETP shall be installed and there shall be no discharge of effluent from the plant. Domestic effluent shall be treated in Sewage Treatment Plant. MSW waste shall be treated in digester and recovered gas shall be used in the canteen.	Agreed and noted for compliance. The project is still in construction phase. The plant is being designed as zero liquid discharge (ZLD). Treated domestic wastewater will be used for greenbelt development and dust suppression. ETP has been installed for operation seamless tube/pipe plant.  **Photographs of ETP**
xxix.	Action Plan for fire fighting system including provision for flame detectors, temperature actuated heat detectors with alarms, automatic sprinkler system, fixing the location of fire water tanks, separate power system for fire fighting, involvement of qualified and trained fire	Agreed and noted for compliance. An Application was submitted to the Fire and Emergency Services, Government of West Bengal and Office Of The Director General, West Bengal Fire & Emergency Services, Government Of West Bengal vide Memo no.:FSR/0125186231500106 Date: 07-

Rashmi Green Hydrogen Steel Pvt. Ltd.

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	personnel, nearest fire station & time required to reach the proposed site shall be prepared and implemented.	09-2023 has given their recommendation (copy enclosed as **annexure-VIII**). The same shall be implemented as per recommendation of Office Of The Director General, West Bengal Fire & Emergency Services, Government Of West Bengal.   **Fire extinguishers installed in plant**
xxx.	A proper action plan must be implemented to dispose of the electronic waste generated in the industry.	Agreed and noted for compliance. Electronic wastes will be collected and given to authorized recyclers/ refurbished. Management of e-waste shall be done in line with the E-Waste (Management) Rules, 2016.
xxxi.	All the commitments made to the public during the Public Hearing/Public Consultation shall be satisfactorily implemented. The action plan based on the social impact assessment study of the project as per the EMP in accordance to the Ministry's OM dated 30.09.2020 shall be strictly implemented and progress shall be	Is being complied with. All the commitments made to the public during the Public Hearing/Public Consultation and based on the social impact assessment study of the project as per the EMP is being implemented as per action plan submitted to the ministry. We had proposed ₹ 16.29 crores for the FY 2023-24 (1st Year) under EMP for social and infrastructure

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Director

	submitted to the Regional Office of MoEF&CC.	development. We have spent ₹ 2.93 Crores under EMP for social and infrastructure development during the period of April 2023 to September 2023 (Photographs attached as **Annexure-IX**).
xxxii.	The Plastic Waste Management Rules 2016, inter-alia, mandated banning of identified Single Use Plastic (SUP) items with effect from 01/07/2022. In this regard, CPCB has issued a direction to all the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) on 30/06/2022 to ensure the compliance of Notification published by Ministry on 12/08/2021. The technical guidelines issued by the CPCB in this regard is available at https://cpcb.nic.in/technical-guidelines-3/. All the project proponents are hereby requested to sensitize and create awareness among people working within the Project area as well as its surrounding area on the ban of SUP in order to ensure the compliance of Notification published by this Ministry on 12/08/2021. A report, along with photographs, on the measures taken shall also be included in the six monthly compliance report being submitted by the project proponents.	Agreed and noted for compliance. Single use plastic is banned & Posters & painting for use of Eco friendly Carry Bag has been displayed at various prominent areas for awareness of our employees, vendors & local people.
xxxiii.	The project proponent shall adopt the Clean Air practices like mechanical collectors, wet scrubbers, fabric filters (bag houses), electrostatic precipitators, combustion systems (thermal oxidizers), condensers, absorbers, adsorbers, and biological degradation. Controlling emissions related to transportation shall include emission controls on vehicles as well as use of cleaner fuels. Sufficient numbers of additional truck mounted	Agreed and noted for compliance. Project is under construction phase. The plant will be designed to comply with the condition mentioned. Dedicated water spraying tankers are being used for the suppression of fugitive emission. Greenbelt development is under process to control the fugitive emission. Rashmi Green Hydrogen Steel Pvt. Ltd. Director

	Fog/Mist water cannons shall be procured and operated regularly inside the project premises and also in the surrounding villages to arrest suspended dust in the atmosphere.	 **Mechanical sweeping machine**    **Water sprinkling on road**

S. No.	General Conditions		Compliance Status
I.	**Statutory compliance:**		
	i.	The Environment Clearance (EC) granted to the project/activity is strictly	Noted.

Rashmi Green Hydrogen Steel Pvt. Ltd.

Director

<table>
<tr><td></td><td></td><td>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.</td><td></td></tr>
<tr><td>II.</td><td colspan="3">Air quality monitoring and preservation</td></tr>
<tr><td></td><td>i.</td><td>The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission as well as 04 Nos. 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.</td><td>Purchase order of one (01) no. CAAQMS has been placed and procurement process of CEMS and remaining CAAQMS is under progress. Quotations for CEMS & CAAQMS have been received from suppliers. Copy of the PO & quotation is attached as Annexure-X.
Ambient air quality monitored at two locations viz., Near Plant Main Gate & coal gasifier unit by third party monitoring agency M/s Qualissure Laboratory Services, Kolkata which is NABL accredited laboratory. As per monitoring reports, emission levels are as follows:
<table>
<tr><th>Parameter</th><th>Plant Main Gate</th><th>Near coal gasifier unit</th></tr>
<tr><td>PM_{10} ($\mu g/m^3$)</td><td>55</td><td>44</td></tr>
<tr><td>$PM_{2.5}$ ($\mu g/m^3$)</td><td>23</td><td>20</td></tr>
<tr><td>SO_2 ($\mu g/m^3$)</td><td>5.2</td><td>4.8</td></tr>
<tr><td>NO_2 ($\mu g/m^3$)</td><td>22.9</td><td>24.8</td></tr>
<tr><td>CO ($\mu g/m^3$)</td><td>549</td><td>515</td></tr>
<tr><td>O_3 ($\mu g/m^3$)</td><td><19.62</td><td><19.62</td></tr>
</table>
Latest Ambient Air Quality Monitoring Analysis reports carried by NABL/MoEF accredited lab are attached in as Annexure-XI.</td></tr>
<tr><td></td><td>ii.</td><td>The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through laboratories recognized under Environment (Protection) Act,</td><td>Being Complied with.
Fugitive Emissions have been monitored at the three locations viz., Finishing production area, Hot mill area & Surface treatment area by third party monitoring agency M/s. Qualissure Laboratory</td></tr>
</table>

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Director

		1986 or NABL accredited laboratories.	Services, Kolkata which is NABL accredited laboratory. As per monitoring reports, emission levels are as follows: <table><tr><th>Location</th><th>Parameter</th><th>Result ($\mu g/m^3$)</th></tr><tr><td rowspan="4">Finishing product area</td><td>TSPM</td><td>141</td></tr><tr><td>RSPM</td><td>68</td></tr><tr><td>SO_2</td><td>8.0</td></tr><tr><td>NO_2</td><td>29.6</td></tr><tr><td rowspan="4">Hot mill area</td><td>TSPM</td><td>206</td></tr><tr><td>RSPM</td><td>94</td></tr><tr><td>SO_2</td><td>9.4</td></tr><tr><td>NO_2</td><td>33.6</td></tr><tr><td rowspan="5">Surface treatment area</td><td>TSPM</td><td>167</td></tr><tr><td>RSPM</td><td>82</td></tr><tr><td>SO_2</td><td>31.8</td></tr><tr><td>NO_2</td><td>76.3</td></tr><tr><td>H_2SO_4</td><td>76.3</td></tr></table> Fugitive Emissions monitoring report is enclosed as **Annexure-XII**.
	iii.	Sampling facility at process stacks and at quenching towers shall be provided as per CPCB guidelines for manual monitoring of emissions.	Agreed and will be complied. Project is under construction phase. The plant will be designed to comply with the condition mentioned. Sampling facility at for operational plant stacks has been provided.  **Photograph of the sampling facility**
	iv.	Appropriate Air Pollution Control (APC) system shall be	Agreed and Will be Complied. As mentioned, the project is under

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Director

		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.	construction phase, after obtaining valid NOC from WBPCB. 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 with the prescribed stack emission and fugitive emission standards.  **Photograph of the cyclone installed in operational plant**
	v.	The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.	Agreed and noted for compliance. Leakage detection and mechanized bag cleaning facilities for better maintenance of bags will be provided for under construction project.
	vi.	Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.	Agreed and Will be Complied. Dedicated water spraying tankers are being used for the suppression of fugitive emission. Greenbelt development is under process to control the fugitive emission.  **Mechanical sweeping machine**

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			   **Water sprinkling on road**
	vii.	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.	Fines/dust collected from APC and vacuum cleaning devices of under construction project will be handled as per EIA/EMP plan submitted while getting EC.
	viii.	The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.	Agreed. Project proponent will follow necessary precautionary step to control emission during transportation/movement of vehicles. • Trucks movement for transporting in fully covered way to avoid dust pollution. • Speed of the vehicles to be regulated

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			(20 km/hr) to control the fugitive dust emission from the roads.
	ix.	Facilities for spillage collection shall be provided for coal and coke on wharf of coke oven batteries (Chain conveyors, land based industrial vacuum cleaning facility).	Noted and will be considered in design phase.
	x.	Land-based APC system shall be installed to control coke pushing emissions.	Noted and will be considered in design phase.
	xi.	Monitor CO, HC and O_2 in flue gases of the coke oven battery to detect combustion efficiency and cross leakages in the combustion chamber.	Agreed and noted for compliance. CO, HC and O_2 in flue gases of the coke oven battery will be monitored to detect combustion efficiency and cross leakages in the combustion chamber.
	xii.	Vapor absorption system shall be provided in place of vapour compression system for cooling of coke oven gas in case of recovery type coke ovens.	Not applicable as non-recovery type coke oven with modified wet quenching is proposed to be installed.
	xiii.	Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.	The raw material stock piles are covered with industrial grade taruplin and water is sprayed by movable water mist fog cannon system.
	xiv.	Design the ventilation system for adequate air changes as per prevailing norms for all tunnels, motor houses, Oil Cellars.	Noted and is being considered in design stage.
III.	**Water quality monitoring and preservation**		
	i.	The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R. 277(E) dated 31st March 2012 (Integrated iron & Steel); S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time and	Agreed and is being complied with. The plant is being designed as Zero Liquid Discharge (ZLD) and 100% water is/will be recycled after treatment and is/will be used in process, dust suppression & green belt development. Procurement process of CEMS is under progress. Quotation for CEMS has been received from suppliers. Copy of the quotation is attached as **Annexure-XIII**. Effluent quality is being monitored at ETP inlet & Outlet by third party monitoring

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		connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	agency M/s Qualissure Laboratory Services, Kolkata which is NABL accredited laboratory. Latest effluent Monitoring Analysis reports carried by NABL/MoEF accredited lab are attached in as **Annexure–XIV**.
	ii.	The project proponent shall monitor regularly ground water quality at least twice a year (pre- and post-monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act,1986 and NABL accredited laboratories.	Monitoring of ground water quality carried by Qualissure Laboratory Services (NABL accredited lab.) in August 2023. Copy of the monitoring report is enclosed as **Annexure-XV**.
	iii.	Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.	Agreed and noted for compliance. The project is still in construction phase. Currently domestic waste water is being treated in septic tank followed by soak pit. Installation & commissioning of Sewage Treatment Plant shall be done in parallel with implementation of proposed project.
	iv.	Garland drains and collection pits shall be 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.	Agreed and noted for compliance. The project is still in construction phase.
	v.	Tyre washing facilities shall be provided at the entrance of the plant gates.	Agreed and noted for compliance. The project is still in construction phase.
	vi.	Water meters shall be provided at the inlet to all unit processes in the steel plants.	Project is under construction phase. Water meter has been installed in the operational plant.

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			 **Photograph of water flow meter**
IV.	**Noise monitoring and prevention**		
	i.	Noise pollution shall be monitored as per the prescribed Noise Pollution (Regulation and Control) Rules, 2000 and report in this regard shall be submitted to Regional Officer of the Ministry as part of six-monthly compliance report.	Being complied with. Noise level has been monitored at work zone i.e., (Construction as well as operational plant area) by third party monitoring agency M/s Qualissure Laboratory Services, Kolkata which is a NABL accredited laboratory. Noise monitoring reports are attached as **Annexure-XVI**.
V.	**Energy Conservation measures**		
	i.	Use torpedo ladle for hot metal transfer as far as possible. If ladles not used, provide covers for open top ladles.	Noted and will be complied with during project implementation stage.
	ii.	Restrict Gas flaring to < 1 %.	Noted and will be complied with.
	iii.	Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;	Agreed and will be complied with. Currently the project is under construction stage and solar internal street light is provided at potential area.

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	iv.	Provide LED lights in their offices and residential areas.	Agreed and will be installed.  **Photograph of the LED lights installed in plant** Illumination intensity monitoring report is enclosed as **Annexure-XVII**.
	v.	Ensure installation of regenerative /recuperative type burners on all reheating furnaces.	Agreed and will be complied with during project implementation stage.
VI.	**Waste Management**		
	i.	Oil Collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil. Oil collection trays shall be provided under coils on saddles in cold rolled coil storage area.	Noted and will be considered during design phase of Rolling mill.
	ii.	Kitchen waste shall be composted or converted to biogas for further use.	Agreed and will be complied with. Kitchen waste are composted and use as manure for green belt development.
VII.	**Green Belt**		
	i.	Green belt shall be developed in an area equal to 33% of the plant area with native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant	Agreed and is being complied with. Thick Green belt to a width of 30 meters with a tree density of about 2500 trees/ha consisting of at least 3 tiers consisting of large trees, smaller trees and shrubs, whereas some grasses and flowering plants are grown on lawns and garden. The short trees will be planted in the first rows and the tall trees in the outer rows around the purview of the project site. will be developed as a green buffer for mitigating the impact towards the villages namely Khatranga towards West direction and towards North East direction of project site.

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			The greenbelt development will be covered 33% of the project area i.e. about 36.83 Hectares at the project area. Around 92,075 numbers of trees which are resistant to pollutants, will be planted as per CPCB/MoEFCC, New Delhi guidelines. Till September 2023, 50,000 numbers of trees have been planted. Details of Greenbelt are annexed as **Annexure VII**.
	ii.	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the program for reduction of the same including carbon sequestration by trees in the plant premises.	GHG emissions inventory has already been prepared by the NABET accredited consultant Centre for Envotech and Management Consultancy Pvt. Ltd., Bhubaneswar during EIA study of proposed greenfield Integrated Steel Plant. Details of carbon foot prints and carbon sequestration is enclosed as **Annexure-I**.
	iii.	Project proponent shall submit a study report on Decarbonisation program, which would essentially consist of company's carbon emissions, carbon budgeting/ balancing, carbon sequestration activities and carbon offsetting strategies. Further, the report shall also contain time bound action plan to reduce its carbon intensity of its operations and supply chains, energy transition pathway from fossil fuels to Renewable energy etc. All these activities/ assessments should be measurable and monitor able with defined time frames.	Reply to the subject condition is already stated in **point no. iii** under Specific Conditions.
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.	HIRA report and Disaster Management Plan have been prepared by NABET accredited consultant and copy of the same is enclosed as **Annexure-XVIII**. Rashmi Green Hydrogen Steel Pvt. Ltd. Director

	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.	Agreed Proper PPE's provided for the worker. Without proper PPEs no one is allowed to work inside the plant premises. Safety awareness campaigns organised inside the plant premises with the objective of demonstrating the use of PPEs in different work zone and explaining the benefit of using PPEs.     **Photographs of tool box talk and PPEs**
	iii.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained.	Being Complied. The occupational health surveillance of the workers employed during operation & construction phase has been done and records are maintained as per the Factories Act. The OHS Record is attached as **Annexure-XIX**.
IX.	**Environment Management**		

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	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.	Agreed and Will be complied.
	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.	The company has a well laid down environmental policy duly approved by the board of directors. Copy of corporate environmental policy is attached as **Annexure–XX**.
	iii.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	Complied. A separate Environmental Cell both at project and company head quarter is in place. Copy of corporate environmental policy is attached as **Annexure–XX**.
X.	**Miscellaneous**		
	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	Complied. Advertisement for environment clearance dated 07.03.2023 in favour of M/S Rashmi Green Hydrogen Steel Private Limited published in two local newspapers (**Annexure-XXI**) that are widely circulated

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		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.	in the region are: • Aajkal dated 09.03.2023 (Bengali) • The Echo of India dated 09.03.2023 (English) Copy of the same has been submitted to ministry vide letter no. RGHSPL/ENVCOMPL/JUNE2023 dated 24.05.2023. Copy of the EC uploaded on company's website https://www.rashmiseamless.com/quality/.
	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.	Complied Copies of EC dated 07.03.2023 w.r.t. EC obtained in favour of M/S Rashmi Green Hydrogen Steel Private Limited submitted to DM, Paschim Medinipur & Gram Panchayat, Chakmakrampur, Changual and Lachhmapur vide letter dated 10.03.2023 (**Annexure-XXII**). Copy of the same has been submitted to ministry vide letter no. RGHSPL/ENVCOMPL/JUNE2023 dated 24.05.2023.
	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.	Is being complied with. Copy of the half yearly compliance report has been uploaded on company's website https://www.rashmiseamless.com/quality/ and regularly updated.
	iv.	The project proponent shall monitor the criteria pollutants level namely; PM_{10}, SO_2, NO_x (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.	Is being complied with. Copy of the half yearly compliance report along with monitoring report has been uploaded on company's website https://www.rashmiseamless.com/quality/ and regularly updated. Display board shall be installed at main gate of the company in parallel with implementation of the project.
	v.	The project proponent shall submit six-monthly reports on the status of the compliance of	Is being complied with. The last compliance report for the period

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		the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	October 2022 to March 2023 has been submitted to ministry vide letter no. RGHSPL/ENVCOMPL/JUNE2023 dated 24.05.2023 and while uploading on parivesh portal, we were facing an issue on the website of the ministry of Environment, Forest and Climate Change. We lodged a complaint on Parivesh portal on 31.05.2023 and issue resolved on 04.07.2023 (Screenshot attached as **Annexure-XXIII**).
	vi.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	Agreed and will be complied. The project is still under construction phase. Consent to operate for Seamless pipe/tube plant of capacity 3,20,000 Ton/year and Coal gasifier plant of 31,500 Cum/Hr obtained from WBPCB on 16.05.2023. Form-V will be submitted from the current financial year i.e. 2023-24 and uploaded on company's website.
	vii.	The project proponent shall inform the Regional Office as well as the Ministry, the date of Financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.	Noted The company is a private company and no finance is needed from outside. Land development work has been started after getting NOC from WBPCB.
	viii.	The project proponent shall abide by all the 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.	Agreed and Noted for compliance.
	ix.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of	Agreed and Noted for compliance. Rashmi Green Hydrogen Steel Pvt. Ltd. Director

		Environment, Forests and Climate Change (MoEF&CC).	
	x.	The PP shall put all the environment related expenditure, expenditure related to Action Plan on the PH issues, and other commitments made in the EIA/EMP Report etc. in the company web site for the information to public/public domain. The PP shall also put the information on the left over funds allocated to EMP and PH as committed in the earlier ECs and shall be carried out and spent in next three years, in the company web site for the information to public/public domain.	Agreed and is being complied with.
	xiii.	The Regional Office of this Ministry shall 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.	Agreed and Noted for compliance.
8.		The Ministry reserves the right to stipulate additional conditions, if found necessary at subsequent stages and the project proponent shall implement all the said conditions in a time bound manner. The Ministry may revoke or suspend the environmental clearance, if implementation of any of the above conditions is not found satisfactory.	Agreed and Noted for compliance.
9.		Concealing factual data or submission of false/fabricated	Agreed and noted.

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		data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.	
10.		Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Agreed and noted.
11.		The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter.	Noted. Rashmi Green Hydrogen Steel Pvt. Ltd. Director

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- Waste heat is recovered from sinter plant for heating in other processes.
- Waste heat recovery systems are provided.
- Dry gas cleaning plant with bag filter for blast furnace will be provided.
- Pre heating of Sinter Mix by utilizing waste heat of sinter cooler.
- Power Generation with WHRB (Without using fossil fuel) in coke oven plant- WHRB attached with coke oven (2 x 0.50 MTPA) gas based WHRB (8 Nos.) will be 50 TPH each. In total electricity generation from 02 modules of coke oven plant is 69 MW.
- Use of energy efficient electric motors complying IEE3 Standards, highly efficient VFD, minimizing idle running of machines.
- Optimizing loads and periodic preventive maintenance & lubrication
- Maximum utilization of renewable energy resources. Installation of energy efficient lightings. Use of energy saving light fittings.

7.12.3 Natural resource conservation

- Water will be conserved by practicing rainwater harvesting and maximum recycling within the plant premises.
- Waste water will be used after treatment in the plant.
- The company will explore possibilities for solar power generation on roof tops of buildings and installation of solar light system in all common areas, street lights, parking etc.

7.13 DETAILS OF CARBON FOOT PRINTS AND CARBON SEQUESTRATION

As coal is burned, a huge amount of CO_2 is released from the chimneys of the plant to the atmosphere. This caused a substantial rise in temperature of the earth's surface which is known as Global Warming. So, there is an urgent need for CO_2 sequestration for the exhaust gases from the chimney of these types of plants.

The various reactions observed in the combustion of coal are as follows:

$C + O_2 = CO_2$ (1)

$C + 1/2\ O_2 = CO$ (2)
$CO + 1/2\ O_2 = CO_2$ (3)
$S + O_2 = SO_2$ (4)
$H_2 + 1/2\ O_2 = H_2O$ (5)

Detail calculation of the carbon emission from the project is given below:

a) <u>IRON ORE PELLET PLANT</u>

Input: Coal = 36000 TPA

Output: Pellets= 12, 00,000 TPA
Pellet Dust=25,680 TPA
Pellet fines=33,360 TPA

Carbon presents in Input materials: (64%) =36,000 x 64/100=23,040 TPA

Carbon presents in Output materials (0.04 %) = [12, 00,000+25,680+33,360] x 0.04/100 = 503.616 TPA

Remaining carbon emits as CO & CO_2= (23,040-503.616) TPA =22,536.384 TPA

Assumption: 5% of C is converted to CO and rest to CO_2

Reactions taking place in Iron Ore Pellet Plant
$C + O_2 = CO_2$
Amount of C for CO formation (95 % of 22,536.384 TPA) = 21,409.56 TPA
1 mole of Co_2 → 1 mole of C
44 → 12
X → 21409.56
Therefore, X = 78,501.72
The amount of CO_2 is 78,501.72 TPA

Other reaction taking place in Iron Ore Pellet Plant

$C + Fe_2O_3 \rightarrow CO + FeO$
Amount of C for CO formation (5 % of 22536.384 TPA) =1126.82 TPA
1 mole of CO 1 mole of C
28 → 12
X → 1126.82
Therefore, X= 2629.25 TPA
The amount of CO is 2,629.25 TPA

Emissions from Iron ore pellet plant

S. No	Component	Quantity (TPA)
1	CO	**2,629.25**
2	CO_2	**78,501.72**

b) COKE OVEN PLANT

Input: Coking Coal = 13, 40,001 TPA

Output: Coke=10, 00,000 TPA
Coke Breeze=31,800 TPA

Coke oven Gas=30, 00, 00,000 Nm^3

Composition of coke oven gas:

S. No	Component	Percentage %	Quantity(Nm^3)	Quantity (TPA)
1	H_2	51	15,30,00,000	13,660.71
2	CH_4	34	10,20,00,000	73,134
3	CO	10	3,00,00,000	374.953
4	Others	5	1,50,00,000	10,500
	Total	**100**	**30,00,00,000**	**97,669.663**

CO emissions from the coke oven plant is 97,669.663 TPA

c) SINTER PLANT

Input: Coke Fines= 2, 79,993TPA

Output: Sinter= 40, 00,000 TPA
Sinter dust =5, 99,985 TPA

Carbon presents in Input materials (70 %) = 2, 79,993 x 70/100 TPA
= 1, 95,995.1 TPA

Carbon presents in output materials (0.05 %) = (40, 00,000 + 5, 99,985) x 0.05/100 TPA =230 TPA

Remaining carbon emits as CO & CO_2= (195995.1 -230) TPA = 1, 95,765.1 TPA

Assumption: 5% C converted to CO and rest CO_2.
Amount of carbon needed for production of CO (5%) is 9,788.26 TPA
1 mole of CO 1 mole of C
28 → 12
X → 9788.26
Therefore, X = 22,839.3
Amount of CO is 22,839.3 TPA

Amount of carbon needed for production of CO_2 (95%) is 185976.84 TPA
1 mole of CO_2 1 mole of C
44 → 12
X → 185976.84
Therefore, X = 681915.1
Amount of CO_2 is 6, 81,915.1TPA

Emission from Sinter Plant:

S. No	Component	Quantity (TPA)
1	CO	**22839.3**
2	CO_2	**681915.1**

d) MINI BLAST FURNACE

Input: Coal Fines = 6, 60,000TPA
Coke= 13, 00,000 TPA

Output: Hot metal/Pig Iron=30, 00,000TPA
MBF Slag= 10, 50,000TPA
Dust = 1, 57,200 TPA

Carbon presents in Input materials (Coal fines-52 % & Coke- 87 %)
= [(6, 60,000 x 52/100) + (13, 00,000 x 87/100)] TPA
= (3, 43,200 +11, 31,000) TPA
= 1,47,4200 TPA

Carbon presents in output materials (Hot metal -4.5 % & Slag & Dust -2.5 %)
= [(30, 00,000x 4.5/100) + (12, 07,200 x 2.5/100)]
= (28,800 + 30,180) TPA
= 58,980 TPA

Carbon emits as CO & CO_2= (1, 47, 4200 -58,980 TPA) TPA =14, 15,220 TPA

Assumption: 5% of C converted to CO and rest to CO_2
Amount of C required for production of CO (5%) is 70761 TPA
1 mole of CO → 1 mole of C
28 → 12
X → 70761
Therefore, X = 1, 65,109
Amount of CO is 1, 65,109 TPA

Amount of carbon needed for production of CO_2 (95%) is 13, 44,459 TPA
1 mole of CO_2 → 1 mole of C
44 → 12
X → 13, 44,459
Therefore, X = 49, 29,683
Amount of CO_2 is 49, 29,683 TPA

Emission from Mini Blast Furnace Plant:

S. No	Component	Quantity (TPA)
1	CO	**1, 65,109**
2	CO_2	**49, 29,683**

e) LD/BOF

Input: Hot metal/Pig Iron = 23, 00,000 TPA
Sponge Iron = 3, 69,650 TPA

Composition:

Inputs	Components	Weight Percentage	Quantity (TPA)
Hot metal/Pig Iron	Carbon	4.5 %	1,03,500
Sponge Iron	Carbon	0.05 %	184.83

Total Carbon presents in input materials =1, 03,684.83 TPA

Output materials: High Quality Liquid Steel =26, 13,636 TPA
Slag=3, 65,909 TPA

Total Carbon in output materials (Steel-0.25 % & Slag-0.15 %)
= [(26, 13,636) x 0.25 /100] + (3, 65,909 x 0.15/100) TPA
= (6,534.09 + 548.86) TPA
= 7,082.95 TPA

Remaining carbon emits as CO & CO_2= (1, 03,500-7,082.95) TPA
=96,417.05 TPA

Assumption: 5% of C is converted to CO and rest is converted to CO_2.
Amount of C required for production of CO (5 % C) is 4,820.9 TPA
1 mole of CO → 1 mole of C
28 → 12
X → 4,820.9
Therefore, X = 11,248.77
Amount of CO is 11,248.77 TPA

Amount of carbon needed for production of CO_2 (95%) is 91,596.15 TPA
1 mole of CO_2 1 mole of C
44 → 12
X → 91,596.15
Therefore, X = 3, 35,852.5
Amount of CO_2 is 3, 35,852.5 TPA

Emission from Induction Furnace/LRF /AOD Plant:

S. No	Component	Quantity (TPA)
1	CO	11,248.77
2	CO_2	3,35,852.5

f) FERRO- ALLOY PLANT

Input- Coke: 84,000 TPA
Coal: 21,000 TPA

Output: Ferro Alloy=70,000 TPA
Slag=84,000 TPA

Carbon presents in Input materials (Coal fines-52 % & Coke- 87 %)
= [(21,000 x 52/100) + (84,000 x 87/100)] TPA
= (10,920 +73,080) TPA
= 84,000 TPA

Carbon presents in output materials (Ferro Alloy-2.5 % & Slag-1.7 %)
= [(70,000 x 2.5/100) + (84,000 x 1.7/100)] TPA
= (1750 + 1428) TPA
= 3,178 TPA

Remaining carbon emits as CO & CO_2= (84,000-3,178) TPA
= 80,822 TPA

Assumption: 5% C converted to CO and rest to CO_2
Amount of C required for production of CO (5% C) is 4041.1TPA
1 mole of CO 1 mole of C
28 → 12
X → 4041.1
X= 9429.23
The amount of CO is 9429.23 TPA

Amount of C required for production of CO_2 (95% C) is 76780.9 TPA
1 mole of CO_2 1 mole of C
44 → 12
X → 76,780.9
X= 281529.96 TPA
The amount of CO2 is 281529.96 TPA

Emission from Ferro Plant:

S. No	Component	Quantity (TPA)
1	CO	**9,429.23**
2	CO_2	**2,81,529.96**

g) CAPTIVE POWER PLANT

Input Coal -11, 13,750 TPA

Carbon presents in Coal (32 %) = 356400 TPA
Total Carbon = 356400 TPA

Assuming 98.6% combustion

Total carbon content for the production of CO_2 = 356400 x 0.9986 TPA
= 355901.04 TPA

1 mole of CO_2 1 mole of C
44 → 12
X → 13, 04,970.48
X = 1304970.48 TPA
The amount of CO_2 is 13, 04,970.48TPA

Total carbon content for the production of CO is (11, 13,750 x 0.014)
= 15592.5 TPA
1 mole of CO 1 mole of C
28 → 12
X → 15592.5
X = 36382.49
The amount of CO is 7,870.40 TPA

Emission from CPP units:

S. No	Component	Quantity (TPA)
1	CO	36,382.49
2	CO_2	13,04,970.48

h) LIME DOLOMITE PLANT

Lime is calcium oxide (CaO) produced on heating (calcination) of limestone ($CaCO_3$) to a temperature of 900 deg C and above (usually 1100 deg C).

$CaCO_3(s)$ + heat = $CaO(s)$ + CO_2 (g)

Input: Lime stone/dolomite=1, 98,000 TPA
Carbon percentage in limestone/Dolomite= 12 %
Carbon present in $CaCO_3$ is (1, 98,000 x 12/100) =23,760 TPA

1 mole of CO_2 1 mole of C
44 → 12
X → 23,760
X = 87,120
The amount of CO_2 is 87,120 TPA

CARBON SEQUESTRATION:

The rate of carbon sequestering depends on growth parameters of the plants. Density of wood of plants plays a major role. Trees act as sinks for carbon dioxide by fixing carbon during photosynthesis and storing carbon as biomass (Carbon sequestration). The net long-term carbon dioxide source/sink dynamics of green belt area change through time as trees grow, get pruned, die and decay. Trees in green belt areas sequester and store carbon as they grow. Thus, green belt influence local climate, carbon cycles, energy use and climate

change. There are few methods companies have been/ will be adopting for capturing carbon emission:

Green field technology-company has done sufficient plantation in and around the plant premises. The detail is already discussed in section 4.11.2.

AMOUNT OF CARBON SEQUESTERED THROUGH GREENBELT

The rate of carbon sequestration depends on the growth characteristics of the tree species, the density of its wood, the location's conditions for growth, and the plant stage of the tree. It is greatest in the younger stages of tree growth, between 20 to 50 years. Further complicating the issue is the fact that far less research has been done on tropical tree species as compared to temperate tree species.

To calculate Amount of carbon sequestered through trees process are as follows:

a) Determine the total (green) weight of the tree.
b) Determine the dry weight of the tree.
c) Determine the weight of carbon in the tree.
d) Determine the weight of carbon dioxide sequestered in the tree
e) Determine the weight of CO_2 sequestered in the tree per year

a) Determine the total (green) weight of the tree.

The green weight is the weight of the tree when it is alive. The green weight of the above-ground weight as follows:

W (above-ground) = 0.25 D^2 H (for trees with D<11)
W (above-ground) = 0.15 D^2 H (for trees with D>11)

Note:
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 (total green weight) = 1.2* W (above-ground)

b) Determine the dry weight of the tree.

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

W (dry weight) = 0.725 * W (total green weight)

c) 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)

d) Determine the weight of carbon dioxide sequestered in the tree

CO_2 is composed of one molecule of Carbon and 2 molecules of Oxygen.

The atomic weight of Carbon = 12.00

The atomic weight of Oxygen = 15.99

The weight of CO_2 is C+ 2* O = 43.99

The ratio of CO_2 to C is 43.99/12.00 = 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)

CO_2 SEQUESTRATION CALCULATION DETAIL:

CASE-I (For the Initial First 05 Years)

From Proposed Trees:

Company had proposed to plant 89,100 nos. of trees within a span of 02 years of Avg. 1.5 meter tall or 4.92 feet tall ("H") and 05 cm trunk or 1.97 inch trunk ("D")

W (above-ground) = **0.25 D^2 H**
= 0.25 $(1.97)^2$ (4.92)
= 4.77 lbs (2.16 kg)

W (total green weight) = **1.2* W (above-ground)**
= 1.2 * 4.77
= 5.72 lbs (2.60 kg)

W (dry weight) = **0.725 * W (total green weight)**
= 0.725 * 5.72 lbs
= 4.15 lbs (1.88 kg)

W (carbon) = **0.5 * W (dry weight)**
= 0.5 * 4.15 lbs
= 2.08 lbs (0.94 kg ≈ 1.0 kg)

Average carbon sequestrated by proposed tree is 1.0 kg or 0.001 tons

=89,100 tress x 0.001 MT/Year = 89.1 MT/Year

Total carbon sequestrated = 87.75 MT/Year

CASE-II (Post 05 Years till maturity of the trees or 10 years)

Company will developed 33.40 % of total plant area as green belt @ 2500 trees per hectare. Approx. 89,100 nos. of trees planted in and around the plant premises all along the boundary. Consider the detail of the trees

Avg. 5 meter tall or 16.4 feet tall ("H")

25 cm trunk or 9.8 inch trunk ("D")

W (above-ground) = **$0.25\ D^2\ H$**
= $0.25\ (9.8)^2\ (16.4)$
= 393.76lbs (178.61 kg)

W (total green weight) = **1.2* W (above-ground)**
= 1.2 * 393.76
= 472.51 lbs (214.33 kg)

W (dry weight) = **0.725 * W (total green weight)**
= 0.725 * 472.51 lbs
= 342.57 lbs (155.39 kg)

W (carbon) = **0.5 * W (dry weight)**
= 0.5 * 342.57 lbs
= 171.29 lbs (77.69 kg ≈ 78 kg)

Average carbon sequestrated by existing individual tree is 78 kg or 0.078 tons

=89,100 tress x 0.078 MT/Year = 6949.8 MT/Year

CASE-III (From fully mature tree-post 10 years till 30 years)

Company will developed 33.40% of total plant area as green belt @ 2500 trees per hectare. Approx. 89,100 nos. of trees planted in and around the plant premises all along the boundary. Consider the detail of the trees

Avg. 10 meter tall or 32.81 feet tall ("H")
30 cm trunk or 11.81-inch trunk ("D")

W (above-ground) = **$0.15\ D^2\ H$**
= $0.15\ (11.81)^2\ (32.81)$
= 686.43 lbs (311.36 kg)

W (total green weight) = **1.2* W (above-ground)**
= 1.2 * 686.43
= 823.72 lbs (373.63 kg)

W (dry weight) **= 0.725 * W (total green weight)**
= 0.725 * 823.72 lbs
= 597.20 lbs (270.89 kg)

W (carbon) **= 0.5 * W (dry weight)**
= 0.5 * 597.20 lbs
= 298.60 lbs (135.44 kg ≈ 135 kg)

Average carbon sequestrated by tree is 135 kg or 0.135 tons

=89,100 tress x 0.135 MT/Year = 12,028.5 MT/Year

Additional under EMP for social & Infrastructure development avenue plantation will be done and find allocated is INR. 30.00 Lacs. In and around the plant premises in nearby villages green belt will be developed by planting more or less approx. 2, 00,000 nos. of trees and average carbon sequestration from fully mature trees will be 27,000 MT per year.

Total Carbon Sequestrated by Tree (Planted Inside of plant + Trees planted in nearby villages) = 39,028.5 MT /year.

The details of nearby schools, villages, habitations and other environmental sensitivity area and its impact due to the proposed activities and details mitigation measures

Areas occupied by sensitive man made land uses (hospitals, schools, places of worship, community facilities etc) within 10 km (study area) of the project site are given in Table below.

Detail	Approx. Distance (km)	Direction
Griffins International School	0.45	W
Khatranga Village & School	0.46	NE
Kharagpur city	7.5	W
Gopinathpur	2.5	SE
Radhanagar	2.75	NNW
Goalara	1.2	NE
Changual	2.25	SW
Indira Gandhi High School	9.61	WWN
IIT Kharagpur Campus	9.14	SW
Kharagpur Sub-division Hospital	8.50	W
Hizli Eco Park	10.00	WWS
Govt. State Hospital	8.35	WWS
SE Railway Mixed HS School	8.20	W
SE Railway Main Hospital	7.50	WWS
DMS College	6.20	WWN
Inda Balika Vidyalaya	6.38	WNW
Kharagpur College	6.85	WNW
Hizli College	9.00	SWS
Khargeshwar Temple	6.27	WWN
Jagannath Temple	9.98	WWN
Sersa Stadium, Kharagpur	7.40	WWN
Don Bosco School	8.78	NNW
Paparara High School	3.01	NEN
Kandrachak Primary School	9.18	SSE
Protected forest (02 nos.)	7.5-10	SW

Environmental Safeguard or Mitigation measures to be provided for a system to reduce avoid or offset the potential adverse environmental consequences of development activities. The objective is to maximize project benefits and minimize undesirable impacts. To "mitigate" means to make less harsh or hostile.

The project impact may be broadly divided into two phases.

- **During Construction Phase:** These may be regarded as temporary or short term and ceases with implementation of the project.

Construction activity includes foundation works, fabrication of storage tanks and erection of plant-machineries. The major activities during construction phase are given below.

- Site preparation and development
- Civil construction work
- Vehicular movement
- Loading and unloading civil items and plant machineries
- On site storage of civil items & plant machineries.
- Erection of plant and civil structures
- Power supply
- Maintenance of construction machinery.

Construction phase activities will have moderate impacts on land use, demography and socio-economics, on-site soils and on-site noise. It could also develop minor impacts on water use, air and water quality and ecology.

The activities can be divided into two categories, viz. Sub structural and super-structural work. Certain foundation would require pile driving and the machineries would pose noise and gaseous pollution.

Besides, construction work will involve cutting of trenches, excavation, concreting etc. which may generate dust, gaseous and noise pollution.

Mechanical erection work involves use of various mechanical equipment for storage, transportation, erection and on-site fabrication work. These activities may result in the generation of air and noise pollution, which will be contained by using water sprinkling and noise abatement measures respectively.

- **Impacts on Air Quality by construction by Vehicle movement**

  Particulate matter would be the predominant pollutant affecting the air quality during the construction phase. The activities like excavation, back filling and hauling operations along with transportation will generate dust emissions. However, the impact will be for a short duration. Moreover, this will be confined within the plant site and is expected to be negligible outside the plant boundary. The impact will, however, be marginal and temporary in nature.

  Mitigation Measures

  i. For the suppression of fugitive dust, sprinkling of water from tankers or other suitable means would be undertaken at the construction sites.

  ii. The traffic and use of machineries will generate undesirable gaseous pollutants. The expected emission level would be insignificant.

iii. It would be ensured that all the vehicles plying during construction are properly tuned and maintained to keep emissions within the permissible limits.

iv. Proper greenbelt development and plantation inside and outside the plant premises.

v. Water spraying on material to be handled before beginning work and spraying on unpaved surfaces twice a day to improve the working conditions and minimize dust pollution.

vi. Water spraying during loading and unloading operations to be carried out, where applicable.

vii. The designated areas for roads and parking spaces shall be black topped at the earliest.

viii. Transportation to be carried out in covered trucks.

ix. Transport vehicles shall be maintained leak proof to avoid spillage of rubble and soail.

x. A separate storage area will be demarcated for construction material to confine the dust dispersion.

xi. To ensure the measure taken to control emission effectively third party monitoring by NABL/MoEF accredited laboratory will be carried.

- **Impacts on Water Quality**

Water requirement at construction phase is estimated as 10-150 KLD on an average. Water will be used for construction of civil work, dust suppression and drinking purpose. Stagnant pools of water would promote breeding of mosquitoes and generally create unsanitary conditions. However, adequate arrangements would be made to ensure proper drainage of wastewater from the construction sites, so that such waters do not form stagnant pools nor aggravate soil erosion.

The waste water during construction will contain only suspended impurities. This water would be passed through settling ponds and recycled for use in gardening, dust suppression purposes etc. During monsoons, the water will be discharged to the nearest drain after passing the waste-water through settlements. Drinking water facility will be provided to the construction workers and domestic waste water will be discharged into the portable sewage treatment plant.

Mitigation Measures

i. Domestic waste water will be disposed off in portable/fixed STP.

ii. Construction workers will be brought from nearby villages so that domestic water is saved in many ways due to temporary requirements only.

iii. The drains will be properly aligned in conformity with the site drainage pattern so that the alteration is kept to the minimum and flooding or soil erosion does not occur.

iv. No discharge of any kind will be done inside or outside plant premises in any water body.

v. No discharge of waste water generated during construction activity will be done on soil or land area.

Thus, there will not be any discharge from the site which can have any impact on the water quality of the surrounding areas.

- **Impacts of Noise**

During the construction phase, noise will be generated from various construction activities as listed below:

i. Movement of vehicles carrying materials and loading & unloading activities;

ii. Excavation machines, concrete mixer and other construction machines;

iii. Operation of DG sets;

iv. Concreting, hammering, etc. and

v. Mechanical operations, like, drilling, fitting, etc.

All the above mentioned sources will be intermittent and would be experienced occasionally. It may also be noted that, most of the construction activities will be carried out only during the daytime.

The resultant maximum noise level for the above sources as calculated using combined effect equation is 87 dB(A). The sound pressure level generated by noise sources decreases with increase in distance from the source due to wave divergence. An additional decrease in sound pressure level from the source is expected due to atmospheric effect or its interaction with objects in the transmission path.

The noise produced during construction phase will have temporary impact on the existing ambient noise levels at the project site but restricted to small distance. The general noise levels due to construction activities and machinery installation may sometimes go up to 85 dB(A) at the work sites during day time..

Mitigation Measures to minimize noise pollution

i. Selection of low noise generating machinery/equipment;

ii. Engineering specifications shall be stipulated as a condition to maintain noise level equal to or less than75 dB(A) at 1 meter from all the relevant sources;

iii. Provision of rubber padding/noise isolators/silencers to contain the noise generated by machinery/equipment, wherever possible;

iv. Preventive maintenance of machinery/equipment as well as vehicles;

v. Demarcation of high noise zones at site with enclosures & barriers;

vi. Regular monitoring of ambient noise level as per monitoring plan shall be carried out;

- **Impacts on Soil and Land Use**

All major construction activities tend to create certain changes in the soils of the area. The excavated top soil (approximately 90,000 m^3) will be stacked with grass turf and will be used for backfilling/plantation. Topsoil would be used for greenbelt strengthening within the plant and its periphery, which would help in restricting the impacts due to the construction activities by creating a physical barrier.

During storms, some of the excavated soil and construction materials such as sand etc. would be blown up in the air and dispersed around the project site; some would also tend to be driven into the soil and clog inter granular spaces. However, in order to minimise such impacts, sprinkling of water shall be done.

With the adoption of the above stated mitigation measures, the marginal adverse impact would be reduced to no impact and will be confined within the project area and will not hamper the land use aspects outside. Hence, the impact due to this will be insignificant, reversible and short term in nature.

Minor vegetation (shrubs & busses) is present within the site. Hence, there will be minimal impact on land environment during construction. As minor vegetation will be removed from the project site, the same will be compensated by Green Belt development over an area of 35.10 Hectares i.e., 33.40% areas of total plant premises. Also, 0.9 Hectares (2.22 Acres to be developed under greenbelt on both side of road corridor) on additional land to be used for road access.

Although the overall impact on land environment is beneficial, still the following mitigation measures would be adopted for management of solid waste:

i. Attempt should be made to utilise the solid wastes through practicable ventures.

ii. Vacant areas would be made available for greenbelt and landscaping development to promote ecological improvement of the study area.

iii. The provisions of Construction and Demolition Waste Management Rules, 2016 shall be followed

iv. Construction wastes will be segregated as much as possible at site itself to increase the feasibility of recycling concrete and masonry as filling material and steel pieces as saleable scrap.

v. Litter disposal and collection points will be established around the worksites.

vi. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, solder butts, etc. will be disposed through recyclers (locally called kabadis).

vii. The construction spoils, Muck generated from drains and sedimentation pits, etc. will be temporarily stored at designated dumpsite located inside the plant premises. Later on these wastes will be used for landfilling/leveling work within the plant premises.

viii. Careful design, planning and good site management would minimize muck mixed with soil, concrete, mortars and cement grouts. Such waste shall be stored at earmarked place and used as filler for plinth raising purpose.

ix. Landscaping and tree plantation to protect against soil erosion and subsequent change in topography during heavy rains.

❖ **<u>During Operation Phase</u>:** These impacts are continuous warranting built in permanent measures for mitigation and monitoring.

- Storage & handling of ore, coal, coke, associated raw materials.
- Impact Due to Noise.- Operation of the Kilns and furnaces; material handling operations; ID Fans, motors, pumps; Trucks, dumpers, loaders, scrappers and earth-movers & Operation of turbines etc.
- Fugitive emission from process, movement of vehicles and handling of raw material.
- Point source emission from stack/chimney - Release of particulates and gaseous emissions.

Management has decided to adopt following strategies/ environmental safeguard to control emission. The details are as:

❑ **Impacts on Air Quality**

Two types of generation and discharge of pollutants, viz., fugitive emissions and stack emissions, have been considered and discussed in subsequent sections:

a) Stack emission of gases from the various units and the associated facilities will add pollutants to the atmosphere, which will require mitigation measures.

b) Fugitive emissions comprise mostly of dust generated due to handling of raw material/ pollution control equipment dust and solid waste. The products have not been considered to contribute to dust generation due to their nature.

Apart from subject greenfield project of M/s Rashmi Green Hydrogen Steel Pvt. Ltd., the group is operating 02 Nos. industrial units [Precast concrete, Column, Beam, Wall and Slab making unit (M/s Rashmi 6 Paradigm Pvt. Ltd.)-01 no. and DIP Finishing line (RML)-01 no.] in 10 km. radius area w.r.t. its proposed project. Also, TOR granted by ministry for green field integrated steel plant of OASPL. Further there is one more operating plant of BRG group in the vicinity of the project location. Thus, for the cumulative air quality prediction, the emission details of RGHSPL and above mentioned four (04) plants were taken into consideration.

The results of the cumulative impact on air from the model indicate that the predicted baseline concentration after implementation of the entire project of the associate companies with respect to the PM_{10}, SO_2, NO_X and CO are 61.53-80.64 $\mu g/m^3$, 6.51-15.82 $\mu g/m^3$, 12.66-29.99 $\mu g/m^3$ and <0.10-1.48 mg/m^3 respectively. The GLC predicted at all receptor locations are well within the PM^{10}, SO_2 and NO_X standard prescribed in NAAQS, 2009 (PM_{10}: 100 $\mu g/m^3$, SO_2: 80 $\mu g/m^3$, NO_2: 80 $\mu g/m^3$ & CO-2 mg/m^3).

To minimise the impact and keep the stringent emission level following action plant will be implemented in parallel with implementation of the project.

- Installation of less emissive units towards the school sides (land based unit setup).
- Installation of dust suppression system comprising of spray nozzles, water sprinklers, water gun etc. at the plant boundary towards school side and potential emission sources.
- Storage of Raw materials in covered shed/ with industrial taruplin.
- Use of movable water tanker- Road wetting on definite intervals will be carried out by mobile tankers on the access and internal roads.
- Use of adequate quantity of vacuum sweeper machines, movable water mist fog canon system to reduce fugitive emission and maintain better housekeeping.
- Transportation of materials through covered trucks and wagons. Also access and internal roads will be black topped and regular maintenance of roads will be carried out to protect the environment from fugitive dust emission.
- Maintaining stringent emission standard of 30 mg/Nm^3 by installing Air Pollution Control Devices (4-5 Field E.S.P, Bag Filters, Cyclone etc.) of Best Available Technology.
- Interlocking of APC equipment to initiate safe shut down plant units in case of APC failure.

- Designing height of the chimney/stack as per various published, notifications and guidelines by Ministry of Environment, Forest and Climate Change, Government of India and Central Pollution Control Board, New Delhi for proper dispersion of the pollutant and keeping particulate & gaseous emissions within statutory limit so that nearby villages/ Sensitive man made structure would not get affected by the pollution.

- Development of extensive thick greenbelt with 30 meter width along the plant boundary at the school side which will act as a green buffer/barrier. A total of about 35.10 Hectares (86.74 acres) of land within the plant site is envisaged for the plantation and development of green belt. Greenbelt will be developed under greenbelt & plantation @ at least 2500 tress per hectare. The plantation pattern would be in three tire systems as given in the table.

Tire	Habit	Height
1st Tire (Towards boundary)	Trees	>10m
2nd Tire (Middle layer)	Small Trees	5-10m
3rd Tire(Towards plant)	Shrubs	<5m

  Adequate arrangement for watering, particularly during early years, weeding and hoeing and replacing the dead saplings would be envisaged in the plan. Subsequently in upcoming year strengthening and gap filling of greenbelt area will be done.

- Also, 0.9 Hectares (2.22 Acres to be developed under greenbelt on both side of road corridor) on additional land to be used for road access.

- Additional under EMP for Social & Infrastructure development Avenue plantation will be done in nearby villages by planting at least 2,00,000 Nos. of tress.

- Provision of silencer at inlet and outlet of fan, vibration isolators on noisy machinery, sound proof enclosure in areas of heavy noise and proper upkeep of machines.

- Engineering specifications shall be stipulated as a condition to maintain noise level equal to or less than 75 dB (A) at 1 meter from all the relevant sources.

- Adequate measures will be envisaged in the project design to control air & noise pollution. Proposed adequate & effective control measures will be provided which include dust suppression. Careful design, planning and good site management would minimize the impact.

For control of fugitive emission following initiatives will be adopted by the management of RGHSPL:

- Dedicated 03 Nos. movable water tanker will be used for the suppression of fugitive emission.

- Dedicated 02 nos. street swiping machine will be used.
- Dedicated 04 nos. Water mist fog system will be used for suppressing fugitive dust emission.
- Water spraying at construction site to reduce fugitive emission. Water sprinkler/ water guns at least 180 nos. at potential emission sources (Dust prone area), internal road will be installed for effectively controlling the fugitive emission.
- Use of adequate quantity of mechanized machine for cleaning of plant area & internal drain like bobcats, motorized grader, mini floor cleaning/ scrubber machine, mini excavators & mini clamshell.
- Speed of the vehicles to be regulated (20 km/hr) to control the fugitive dust emission from the roads.
- The raw materials to be transported in covered dumpers or covered with tarpaulin. Overloading of truck strictly prohibited to control spillage and fugitive emission.
- Construction of paved/ concrete roads in parallel with implementation of the project for transportation to minimize fugitive emissions.
- Water spraying by movable fog canon mist system on the raw material stock piles to prevent the diffusion of particles in the atmosphere.
- Movement of raw material though covered pneumatic conveyor belt.
- Dedicated manpower/staff for maintaining effective housekeeping and cleaning.
- Construction of tyre washing facility at the entrance of the plant gate for controlling haul road emission.
- Installation of land use based APCD (Bag filters, ID Fan, pneumatic APC dust handling system and stack of adequate height) at potential secondary emission sources like- transfer points, intermediate storage, silo and crushing/grinding operations.
- Significant plantation and green belt development to mitigate the impact of fugitive dust on ambient air.
- Green belt with density of 2500 trees per hectare along and around boundary of the site to be developed as per CPCB guideline in a time bound manner.

- **Impacts on Water Quality**

Total water requirement for the proposed Greenfield integrated steel plant is 11000.0 KLD (458.33.0 m^3/Hr). Water requirement will be met from Kangsabati River & Rain Water Harvesting pond (During operation phase) and ground water

(during construction phase and partial meeting domestic water requirement only).

M/s Rashmi Green Hydrogen Steel Private Limited will follow "the zero wastewater discharge concept" for its proposed project and the entire wastewater will be recycled/reused in the plant for various uses after treatment in Septic tank, Soak Pit, STP and ETP.

For proposed project of M/s Rashmi Green Hydrogen Steel Private Limited total waste water generated after industrial and domestic use is 1296 KLD which will be treated in 2 Nos. ETP (1 x 600 KLD & 1 x 1,000 KLD) & another 1 No. STP (1 x 120 KL).

- Concrete box drains to prevent seepage and ground water contamination.
- Guard Pond/rain water harvesting pond of capacity 4,10,000 m^3 will be developed to to capture excess run off water.
- To avoid leaching through soil bed leading to contamination of ground water, raw material are stored on impervious floor.
- Garland drains are provided to trap run off materials.
- Effluent from the proposed project will be totally re-used after necessary treatment in ETP & STP plant. As such, no impact on aquatic ecology is envisaged due to operation of this project. All roads inside the plant will be metal/concrete. Trunk drains (0.50 m wide & 0.50 m depth) along the internal roads will be created. All the drains will be interlinked with higher size drain 1.0 m wide & 1.0 m depth that will be connected with 6 Nos. storm water reservoirs/Guard Ponds. The contaminated particle matters will be deposited as slurry to bottom of reservoir. Excess water during heavy rain fall will be discharged into the natural drain through silt trap pits to prevent washed silt from plant to enter the natural drain of nearby area.
- Online telemetry system with all bore well will be installed to ensure no excess water is abstracted.
- To ensure the water is meeting CPCB standard third party monitoring by NABL/MoEF accredited laboratory will be carried.

- **Impacts of Noise**

The sources of noise generation during operation phase are as follows:

- Operation of the Kilns, furnaces and other plant and machineries.
- Material handling operations, crushers
- ID Fans, motors, pumps

- Trucks, dumpers, loaders, scrappers and earth-movers
- Operation of turbines, etc.

Operation of these equipments will continuously generate noise, which will have adverse impact on the ambient noise levels. The adverse impact will be limited to the plant area and its immediate surroundings. No adverse impact will be there to local people as the site shall be surrounded by greenbelt which will act as a noise absorbing medium.

The following measures would be adopted for mitigating noise pollution:

- In order to mitigate the work zone noise level, it is proposed to confine all those noise prone equipment, which do not require continuous attendance in a separate housing. In addition, for those areas such as mills, crane movement, and other noisy process operations, the operational staff would work from the noise shielded control rooms/pulpits.
- At the time of design and engineering of the proposed steel plant, special attention would be provided for selection of low noise prone equipment. Rotary equipment prone to vibration would require vibration dampening at the time of grouting of those equipment. In addition, noise due to ejection of high pressure steam to air or exhaust gas would require attenuation by silencers of appropriate designs.

To minimise noise pollution, following measures will be implemented and practiced:

- Provision of silencer at inlet and outlet of fans.
- Provision of vibration isolators on noisy machinery.
- Providing sound proof enclosure in areas of heavy noise.
- Proper upkeep of machines.
- Providing ear plugs and muffs to workers.
- Regular check-up of workers and keeping them on rotation from heavy sound area to low sound area.
- Development of thick green belt.

❑ Impacts of Vehicle

Raw materials and finished products will be transported mainly by Rail. However, in the worst case due to unavailability of rakes, material will be transported by road. The background emissions in the proposed project area will be primarily confined to emissions from traffic plying on the nearby roads (NH-16 & NH-60) in the vicinity of the site. During the operation phase of the proposed project,

movement of goods vehicles and loading & unloading operations may contribute to air emission.

Around 75% of total raw materials and finished products shall be transported by rail and balance 25% shall be transported by Road though NH-60. However, in the worst case, due to delay in construction of dedicated railway siding or due to unavailability of rakes, 100% materials will be transported through road or will be unloaded at nearest public siding "Nimpura" and then transported to plant through trucks via NH-60 vice versa.

Traffic capacity as per IRC 106: 1990 for the 4-Lane Divided (Two way) highway (NH–16): 86, 400 PCU/Day. Currently 24.13% of the designed service volume of the road is being utilised. The LOS value is "B" (very good) for NH-60 in both the cases (Case-I & Case- II), hence the additional load on the carrying Capacity of the concern roads is not likely to have any change in the LOS value.

Thus, it can be concluded that the present road network is good enough to bear the increased traffic load even in worst case scenario. The company will take all appropriate measures to reduce the impact of transportation. Proper mitigation measures will be adopted by the company to minimize traffic flow to the best possible extent resulting in low level of dust, noise & gaseous emissions.

Mitigation Measures:

- Transportation will be through covered trucks and wagons.
- Access and internal roads will be black topped and regular maintenance of roads will be carried out to protect the environment from fugitive dust emission.
- Greenbelt will be made along the access roads to combat air emission and noise level.
- Road traffic will be regulated by providing "traffic controllers" at the road turnings.
- Speed Limit/ Bumper will be imposed to regulate vehicle speed.
- Water shower will be installed at the main gate of the plant to suppress fugitive dust emission.
- Road wetting on definite intervals will be carried out by mobile tankers on the access and internal roads.
- Ensuring all the vehicles are having the valid pollution clearance license from the concerned authority.
- Speed of the vehicles will be limited to control the fugitive dust emission from the roads.

- **Impacts on Soil and Ecology**

  Solid & Hazardous Waste Generation and Impact:

The main solid waste generated from the proposed units is slag from Blast Furnace, LD Furnace & Submerged Arc Furnace, Ash from Captive Power Plant, Dust from ESP & Bag Filters, Scrap, tarry waste from PGP, etc. Tarry waste in the form of coal tar is produced as by-product, which will be sold to WBPCB authorized vendor. The various waste materials arising out of the technological processes would be re-utilised to the extent possible.

Besides, there will be generation of sludge from ETP & STP, Used/Spent Oil in very small quantity. Used oils removed from machineries, gear boxes, compressors etc. will be collected in drums and temporarily stored in specifically earmarked areas. They will be disposed through the approved agencies. Sludge from ETP/STP will be sent to CHWTSDF.

Following practices will be followed for effective management of solid wastes:

- Dry grit, dust captured in the initial stage of blast furnace gas cleaning will normally be sufficiently free of tramp elements such as zinc and lead to be recycled to the sinter plant.

- In general, slag from steel production is crushed to recover the metallic content and the residual slag can be sold as a road aggregate or used on site to build roads or noise barriers.

- BF Slag granulation processes are generally preferable to traditional slag cooling methods from the environmental viewpoint, because the process can be enclosed, less water is consumed and more of the sulphur remains in the slag rather than being emitted. Fume capture and total condensation shall be used. Care is required to avoid producing mineral fibres ("angel hair"). Granulated slag can also be used for cement making.

- While hot, the sulphur in the blast furnace slag reacts with air to release SO_2. When water is added, H_2S is produced by the reaction of water on hot CaS and MnS. It appears that controlling the pH of the cooling water to between 7.5 and 9.5 may inhibit this reaction, which can be significant in slag pit cooling.

- Scale is removed from the open cooling circuit at various points, including the scale pit and sedimentation tanks. This scale is normally relatively free from oil, unless abnormal leaks occur. The scale can be recycled at the sinter plant although it is planned to sell it for cement manufacturing, in current proposal.

- Fly Ash shall be collected in dry form from the ESP and use in cement plant & manufacturing bricks.

- Ferro Alloy Slag Management - Generated slag shall be stored on the identified slag storage area provided with concrete flooring for prevention of contamination from toxic material spillage/leachate to soil & ground water. After metal recovery balance slag (SiMn slag- 69,300 TPA; FeSi Slag- 8,400 TPA & FeCr Slag- 77,280) shall be used as stone chips/road construction materials for road construction & repairing/land levelling purposes.

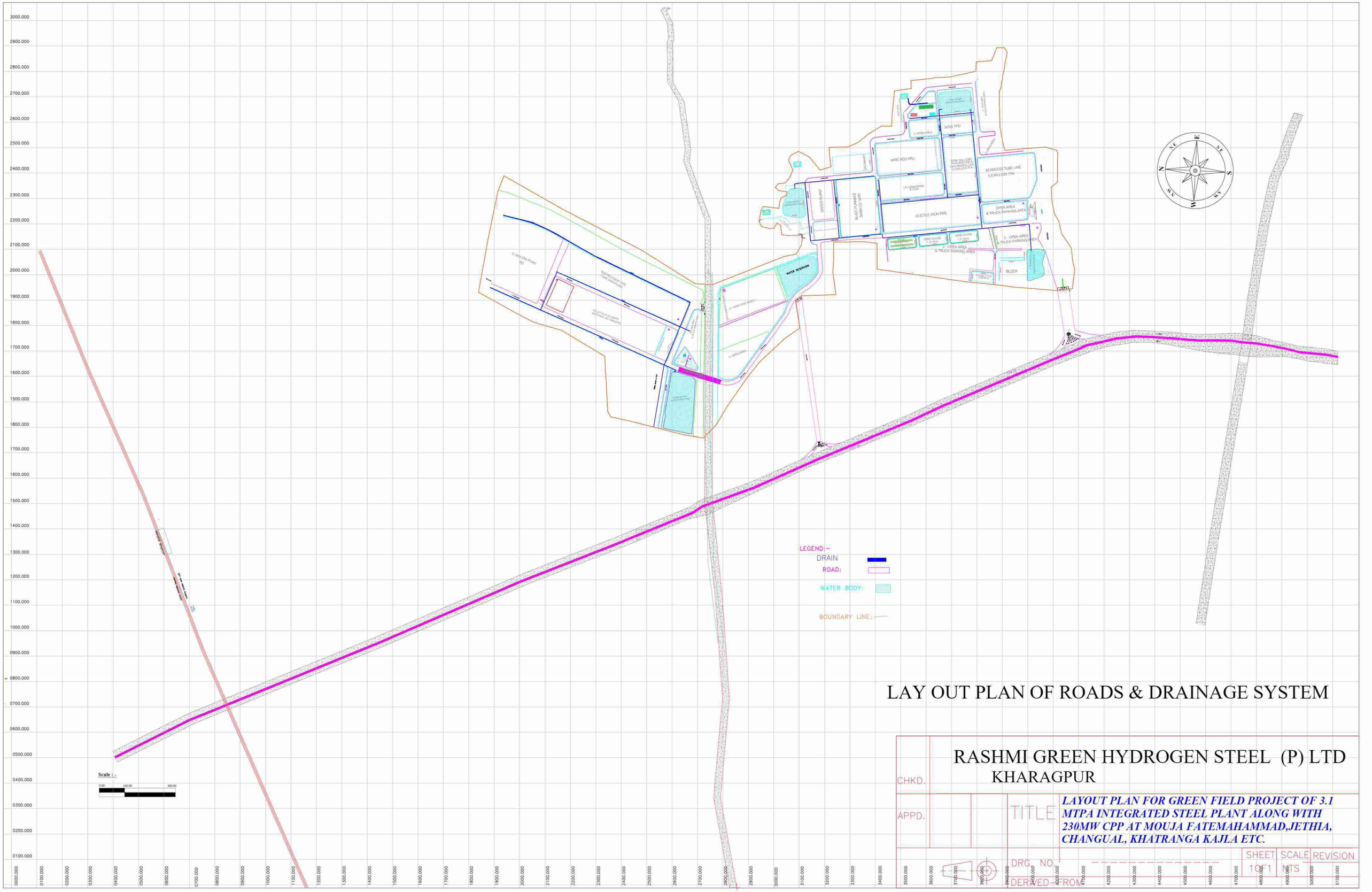
Besides, there will be generation of sludge from ETP & STP, Used/Spent Oil in very small quantity. Used oils removed from machineries, gear boxes, compressors etc. will be collected in drums and temporarily stored in specifically earmarked areas. They will be disposed through the approved agencies. Sludge from ETP/STP will be sent to CHWTSDF.

The human habitations/sensitive manmade structures are at a distance of 450-460 m from plant boundary. Thick Green belt to a width of 30 meters with a tree density of about 2500 trees/ha consisting of at least 3 tiers will be developed as a green buffer for mitigating the impact towards the villages namely Khatranga towards West direction and towards North East direction of project site. The greenbelt development will be covered 33.40% of the project area i.e. about 35.10 Hectares at the project area. Around 87,750 numbers of trees which are resistant to pollutants, will be planted as per CPCB/MoEFCC, New Delhi guidelines. Also, 1,350 nos. of tree sapling shall be planted on both side of road corridor on additional land to be used for road access.

Adequate measures will be envisaged in the project design to minimise the impact as minimum as possible. The total capital cost for environmental protection measures is proposed as ₹ 400.0 Crores. The total annual recurring cost towards the environmental protection measures is proposed as ₹ 40.0 Crores. Proposed adequate & effective control measures will be provided which include dust suppression. Careful design, planning and good site management would minimize the impact.

****

Annexure-III



LAY OUT PLAN OF ROADS & DRAINAGE SYSTEM

RASHMI GREEN HYDROGEN STEEL (P) LTD
KHARAGPUR

CHKD.

APPD.

TITLE ***LAYOUT PLAN FOR GREEN FIELD PROJECT OF 3.1 MTPA INTEGRATED STEEL PLANT ALONG WITH 230MW CPP AT MOUJA FATEMAHAMMAD,JETHIA, CHANGUAL, KHATRANGA KAJLA ETC.***

DRG. NO.

DERIVED FROM

SHEET	SCALE	REVISION
1 OF 1	NTS	

Annexure-IV

GOVERNMENT OF WEST BENGAL
IRRIGATION & WATERWAYS DIRECTORATE
OFFICE OF THE EXECUTIVE ENGINEER
WEST MIDNAPORE DIVISION
P.O: MIDNAPORE, DIST: PASCHIM MEDINIPUR
PHONE & FAX NO- 03229 275573
E-Mail- eewmid2012@gmail.com

Memo No. 530 *Date* 22.04.22

To
The Superintending Engineer,
Western Circle-II (I&W. Dte.),
P.O.- Midnapore, Paschim Medinipur.

Sub:- Permission for drawal of 10000 KLD raw water (5000 KLD for Rashmi Green Hydrogen Steel private Ltd. And 5000KLD for Orissa Alloy Steel Private Ltd.) for Rashmi Group of Industries.

Ref:- Memo No- 82-I/I-4M-28/2021 dt.- 23.03.2022 of Joint Secretary, I&W Dte. Memo no-249E dt-12.04.2022 of Superintending Engineer, Western Circle-II, Memo no- 268-I/I-4M-28/2021 dt- 28.12.2021 of Joint Secretary, I&W Dte. and Memo no-32E/P-15 dt- 18.01.2022 of Superintending Engineer, Western Circle-II.

Sir,

In reference to above the proposed site of drawal of 10000 KLD of water has been inspected from this end, detailed repair in this regard is mentioned below-

- Applicant Group: Rashmi Group of Companies
1. Orissa Alloy Steel Pvt. Ltd. at Mouza- Chakganesh (JL No-225), Malipur (JL No-226) & baradiha (JL No- 227) P.S-Kharagpur (Local) Dist- Paschim Medinipur.
2. Rashmi Green Hydrogen Steel Pvt Ltd. At Mouza- Khatranga, (JL no-362), Changual (JL No-360) and Jethea (JL No- 361) P.S-Kharagpur, Dist-Paschim Medinipur.

- Proposed quantity of Raw River Water
  i) For Orissa Alloy Steel Pvt. Ltd. 5000 KLD
  ii) For Rashmi Green Hydrogen Steel Pvt. Ltd 5000 KLD
  Total- 10000 KLD

- Location of Drawal point on River Bank /Bed (River : Kangsabati, Bank – (R/B): Lat: 22.390651 Long: 87.390344 Point is about 4Km down- stream of the Midnapore Anicut at Mouza-Patpacha, (JL no-218) P.S-Kharagpur, Dist-Paschim Medinipur

- Availability of water: Surface water remain available during monsoon period (15th June to 15th October) Sub-surface water along with surface water is proposed to be drawn by the applicant.

- Flood Embankment: Ex-Zamindary embankment is there in the vicinity of the proposed drawal.

- Use of I&W D Land: Two separate routes have been shown in two numbers of index maps by the applicant both the routes required use of I&W D land.

Recommendation- Permission for drawal of Raw water from the river by suitable arrangement may be given to the agency subject to the availability of water and the condition given below-

- Proper intake arrangement, measuring and monitoring arrangement should be made by the applicant and access should be allowed to official of I&W Dte.
- No embankment /bank of river should be damaged, any unintended damaged to embankment or asset of I&W D should be made good by the applicant.
- Details of departmental Land to be used is given by the applicant and necessary permission is obtained.
- All other mandatory clearances are obtained by the applicant.
- Tariffs as applicable for water and Land may be realised.

Rain water harvesting and recycling of water may also be suggested to reduce drawal of water during non-monsoon period.

This is for favour of your kind disposal please.

Enclo:- i) Copy of application of Orrisa Alloy Steel And Rashmi Green Hydrogen Steel Pvt. Ltd. With in closure.

ii) Copy of report of SDO, Lachmapore Midnapore.

Thanking you

Executive Engineer (I&W Dte.)
West Midnapore Division
Midnapore, Paschim Medinipur

Memo no.- 530/1 Date- 22/04/22

Copy to Sub-Divisional Officer, Lachmapore (I) Sub-Division, Midnapore, Paschim Medinipur for information and necessary action.

Executive Engineer (I&W Dte.)
West Midnapore Division
Midnapore, Paschim Medinipur.

FORM-4

[See Rules 9(3) and 10(5)]

Office of the Geologist,SWID & Member Secretary,
District Level Ground Water Resources Development
Authority(DLA) ,Paschim Medinipur

PERMIT FOR SINKING OF NEW WELL

[U/S 7(3)(b) /7(4)(b) / 7(5)(a) of the West Bengal Ground Water Resources
(Management ,Control and Regulation) Act 2005.]

PERMIT NO : P14211690051100000002TSE

1. a) Name of the Unit: : **RASHMI GREEN HYDROGEN STEEL PVT LTD**

   b) Address of the Unit: : **MOUZA- JETHIA, KHARAGPUR II ,WEST MEDINIPUR**

   c) Category of farmer :

   d) Serial No. of Application Form and Date Of Submission: : **BP/B 0199, SL- 49, 22-01-2022**

   e) Speciman Signature of the User :

2. Location Particulars

a) District : : **Paschim Medinipur**

b) Block,Mouza,J.L. No.,Plot No. : **Block- KHARAGPUR-II,**
Mouza -
J.L. No.- 169,
Plot No.- 511

c) Municipality/corporation, Ward No.,Borough No.,Holding No. : **Municipality/corporation- ,**
Ward No.- ,Borough No.- , Holding No.- ,Plot No.-. 511

3. Particulars of the proposed well

a) Type of the well	**Tube well**
b) Approx. depth of the well in mtr.	**24**
c) Purpose of well	**Industrial**
d) Assembly size (for tube well)	**150 mm x 100 mm**
e) Approx Strainer Length for tubewell	**6 m**
f) Diameter (for dug well)	**0 mm**
g) Type of the pump to be used	**Submersible**
h) H.P. of the pump	**5**
i) Operational Device of the pump	**Electric Motor**
j) Rate of the Withdrawal (m^3/hr.)	**10**
k) Maximum allowable running hours per day	**5.00**

This permit authorizes the owner applicant (user) to sink a well in the location specified at S.I (2) for extraction of ground water at a rate not exceeding that as shown at S.I(3) (j) and for running hours/day as shown at S.I(3)(K), and is valid subject to the observance of the condition as stated overleaf.

Place : Paschim Medinipur

Date : 20-04-2022

Sriparna Banerjee

Geologist,SWID & Member Secretary,
District Level Ground Water Resources Development
Authority(DLA) ,Paschim Medinipur

Conditions:

1. In case of any change of Ownership of the proposed well, fresh registration to be obtained.
2. No Change of location, design, rate of withdrawal and pumping device in respect of the proposed well as indicated at S.I(2) and (3) of this certificate shall be made without prior permission of the Competent Authority. Any Deviation in this regard shall lead to the cancellation to this permit.
3. In case of any particulars/ information furnished by the applicant in his application for the issuance of this permit is found to be incorrect during verification to any subsequents stage, this permit is liable for cancellation.
4. Any other condition imposed by the concerned Authority.

NB- Please See Reverse

Conditionality for operating this Tubewell

1 Construction of RWH as per DLA

2 Ground water quality report to be submitted by the applicant every year

3 Installation of Water meter is mandatory

Saibarna Banerjee

Geologist,SWID & Member Secretary,
District Level Ground Water Resources Development
Authority(DLA) ,Paschim Medinipur

END

Remarks : F4 No 001532

FORM-4

[See Rules 9(3) and 10(5)]

Office of the Geologist,SWID & Member Secretary,
District Level Ground Water Resources Development
Authority(DLA) ,Paschim Medinipur

PERMIT FOR SINKING OF NEW WELL

[U/S 7(3)(b) /7(4)(b) / 7(5)(a) of the West Bengal Ground Water Resources
(Management ,Control and Regulation) Act 2005.]

PERMIT NO : P14211690052500000001TSE

1. a) Name of the Unit: : **RASHMI GREEN HYDROGEN STEEL PVT LTD**

   b) Address of the Unit: : **MOUZA- JETHIA, KHARAGPUR II, PASCHIM MEDINIPUR**

   c) Category of farmer :

   d) Serial No. of Application Form and Date Of Submission: : **BP/B 0199, SL- 50, 22-01-2022**

   e) Speciman Signature of the User :

2. Location Particulars

a) District : : **Paschim Medinipur**

b) Block,Mouza,J.L. No.,Plot No. : **Block- KHARAGPUR-II,**
Mouza -
J.L. No.- 169,
Plot No.- 525

c) Municipality/corporation, Ward No.,Borough No.,Holding No. : **Municipality/corporation- ,**
Ward No.- ,Borough No.- , Holding No.- ,Plot No.-. 525

3. Particulars of the proposed well

a) Type of the well	**Tube well**
b) Approx. depth of the well in mtr.	**24**
c) Purpose of well	**Industrial**
d) Assembly size (for tube well)	**150mmx100 mm**
e) Approx Strainer Length for tubewell	**6 m**
f) Diameter (for dug well)	**0 mm**
g) Type of the pump to be used	**Submersible**
h) H.P. of the pump	**5**
i) Operational Device of the pump	**Electric Motor**
j) Rate of the Withdrawal (m^3/hr.)	**10**
k) Maximum allowable running hours per day	**5.00**

This permit authorizes the owner applicant (user) to sink a well in the location specified at S.I (2) for extraction of ground water at a rate not exceeding that as shown at S.I(3) (j) and for running hours/day as shown at S.I(3)(K), and is valid subject to the observance of the condition as stated overleaf.

Place : Paschim Medinipur

Date : 20-04-2022

Sriparna Banerjee

Geologist,SWID & Member Secretary,
District Level Ground Water Resources Development
Authority(DLA) ,Paschim Medinipur

Conditions:

1. In case of any change of Ownership of the proposed well, fresh registration to be obtained.
2. No Change of location, design, rate of withdrawal and pumping device in respect of the proposed well as indicated at S.I(2) and (3) of this certificate shall be made without prior permission of the Competent Authority. Any Deviation in this regard shall lead to the cancellation to this permit.
3. In case of any particulars/ information furnished by the applicant in his application for the issuance of this permit is found to be incorrect during verification to any subsequents stage, this permit is liable for cancellation.
4. Any other condition imposed by the concerned Authority.

NB- Please See Reverse

Conditionality for operating this Tubewell

1 Construction of RWH as per DLA

2 Ground water quality report to be submitted by the applicant every year

3 Installation of Water meter is mandatory

Saibarna Banerjee

Geologist,SWID & Member Secretary,
District Level Ground Water Resources Development
Authority(DLA) ,Paschim Medinipur

END

Remarks : F4 no 001531

FORM-4

[See Rules 9(3) and 10(5)]

Office of the Geologist,SWID & Member Secretary,
District Level Ground Water Resources Development
Authority(DLA) ,Paschim Medinipur

PERMIT FOR SINKING OF NEW WELL

[U/S 7(3)(b) /7(4)(b) / 7(5)(a) of the West Bengal Ground Water Resources
(Management ,Control and Regulation) Act 2005.]

PERMIT NO : P14211690049900000003TSE

1. a) Name of the Unit: : **RASHMI GREEN HYDROGEN STEEL PVT LTD**

   b) Address of the Unit: : **MOUZA - JETHIA, PS- KHARAGPUR (L), WEST MEDINIPUR.**

   c) Category of farmer :

   d) Serial No. of Application Form and Date Of Submission: : **BP/B 0199, SL- 48, 21-01-2022**

   e) Speciman Signature of the User :

2. Location Particulars

a) District : : **Paschim Medinipur**

b) Block,Mouza,J.L. No.,Plot No. : **Block- KHARAGPUR-II,**
Mouza -
J.L. No.- 169,
Plot No.- 499

c) Municipality/corporation, Ward No.,Borough No.,Holding No. : **Municipality/corporation- ,**
Ward No.- ,Borough No.- , Holding No.- ,Plot No.-. 499

3. Particulars of the proposed well

a) Type of the well	**Tube well**
b) Approx. depth of the well in mtr.	**24**
c) Purpose of well	**Industrial**
d) Assembly size (for tube well)	**150 mm x 100 mm**
e) Approx Strainer Length for tubewell	**6 m**
f) Diameter (for dug well)	**0 mm**
g) Type of the pump to be used	**Submersible**
h) H.P. of the pump	**5**
i) Operational Device of the pump	**Electric Motor**
j) Rate of the Withdrawal (m^3/hr.)	**10**
k) Maximum allowable running hours per day	**5.00**

This permit authorizes the owner applicant (user) to sink a well in the location specified at S.I (2) for extraction of ground water at a rate not exceeding that as shown at S.I(3) (j) and for running hours/day as shown at S.I(3)(K), and is valid subject to the observance of the condition as stated overleaf.

Place : Paschim Medinipur

Date : 20-04-2022

Sriparna Banerjee

Geologist,SWID & Member Secretary,
District Level Ground Water Resources Development
Authority(DLA) ,Paschim Medinipur

Conditions:

1. In case of any change of Ownership of the proposed well, fresh registration to be obtained.
2. No Change of location, design, rate of withdrawal and pumping device in respect of the proposed well as indicated as S.I(2) and (3) of this certificate shall be made without prior permission of the Competent Authority. Any Deviation in this regard shall lead to the cancellation to this permit.
3. In case of any particulars/ information furnished by the applicant in his application for the issuance of this permit is found to be incorrect during verification to any subsequents stage, this permit is liable for cancellation.
4. Any other condition imposed by the concerned Authority.

NB- Please See Reverse

Conditionality for operating this Tubewell

1 Construction of RWH as per DLA

2 Ground water quality report to be submitted by the applicant every year

3 Installation of Water meter is mandatory

Saiparna Banerjee

Geologist,SWID & Member Secretary,
District Level Ground Water Resources Development
Authority(DLA) ,Paschim Medinipur

END

Remarks : F4 No 001533

RASHMI IRON & STEEL PRIVATE LIMITED

(FORMERLY: GLEAM IRON MINES PRIVATE LIMITED)

CIN: U14100WB2019PTC235300

ROOM NO. 3B, 1 GARSTIN PLACE, KOLKATA-700001, WEST BENGAL

Ref: RISPL/2022-2023/WATER TIE-UP

DECLARATION & UNDERTAKING FOR SUPPLY OF SURFACE WATER

M/s. Rashmi Iron & Steel Private Limited, is a flagship company of a renowned Industrial Group, originally incorporated on 16th day of December 2019 by name of Gleam Iron Mines Private Limited and subsequently name of the company changed to Rashmi Iron & Steel Private Limited on 23.06.2021, having its registered office at Room 3B, 1 Garstin Place, Kolkata, West Bengal, India - 700 001 is hereby declare and undertake that:

M/s. Rashmi Iron & Steel Private Limited has obtained water withdrawal permission for 2.0 MGD of raw material from river Kansabati by West Bengal Industrial Development Corporation Limited (WBIDCL), Govt. of W.B vide letter no –WBIDC/VIP/Water & Sewerage/2014-15/2021/3627 dated 01.03.2021.

M/s. Rashmi Green Hydrogen & Steel Private Limited, a Private Limited company, originally incorporated under Company Act on 27th day of July 2021 and having its registered Office at 9 AJC Bose Road 1st Floor, Ideal Centre Kolkata West Bengal 700017 is proposing to set up a green field Integrated Steel Plant of capacity 3.1 Million Ton per Annum (Finished Steel) along with 230 MW (80 MW WHRB/ TRT based + 150 MW Coal based) Captive Power Plant at Mouza – Changual (J.L. No-360), Jethia (J.L. No-361), Khatranga(J.L. No-362), P.S. – Kharagpur (Local), Dist. – Paschim Medinipur in the state of West Bengal, having latitude is $22^0$19'31.79" N to $22^0$20'44.97" N and longitude $87^0$23'32.09" E to $87^0$24'17.09" E. The total water demand for the project is 11,800 KLD.

After taking into consideration the interest and financial share cost for laying connecting pipe from Vidyasagar Industrial park to proposed location of RGHSPL (associate company of the Group), **M/s. Rashmi Iron & Steel Private Limited** agrees to provide 6,400 KLD water to **M/s. Rashmi Green Hydrogen & Steel Private Limited** from its sanctioned water permit.

I here by certified that all, the statements made in the above paragraph here in above are true to the best of my knowledge and belief.

For **M/s. Rashmi Iron & Steel Private Limited**

RASHMI IRON & STEEL PRIVATE LIMITED

Director/Authorised Signatory

(Authorised Signatory)

Date: 29.07.2022

WEST BENGAL INDUSTRIAL DEVELOPMENT CORPORATION LTD.

(A GOVERNMENT OF WEST BENGAL UNDERTAKING)
"PROTITI", 23, Abanindranath Thakur Sarani (Camac Street), Kolkata - 700 017
Phone : +91 33 2255 3700-705, Fax : +91 33 2255 3737
E-mail : wbidc@wbidc.com Web : www.wbidc.com
Corporate Identity Number : U75142WB1967SGC026988

No. WBIDC/VIP/Water&Sewerage/2014-15/2021/3627 1st March 2021

M/s. Gleam Iron Mines private Limited,
1, Garstin Palace,
Room No. 3B,
Kolkata – 700 001.
Email : gleamiron2019@gmail.com

Sub : Permission for drawal of water from pipeline system of "Vidyasagar Industrial Park" at Kharagpur, West Midnapore.

Ref : Your letter addressed to the Chairman, WBIDC dated 26.02.2021.

Sir,

With reference to the above, this is to inform you that WBIDC has received permission for drawal of 2 MGD of raw surface water from River Kangsawati for Vidyasagar Industrial Park from Irrigation & Waterways Department (Copy of permission enclosed).

With respect to your request, WBIDC has no objection to your prayer for drawal of water from pipeline system of Vidyasagar Industrial Park. Cost of laying connecting pipeline to your facility would be at your own cost.

The quantum and feasibility may be ascertained in due course of time.

Yours faithfully,

01/03/2021
(P. Kamalakanth)
Executive Director

GOVERNMENT OF INDIA
MINISTRY OF CORPORATE AFFAIRS
OFFICE OF THE REGISTRAR OF COMPANIES
Central Registration Centre

Indian Institute of Corporate Affairs (IICA), Plot no. 6,7,8, Sector 5, IMT Manesar, Gurgaon, Haryana, India, 122050

Dated: 11-05-2021

To,
GLEAM IRON MINES PRIVATE LIMITED
ROOM NO 3B, 1 GARSTIN PALCE, KOLKATA, Kolkata, West Bengal, India, 700001

Subject: Company's name change- RASHMI IRON & STEEL PRIVATE LIMITED - Availability of name under Section 4(5) of the Companies Act, 2013.

Sir/Madam

1. With reference to your application dated 30-04-2021 (SRN T17148362).It is informed that there is no objection in the availability of the changed name RASHMI IRON & STEEL PRIVATE LIMITED from the existing name GLEAM IRON MINES PRIVATE LIMITED to your company.

2. Still it must be taken care that the proposed name cannot be made available for a period exceeding 60 days from the date of approval and this approval does not grant any kind of right of privilege. The name is liable to be withdrawn at any time before approval of the name change, if it is found later on that the name ought not to have been allowed.
3. It is allowed subject to the compliance of Section 4(2), 4(3) and other applicable provisions of the Companies Act, 2013.

DS MINISTRY OF CORPORATE AFFAIRS 6

Yours sincerely,
Parvinder Singh
DEPUTY REGISTRAR OF COMPANIES
Registrar of Companies
Central Registration Centre, Ministry of Corporate Affairs

Note: The corresponding form has been approved by Parvinder Singh , DEPUTY REGISTRAR OF COMPANIES and this letter has been digitally signed by the Registrar through a system generated digital signature under rule 9(2) of the Companies (Registration Offices and Fees) Rules, 2014.

Government of West Bengal
Irrigation & Waterways Directorate
Office of the Superintending Engineer, Western Circle – II, Midnapore, Pin- 721101
Ph No.: 03222-268495/263055, e-mail: [illegible]

Memo No. Date:

From : The Superintending Engineer,
Western Circle – II, I & W Dte.
Midnapore, Paschim Medinipur,
Pin-721101.

To : The Secretary to the Govt. of West Bengal,
Jalsampad Bhavan, Salt Lake city,
Kolkata - 700091.

Sub: "**Memorandum of Understanding**" due to permission for drawal of 5000 KLD of raw surface water from river Kangsabati at Mouza: Patpacha, PS- Kharagpur, District- Paschim Medinipur.

Ref: Memo No. 219-I/1-4M-28/2012, dt.- 19.07.2022 of Joint Secretary, I & W Deptt.

Sir,

In reference to above, one signed copy of "**Memorandum of Understanding**" due to permission for drawal of 5000 KLD of raw surface water from river Kangsabati at Mouza: Patpacha, PS- Kharagpur, District- Paschim Medinipur sending here with for necessary action.

Encl.: One copy signed copy of
"**Memorandum of Understanding**"

Yours Faithfully,
— Sd —
Superintending Engineer,
Western Circle – II (I & W Dte.)
Midnapore

Memo. No. 7026/1(3) Date: 02/09/2022

Copy forwarded for information & necessary action to :

1. The Chief Engineer-South West, I & W Directorate, Khasjungle, Abash, Paschim Medinipur.
2. The Executive Engineer, West Midnapore Division, I & W Dte. Midnapore, Paschim Medinipur along with one signed copy of "**Memorandum of Understanding**".
3. M/S Rashmi Green Hydrogen Steel Private Limited, 9, AJC Bose Road, 1st Floor, Ideal Centre, Kolkata-700017 along with one signed copy of "**Memorandum of Understanding**"

Encl: As Stated.

28.9.2022
Superintending Engineer,
Western Circle – II (I & W Dte.)
Midnapore

Scanned with OKEN Scanner


Midnapore Anicut Dam
KANGSHABATI RIVER
DRAWAL POINT
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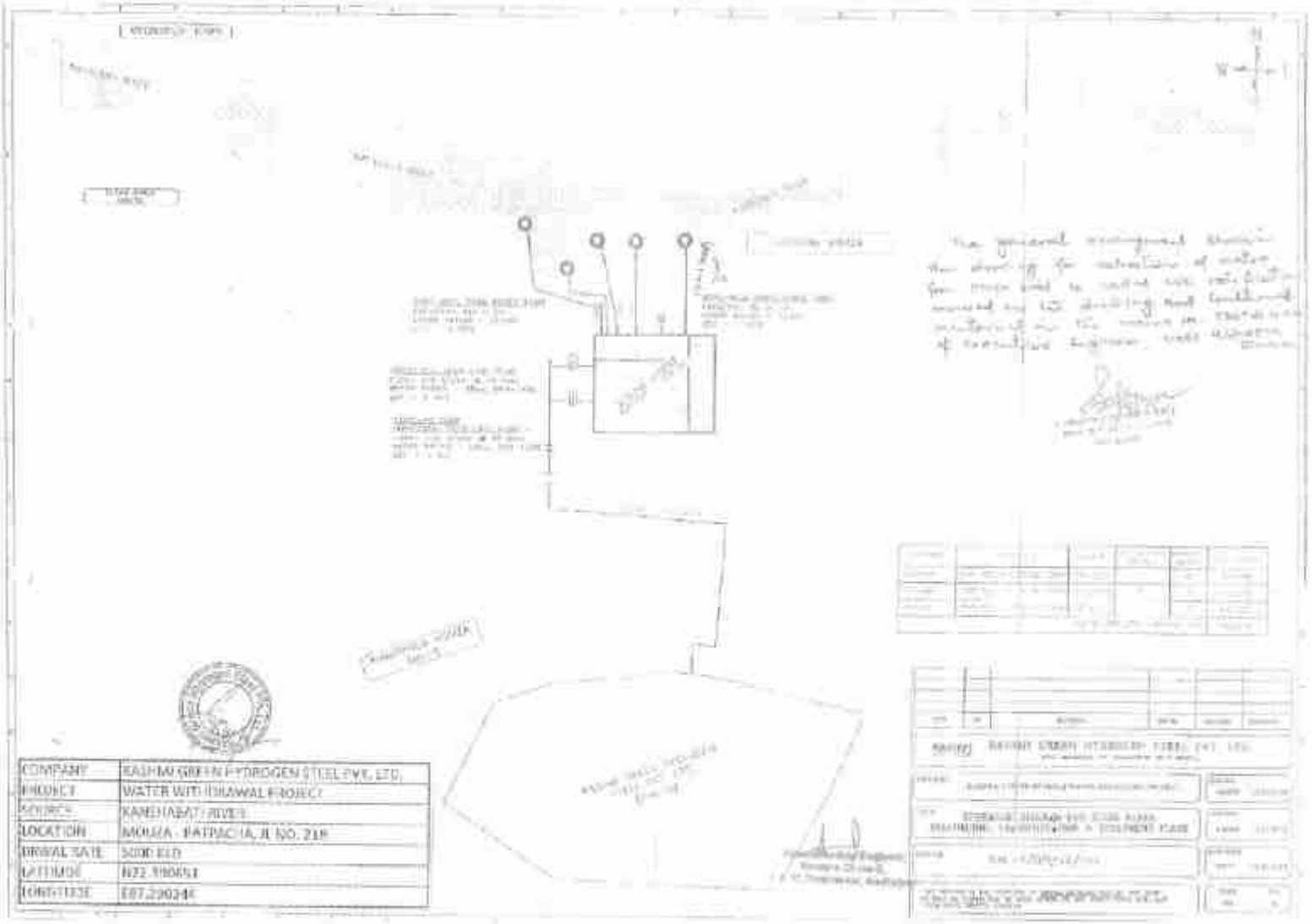

COMPANY	KASHMIR GREEN HYDROGEN STEEL PVT. LTD.
PROJECT	WATER WITHDRAWAL PROJECT
SOURCE	KANDI (ABAT) RIVER
LOCATION	MOUZA - PATPACHA, JL NO. 218
DRIVAL DATE	5030 ELD
LATITUDE	N32.330653
LONGITUDE	E87.220345

Revised action plan for CER as per MoEF&CC O.M. dated 30/09/2020

<table>
<tr><th rowspan="3">S. No.</th><th colspan="2" rowspan="2">Physical activity and action plan</th><th colspan="3">Year of implementation</th><th rowspan="3">Total Expenditure (₹ in Crores)</th></tr>
<tr><th colspan="3">(Budget in ₹)</th></tr>
<tr><th>Name of the activity</th><th>Physical Targets</th><th>1st (2023-24)</th><th>2nd (2024-25)</th><th>3rd (2025-26)</th></tr>
<tr><td colspan="7">PUBLIC HEARING BASED ACTIVITIES</td></tr>
<tr><td rowspan="2">1</td><td rowspan="2">Local employment</td><td>Maximum employment will be given to the Local youth as per State Government norms based on their knowledge and skill. In addition, vocational training will be given for the employment to local. Total 450 persons will receive stipend of Rs. 12,500 per month for six months training.</td><td>₹ 1.125</td><td>₹ 1.125</td><td>₹ 1.125</td><td>₹ 3.375</td></tr>
<tr><td>Vocational Training Center for Educated youth of villages and Skill development to unemployed local youth through National Skill Development Corporation, Govt. of India Scheme. (ITI, Paschim Medinipur 1st year, 2nd Year & 3rd Year)</td><td>₹ 0.500</td><td>₹ 0.380</td><td>₹ 0.350</td><td>₹ 1.23</td></tr>
<tr><td>2</td><td>Proper action to control pollution.</td><td>Most effective and advanced stage technology having techno-economic viability for air pollution control devices of adequate capacity will be installed in parallel with implementation of the proposed plant and it will be regularly monitored by dedicated team.
Also third party audit / monitoring will be conducted by approved lab/ agency on quarterly basis.
Performance test shall be conducted on all pollution control systems every year and report shall be submitted to Integrated Regional Office of the MoEFCC/ WBPCB with EC compliance report.
Plant will be design as Zero Liquid Discharge plant and entire waste water after treatment used in plant. For the proposed project 01 x 120 KLD STP and 1 x 600 KLD + 1 x 1000 KLD ETP will be installed.
The various waste</td><td colspan="3"><table>
<tr><th>S. No.</th><th>Item</th><th>Capital Cost (in Crores)</th><th>Recurring Cost (in Crores)</th></tr>
<tr><td>1</td><td>Cost of Air Pollution Control Devices/ System</td><td>300</td><td>30</td></tr>
<tr><td>2</td><td>Cost of Water conservation & Pollution Control</td><td>12.5</td><td>2.0</td></tr>
<tr><td>3</td><td>Cost of Solid Waste Management System</td><td>19.0</td><td>1.9</td></tr>
<tr><td>4</td><td>Green belt development</td><td>12.0</td><td>0.6</td></tr>
<tr><td>5</td><td>Noise Reduction Systems</td><td>6.0</td><td>1.0</td></tr>
<tr><td>6</td><td>Occupational Health Management</td><td>3.5</td><td>0.4</td></tr>
<tr><td>7</td><td>Risk Mitigation & Safety Plan</td><td>3.0</td><td>0.6</td></tr>
<tr><td>8</td><td>Environmental Monitoring Surveillance System</td><td>7.00</td><td>1.85</td></tr>
<tr><td>9</td><td>Implementation of Controlling measures to minimise impacts due to transportation and traffic</td><td>5.0</td><td>1.0</td></tr>
<tr><td>10</td><td>Setting Environmental Laboratory with necessary setup and manpower</td><td>1.12</td><td>0.65</td></tr>
<tr><td>11</td><td>EMP for Social and Infrastructure Development (Proposed)</td><td>45.0</td><td>-</td></tr>
<tr><td colspan="2">Total</td><td>415</td><td>40</td></tr>
</table></td></tr>
</table>

		materials arising out of the technological processes would be re-utilised to the extent possible. Hazardous waste will be disposed through the WBPCB approved agencies are sent to CHWTSDF, Haldia, W.B.				
3	Maintenance, Development & Construction of road in nearby villages	Construction, development & maintenance of the road, Cement/metal/murum in villages Khatranga, Jethia & Changual. (3.5 km in 1st year in Khatranga village, 3.5 km in 2nd year in Jethia and 3.0 km in 3rd year in Changual). (1.0 Km @ cost of 1.25 Cr.)	₹ 4.375	₹ 4.375	₹ 3.750	₹ 12.50
4	Construction of Temple	Construction of Temple with drinking water facilities and shed for piligrim in village Jethia (1 No.) in 1st year.	0.45	-	-	₹ 0.45
PUBLIC HEARING-CSR RELATED &						
NEED BASED ACTIVITIES						
(Adopting 08 nos. of villages – Khatranga, Chakmakrampur, Jethia, Gopinathpur, Goalara, Kajla, Changual and Radhanagar in nearby project area)						
5	Provision for health care facility	Free ambulance service for meeting emergency demand.	₹ 0.300	-	-	₹ 0.300
		Free Health checkup, blood donation camp	₹ 0.400	₹ 0.400	₹ 0.400	₹ 1.200
		Financial support to existing health center [Changual BPHC Community Health Center (1st Year & 2nd Year) and Gokulpur Health Center (3rd year)] with specialist doctor, compounder & assistant etc.	₹ 0.400	₹ 0.400	₹ 0.400	₹ 1.200
6	Financial Support to the Local School for better education facility and development of infrastructure (toilets, boundary wall), free bench distribution	1st Year - Gopinathpur Primary School, Jethia SSK School, 2nd Year - Khatranga & Chakmakrampur High School, 3rd Year - Changual Primary & high school, Financial support of 15 lakhs in each school & 02 nos. toilets construction (01 No. Male & 01 no. female) at each school. 01 no. toilet @ 1.50 Lakhs	₹ 0.330	₹ 0.330	₹ 0.330	₹ 0.990
7	Adopting 01 no. school for better education facility	Financial support for computer lab & other infrastructure facility in Griffin International School	₹ 0.500	₹ 0.500	₹ 0.300	₹ 1.300

8	Avenue plantation	Avenue plantation & sapling distribution will be done in nearby villages by planting more or less approx. 2,00,000 nos. of trees. (1st Year - Gopinathpur & Jethia, 2nd Year - Khatranga & Changual 3rd Year - Chakmakrampur) 40,000 trees in each village 01 no. tree plantation @ 375 rupees	₹ 3.000	₹ 3.000	₹ 1.500	₹ 7.500
9	Installation of Street Lighting (Solar/Led) provision at suitable public places	Installation of LED solar Street Lights with pole 180 nos. 1st year - Khatranga (25 nos.), Changual (25 nos.) & Gopinathpur (25 nos.) 2nd year - Jethia (25 nos.), Kajla (20 nos.) & Radhanagar (20 nos.) 3rd year - Goalara (20 nos.) & Chakmakrampur (20 nos) (01 no. LED solar Street Lights with pole @ 1 lac)	₹ 0.750	₹ 0.650	₹ 0.400	₹ 1.800
10	Providing Drinking water facility	Bore well/hand pump (80 Nos. @ 1 lacs per bore well) in villages 1st year - Khatranga (10 nos.), Changual (10 nos.) & Gopinathpur (10 nos.) 2nd year - Jethia (10 nos.), Kajla (10 nos.) & Radhanagar (10 nos.) 3rd year - Goalara (10 nos.) & Chakmakrampur (10 nos)	₹ 0.300	₹ 0.300	₹ 0.200	₹ 0.800
11	Providing collection bins/ dustbin	40 nos. of collection bins with stand in village 1st year - Khatranga (5 nos.), Changual (5 nos.) & Gopinathpur (5 nos.) 2nd year - Jethia (5 nos.), Kajla (5 nos.) & Radhanagar (5 nos.) 3rd year - Goalara (5 nos.) & Chakmakrampur (5 nos.)	₹ 0.038	₹ 0.038	₹ 0.025	₹ 0.100
12	Maintenance of road in nearby villages	Maintenance of 2.0 km road. 1st & 2nd Year - Goalara to NH-6 underpass (Nawab road - 2.0 km)	₹ 0.300	₹ 0.700		₹ 1.000
13	Infrastructure Development	Construction of 04 nos. community hall with other facilities 1st year - Khatranga 2nd year - Jethia & Changual 3rd year - Gopinathpur	₹ 0.400	₹ 0.800	₹ 0.400	₹ 1.600

14	Restoration of pond & development of drainage system	Restoration of ponds & development of drainage system 1st Year - Gopinathpur (02 nos. ponds & 1.5 km drainage system), Goalara (02 nos. pond & 1.0 km drainage system) & Jethia (01 no. pond), 2nd Year - Khatranga (02 nos. pond & 1.0 km drainage system), Kajla (01 no. pond) & Chakmakrampur (03 nos. pond & 1.5 km drainage system), 3rd Year - Changual (3.0 nos. pond & 2.5 km draiange system) & Radhanagar (02 nos. pond & 1.5 km drainage system) 01 no. pond restoration cost @ 2.5 Lakh & Development of drainage system @ 25.0 lakhs per km.	₹ 0.750	₹ 0.775	₹ 1.125	₹ 2.650
15	Awareness Campaign for Single Use Plastic & installation of plastic waste shredder machine in community hall	Awareness Campaign for Single Use Plastic in Lachmapur Gram Panchayat (1st Year), Chakmakrampur Gram Panchayat (2nd year) & Changual Gram Panchayat (3rd Year) Installation of plastic waste shredder machine 02 no. in each community hall of corresponding village 1st Year - Khatranga, Chakmakrampur, Jethia, 2nd Year - Gopinathpur, Goalara & Changual 3rd Year - Kajla and Radhanagar Awareness campaign @ 10.0 Lakhs & Shredder machine @ 2.5 Lakhs each.	₹ 0.175	₹ 0.175	₹ 0.150	₹ 0.500
16	Utilization paddy straw & other biomass for bio pelletization	Collection/ seggeration of paddy straw & other crop residue from nearby villages for bio pelletizting & feeding in bio pellet plant of associate company of the Group for utilising bio-pellet /co-firing in proposed boiler (blending with coal 5-10%) as per MOEFCC guidelines dated 22.10.2022.	₹ 2.000	₹ 2.000	₹ 2.000	₹ 6.000

17	Funding to IIT Kharagpur for supporting their CSR initiative programmes.	Funding to IIT Kharagpur for supporting their CSR initiative programmes such as environmental sustainability, agriculture research & rural development programme etc.	₹ 0.200	₹ 0.200	₹ 0.100	₹ 0.500
TOTAL			**₹ 16.29**	**₹ 16.15**	**₹ 12.56**	**₹ 45.00**

***

Annexure-VI

Qualissure Laboratory Services

361, Prantick Pally, 45/361, Bose Pukur Road, Kolkata -700107
Email : qualissure@gmail.com; info@qualissure.com ; Mob.No. 98312 87086 ; 9830093976

TC-6271

DOC NO: QLS/SAMP/08-8/00

TEST REPORT

Name & Address Of the Customer :		
M/s. Rashmi Green Hydrogen Steel Pvt. Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	Report No.	: QLS/P-86/23-24/C/09A
	Date	: 11.08.2023
	Sample No.	: QLS/P-86/23-24/09A
	Sample Description	: Stack Flue Gas
	Date of performance	: 09.08.2023-11.08.2023
	Ref No. Date	: 5400012651, : Dated – 05.08.2023

Analysis Result

Date & Time of Sampling : 07.08.2023 at 12:40 hrs. Sampling done by : C.Sahoo		Sampling Procedures : EPA/IS
A : General Information of Stack:		
1 Stack connected to	: Hot Water Generator	
2 Emission due to	: Wood Chips	
3 Material of construction of Stack	: MS	
4 Shape of Stack	: Circular	
5 Whether stack is provided with permanent platform	: Yes	
6 Generation Capacity	: 25 Ton	
B : Physical Characteristic of Stack:		
1 Height of Stack from ground level	: 35.0 m	
2 Diameter of Stack at bottom	: —	
3 Diameter of Stack at sampling point	: 1.0 m	
4 Height of the sampling point from ground level	: 17.0 m (approx)	
5 Area of Stack	: 0.7857 m^2	
C : Analysis/Characteristic of Stack:		
1 Fuel used : Woodchips	2. Fuel consumption : 500kg/Hr	
D : Results of Sampling & Analysis of gaseous Emission:	**RESULT**	**METHOD**
1 Temperature of emission (°C)	: 121	EPA Part 2
2 Barometric pressure (mm of Hg)	: 749	EPA Part 2
3 Velocity of gas (m/sec)	: 5.13	EPA Part 2
4 Quantity of gas flow (Nm^3/hr)	: 10814	EPA Part 2
5 Concentration of Carbon monoxide (%)	: <0.2	IS:13270-1992, Reaf : 2017
6 Concentration of Carbon dioxide (%)	: 9.4	IS:13270-1992, Reaf : 2017
7 Concentration of Sulphur dioxide (mg/Nm^3)	: 9.3	EPA Part-6
8 Concentration of Oxides of Nitrogen (mg/Nm^3)	: 27.1	EPA Part-7
9 Concentration of Particulate Matter (mg/Nm^3)	: 28	EPA Part-5
E : Pollution Control Device :		
Details of pollution control devices attached with the stack	: Cyclone Separator	
F : Remarks: Sample taken from final exhaust		

Report Prepared By :

for Qualissure Laboratory Services
Reviewed & Authorized By

Benimadhab Garai, Chemist
(Authorized Signatory)

—— End of the Report——

- *The results relate only to the item(s) tested.*
- *This Test Report shall not be reproduced without the permission of Qualissure Laboratory Services.*
- *The reserved part of sample(s), except perishable sample(s), shall be retained for 30 days from the date of issue of the Test Report.*

Qualissure Laboratory Services

361, Prantick Pally, 45/361, Bose Pukur Road, Kolkata -700107
Email : qualissure@gmail.com; info@qualissure.com ; Mob.No. 98312 37086 ; 9830093976

TC-6271

DOC NO : QLS/SAMP/08-R/00

TEST REPORT

Name & Address Of the Customer :	Report No.	: QLS/P-86/23-24/C/16
	Date	: 18.09.2023
M/s. Rashmi Green Hydrogen Steel Pvt. Ltd.	Sample No.	: QLS/P-86/23-24/16
Khatranga, Changual, Gopinathpur	Sample Description	: Stack Flue Gas
Kharagpur,	Date of performance	: 14.09.2023-18.09.2023
Paschim Mednipur,	Ref No. Date	: 5400012651, : Dated – 05.08.2023
West Bengal-721301		

Analysis Result

Date & Time of Sampling : 14.09.2023 at 12:30 hrs. Sampling done by : C.Sahoo		Sampling Procedures : EPA/IS	
A : General Information of Stack:			
1	Stack connected to	: Coal Gas Fired Reheating Furnace-3	
2	Emission due to	: Burning of Coal Gas	
3	Material of construction of Stack	: MS	
4	Shape of Stack	: Circular	
5	Whether stack is provided with permanent platform	: Yes	
6	Generation Capacity	: 6 MT/hr.	
B : Physical Characteristic of Stack:			
1	Height of Stack from ground level	: 35.0 m	
2	Diameter of Stack at bottom	: ---	
3	Diameter of Stack at sampling point	: 0.85 m	
4	Height of the sampling point from ground level	: 17.0 m	
5	Area of Stack	: 0.5676 m^2	
C : Analysis/Characteristic of Stack:			
1	Fuel used : Coal Gas	2. Fuel consumption : 2850 Nm^3/hr	
D : Results of Sampling & Analysis of gaseous Emission:		**RESULT**	**METHOD**
1	Temperature of emission (^0C)	: 343	EPA Part 2
2	Barometric pressure (mm of Hg)	: 750	EPA Part 2
3	Velocity of gas (m/sec)	: 9.6	EPA Part 2
4	Quantity of gas flow (Nm^3/hr)	: 9359	EPA Part 2
5	Concentration of Carbon monoxide (%)	: <0.2	IS:13270-1992, Reaf : 2017
6	Concentration of Carbon dioxide (%)	: 7.2	IS:13270-1992, Reaf : 2017
7	Concentration of Sulphur dioxide (mg/Nm^3)	: 4.9	EPA Part-6
8	Concentration of Oxides of Nitrogen (mg/Nm^3)	: 20.2	EPA Part-7
9	Concentration of Particulate Matter (mg/Nm^3)	: 26	EPA Part-5
E : Pollution Control Device :			
Details of pollution control devices attached with the stack		: Nil	
F : Remarks: Sample taken from final exhaust			

Report Prepared By:

for Qualissure Laboratory Services
Reviewed & Authorized By

Benimadhab Gorai, Chemist
(Authorized Signatory)

---- End of the Report----

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Qualissure Laboratory Services

361, Prantick Pally, 45/361, Bose Pukur Road, Kolkata -700107
Email : qualissure@gmail.com; info@qualissure.com ; Mob.No. 9831287086 ; 9830093976

TC-6271

DOC NO : QLS/SAMP/08-B/00

TEST REPORT

Name & Address Of the Customer :		
M/s. Rashmi Green Hydrogen Steel Pvt. Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	Report No.	: QLS/P-86/23-24/C/17
	Date	: 18.09.2023
	Sample No.	: QLS/P-86/23-24/17
	Sample Description	: Stack Flue Gas
	Date of performance	: 14.09.2023-18.09.2023
	Ref No. Date	: 5400012651, : Dated – 05.08.2023

Analysis Result

Date & Time of Sampling : 14.09.2023 at 14:10 hrs. Sampling done by : C.Sahoo		Sampling Procedures : EPA/IS
A : General Information of Stack:		
1 Stack connected to	: Coal Gas Fired Reheating Furnace-1	
2 Emission due to	: Burning of Coal Gas	
3 Material of construction of Stack	: MS	
4 Shape of Stack	: Circular	
5 Whether stack is provided with permanent platform	: Yes	
6 Generation Capacity	: 4 MT/hr.	
B : Physical Characteristic of Stack:		
1 Height of Stack from ground level	: 35.0 m	
2 Diameter of Stack at bottom	: —	
3 Diameter of Stack at sampling point	: 0.85 m	
4 Height of the sampling point from ground level	: 17.0 m	
5 Area of Stack	: 0.5676 m^2	
C : Analysis/Characteristic of Stack:		
1 Fuel used : Coal Gas	2. Fuel consumption : 2450 Nm^3/hr	
D : Results of Sampling & Analysis of gaseous Emission:	**RESULT**	**METHOD**
1 Temperature of emission (°C)	: 333	EPA Part 2
2 Barometric pressure (mm of Hg)	: 750	EPA Part 2
3 Velocity of gas (m/sec)	: 9.23	EPA Part 2
4 Quantity of gas flow (Nm^3/hr)	: 9147	EPA Part 2
5 Concentration of Carbon monoxide (%)	: <0.2	IS:13270-1992, Reaf : 2017
6 Concentration of Carbon dioxide (%)	: 7.6	IS:13270-1992, Reaf : 2017
7 Concentration of Sulphur dioxide (mg/Nm^3)	: 6.1	EPA Part-6
8 Concentration of Oxides of Nitrogen (mg/Nm^3)	: 24.3	EPA Part-7
9 Concentration of Particulate Matter (mg/Nm^3)	: 28	EPA Part-5
E : Pollution Control Device :		
Details of pollution control devices attached with the stack	: Nil	
F : Remarks: Sample taken from final exhaust		

Report Prepared By:

for Qualissure Laboratory Services
Reviewed & Authorized By

Benimadhab Goral, Chemist
(Authorized Signatory)

—— End of the Report——

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Annexure-VII

FORMAT FOR PROVIDING PARTICULARS ON GREEN BELT/PLANTATION UNDER E (P) ACT 1986

1 a)	**Name of the Project :**		M/s Rashmi Green Hydrogen Steel Private Limited- Proposed an Integrated Steel Plant of 3.1 million Ton per annum (Finished Steel) along with 230 MW (80 MW WHRB/TRT based + 150 MW coal based) Captive Power Plant
1 b)	**Environment Clearance Nos. :**		**EC Identification no. EC23A008WB113189 issued vide File No. IA-J-11011/102/2022-IA-II(IND-I) dated 07/03/2023**
2	**Location, Block/ Sub. Divn. / Dist/ State:**		Mouza – Changual (J.L. No-360), Jethia (J.L. No-361),Khatranga(J.L. No-362), Gopinathpur (J.L. No. 359) and Goyalara (J.L. No. 391),P.S. – Kharagpur (Local), Dist. – Paschim Medinipur ,West Bengal
3	**Address for communication :**		9, AJC Bose Road, 1st Floor, Ideal Center Kolkata, West Bengal-700017
4	**Existing vegetation in the area/ region**		Industrial land
	a	Species (trees/shrubs/ grasses/climbers)	Vacant land
	b	Major prevalent species of each type	Not Applicable
5	**Land coverage by the project**		
	a	Total area under the project	112.10 ha (105.22 ha plant area)
	b	Area covered for basic infrastructure (roads/building/factory etc.)	Project is still in construction phase after obtaining valid NOC from WBPCB.
6	**Details about natural vegetation**		Industrial Land
	a	Name and number of tree/ species felled	NA
	b	Name and number of plant species still available in the area	NA
	c	By protecting the area will indigenous stock come up	NA
	d	Extent of greenbelt developed (till September 2023)	20.0 hectares i.e., 19.0% areas of total plant premises
7	**Plantations required to be carried out as per**		
	a	Conditions of Environmental Clearance in ha./ Nos.	36.83 ha (33%)
	b	Conditions for Forest act (c) clearance in ha./ Nos.	Not Applicable
	c	Voluntarily in acres (truck parking area etc.)	1,350 nos. alongside the road corridor.

	d	Voluntarily in no. for green belt development in nearby area	2,00,000 nos. proposed to be planted in 03 years
8	**Details of plantations**		

	A	Plantation details (category wise & methodology used)	**Year of plantation**	**Species planted**	**Nos.**
			April'23 to September'23	Copy attached	Copy attached
	b	Survival of plantation		**FY 2022-2023**	**FY 2023-24 (till September 2023)**
		- Total Seedling/Plantation (No.)		5000	45,000
		- Survival Trees (No) as on date from date of EC		4,400	42,750
		- Survival		88.0%	95.0%
9.	**Future Plan on Green Belt development**			Greenbelt development over an area of 35.10 hectares i.e., 33.40% areas of total plant premises will be done within the given time frame	
10.	**Agency carrying out plantation and maintenance**			Our own horticulture department & third party	

11.	**Financial details (year wise) plantation wise and item wise**	**S. No.**	**Year**	**Fund allocated (₹)**	**Expenditure including voluntary tree plantation cost (₹)**
		1	2022-23	20,00,000	17,50,000

Photographs of the greenbelt developed inside the plant

JAGARIKA NURSERY

Sapling and grafted plants producer & general order supplier

Prop. - Debasis Midya

9775357507 / 8388801497 jagarikanursery@gmail.com

Ref No. OA032023 Date 04.03.2023

To,
Rashmi Green Hydrogen Steel Pvt. Ltd
Khatranga, Kharagpur, Paschim Medinipur,
West Bengal

INVOICE

Name of Plant	No. of Plant	Rate	Amount
Auracaria cookii	100	35	3,500
Cassia Fistula	4,000	20	80,000
Jarul (lagerstamia)	3,000	15	45,000
Polyalthia Langifolia	4,000	20	80,000
Spanish cherry (Bakul)	2,500	25	62,500
Tabutania Rosea	2,500	18	45,000
Tectona Grandis(segun)	5,500	12	66,000
Termanalia Metalica	100	25	2,500
Bowgenbilia (Creeper)	200	20	4,000
Breathing Heart (Creeper)	200	15	3,000
Sky Pine Creeper)	200	15	3,000
TOTAL AMOUNT	**22,300**		**3,94,500**

RML-6., KHARAGPUR
Sl. No. 6191
IN / OUT
Date 04.03.23
Time 5.40pm
Security Sig

Debasis Midya.
JAGARIKA NURSERY
At- Nripenpally
P.O.+Dist-Jhargram
W.B., Pin- 721507

PAN - BOGPM7170C
GSTN - 19BOGPM7170C1ZV

GREEN FORTE ISLAND

Breeder & Supplier of Ill - yielding Plant and Planting Materials
Dubraipur :: Pakuria :: Jhargram :: West Bengal :: 721507
Contact : Arijit Bhattacharya
9800478225 / 8617081069
Email ID - arijitbhattacharya1974@gmail.com

Ref. No: RGHSPL/07082023

Date: 07.08.2023

To,
Rashmi Green Hydrogen Steel Pvt. Ltd., Khatranga, Kharagpur, Paschim Medinipur, West Bengal-721301

INVOICE

Name of Plant	No. of Plant	Rate	Amount
Jam (Syzygium cumini)	500	30	15,000
Champa (Magnolia champaca)	2,500	12	30,000
Neem (Azadirachta indica)	3,000	7	21,000
Gulmohar (Delonix regia)	4,000	10	40,000
Ashoka (Saraca indica)	1,500	15	22,500
Mahua (Madhuca longifolia)	2,500	15	37,500
Tectona Grandis(segun)	2,500	15	37,500
Beal (Aegle marmelos)	500	12	6,000
Jackfruit (Artocarpus heterophyllus)	200	25	5,000
Mango (Mangifera indica)	300	30	9,000
Chatim (Alstonia scholaris)	5,000	7	35,000
Kadam (Neolamrackia cadamba)	5,000	5	25,000
Arjun (Terminalia arjuna)	500	18	9,000
TOTAL AMOUNT	**28,000**		**2,92,500**

RML-6.,KHARAGPUR
Sl No.....6193.....
IN | OUT
Date 07.08.23
Time 5:40PM
Security Sig

Green Forte Island
Arijit Bhattacharya
Director

Annexure-VIII

Government Of West Bengal
Office Of The Director General
West Bengal Fire & Emergency Services
13D, Mirza Ghalib Street, Kolkata - 16

Memo no.:FSR/0125186231500106 Date: 07-09-2023

From:
Director
Fire Prevention Wing,
West Bengal Fire & Emergency Services

To: RASHMI GREEN HYDROGEN STEEL PRIVATE LIMITED
AT MOUZA.-JETHIA VILL.-JETHIA J.L.-361 DAGNO.-36,476,480,482, 489,491,496,506,511..... KHATIAN NO.-424, ... P.O.-CHAKMAKRAMPUR P.S.-KHARAGPUR LOCAL UNDER CHAKMAKRAMPUR GRAM PANCHAYAT DIST.-PASCHIM MEDINIPUR PIN.-721 304

Sub: Fire Safety Recommendation for a proposed construction (Partly existing) of 1 no. G+II storied, 3no's G+I storied RCC roofing building with comprising 8nos. single storied G.I. roofing factory Shed , as per NBC Part IV, in the name of "RASHMI GREEN HYDROGEN STEEL PRIVATE LIMITED", under group of Industrial At Mouza - Jethia, Vill - Jethia J.L. No. -361 Dag No.- 36,476,480,482, 489,491,496,506,511 Khatian No.-424, P.O.- Chakmakrampur P.S.- Kharagpur Local Under Chakmakrampur Gram Panchayat Dist.-Paschim Medinipur, PIN.-721 304.

This is in reference to your application no. 0125186231500106 dated 20-06-2023 regarding the Fire Safety Recommendation for a proposed construction (Partly existing) of 1 no. G+II storied, 3no's G+I storied RCC roofing building with comprising 8nos. single storied G.I. roofing factory Shed , as per NBC Part IV, in the name of "RASHMI GREEN HYDROGEN STEEL PRIVATE LIMITED", under group of Industrial At Mouza - Jethia, Vill - Jethia J.L. No. -361 Dag No.- 36,476,480,482, 489,491,496,506,511 Khatian No.-424, P.O.- Chakmakrampur P.S.- Kharagpur Local Under Chakmakrampur Gram Panchayat Dist.-Paschim Medinipur, PIN.-721 304.

The plan submitted by you was scrutinized and marked as found necessary from Fire Safety point of view. In returning one set of plan with recommendation, this is issuing Fire Safety Recommendation in favor of the aforesaid building subject to the compliance of the following fire safety measure.

Recommendation:

A.CONSTRUCTION :

1.The whole construction of the existing building shall be carried out as per approved plan drawings conforming the relevant building rules of local Gram Panchayat Body.

2.The floor area exceeds 750 m2 shall be suitably compartmented by separation walls up to ceiling level having at least two hours fire resting capacity.

3.Provision of ventilation at the crown of the central core- duct of the building shall be provided.

4. Arrangements shall have to be made for sealing all the vertical & horizontal ducts by the materials of adequate Fire

resisting capacity.
5.Construction and layout of the building shall remain as per the approved plan and shall never be altered any part of the building except marked portion.
6.Material of rapid flame spread categories including untreated wood, fibre board etc., shall not be used. The doors & windows preferably shall be made of metal.

B.OPEN SPACE & APPROACH:
1.The open space surrounding the building shall conform the relevant building rules as well as permit the accessibility and manoeuvrability of Fire appliance with turning facility.
2.The approach roads shall be sufficiently strong to withstand the load of Fire Engine weighting up to 45M.T.
3.The width and height of the access gates into the premises shall not be less than 4.5M and 5M respecting abutting the road.
4.Driveway should be free from any type of obstruction, No parking will be allowed on the driveway.
5.All the Passage Way should be kept clear for free access.

C.STAIRCASE:
1.The staircase of the administrative building shall be enclosed type. Entire construction shall be made of bricks /R.C.C. type having Fire resisting capacity not less than 4 hours.
2.The width of the staircases shall be made as marked in the plan. Corridors and the exit doors shall conforming the relevant building rules with up to date amendment.
3.All the staircase shall be extended up to terrace of the building and shall be negotiable to each other without entering into any room.

D.FIRE FIGHTING WATER:
Underground water reservoir having water capacity at least 3,50,000 litres Capacity exclusively for Fire fighting purpose with replenishing arrangements @ 1000lts/min. preferably from two different sources of water supply shall be provided. The water reservoir shall be kept full at all time.

E.HYDRANT SYSTEM:
1.Provision 150mm. internal diameter pipe line with the Yard Hydrant/ ring main hydrant with adequate no's along with Hose Box and Short Branch shall be installed surrounding the factory in accordance with relevant I.S specification the system shall be so designed that shall be kept charge 2850 Lts./ min at the nearest out let and minimum 2280 lts. /min at the furthest out let in both case the running pressure not be less than 3.5kgs./ sq cm. All other requirements shall conform I.S. 3844-1989.
2.Provision for hose reel hose in conjunction with Wet Riser shall be made at floor level conforming the relevant I.S specification.
3.Adequate numbers Hydrant & Fire Service inlet shall be installed the building and surrounding factory in accordance with relevant I.S. specifications.

F.WATER CURTAIN INSTALLATION:
The automatic Water curtain installation shall be provide in the entire floor areas of the factory as per I.S. 9972. Alarm gang to be incorporated along with the Water curtain system.

G.FIRST AID FIRE FIGHTING SYSTEM:
First Aid Fire fighting arrangement in the style of placing suitable type of portable Fire Extinguishers, Fire Buckets etc. in all floors and vulnerable locations of the premises shall be made in accordance with I.S 15683 with effect from January

2012.

H.FIRE PUMP :

Provision of the fire pump shall have to be made to supply water at the rate - designed pressure and discharge into the water based system, which shall be installed one Main pump, One Jockey Pump & One such pump of same capacities shall always be kept on stand – by preferable of diesel driven type. A separate Fire pump shall preferably be made for the total Water curtain of the factory shed. Provision of jokey pump shall also have to be made to keep the water based system under pressurized condition at all time. The entire pump shall be incorporated with both manual and auto starting facilities. The suction of pump shall preferably of positive or in case negative suction the system shall be wet riser come down comer with suitable terrace pump with over head tank.

I.ELECTRICAL INSTALLATION & DISTRIBUTION:

1.The electrical installation including transformers, Switch Gears, Main & Meters etc. and the distribution system of the premises shall be made satisfying the code of practice for Fire safety in general building as laid down in I.S. specification 1946-1982.

2.The vertical & horizontal electrical ducts shall be scaled at floor level by fire resisting material.

3.The electrical installation shall be adequately protected with CO2/D.C.P. Fire Extinguisher

4.Alternative Power Supply:

Arrangements shall have to be made to supply power with the help of a generator to operate at least the Fire Pump, Pump for deep Tube-well, Fire Alarm System, Fire Lift etc. and also for illuminating the Staircase, corridors etc. and other places of assembly of the building in case of normal power failure.

J.TRANSFORMER:

1.Nitrogen Injection Drain System (NIDS) or High Velocity Water Spray System (HVWSS) shall have to be provided.

2.Entry of Unauthorized person should be restricted inside the transformer area.

3.Dykes to be provided to contained the oil of the transformer in case of lekage.

K.AIR CONDITIONING SYSTEM : (If any)

1.Arrangement shall be made for isolation at the strategic locations by incorporating auto dampers in the Air Conditioning system.

2.The air handling unit's room shall not be used for storage of any combustible materials.

L.DETECTION and ALARM SYSTEM:

1.Manually operated Electrical Fire Alarm system with at least two numbers of break glass type call bones fitted with Hooters connecting with audio – visual panel board shall be made in Control Room. The Control Room shall be located at the entrance of Ground Floor of the building and factory other requirements of the system shall be made conforming I.S. 21

2.Auto fire detection system with the help of heat/smoke detector as per suitability shall be installed in all places of below and preferably above false ceiling of the Building and Factory shed. The system shall also be made in places of the room where valuable articles have been kept. The other requirements of the system shall be made in accordance with I.S.2189-1988.

3.Hooter will be sounded in such a manner so that an operation of a Detector or \manual Call

Point \hooters will sound on the same floor and immediate alternate.

M.LPG STORAGE

1.The construction and layout shall be as per approved plan and shall not be altered in any way. The license premises

shall never be used for any purpose other than storing L.P.G filled cylinder and the storage shed shall be constructed of suitable non-combustible materials as per relevant I.S Specification.

2.The proposed shed to be used for storage of L.P.G Cylinder shall be surrounded by a suitable brick masonry compound wall of 1.8 m. high with 1.2 m. wide gate to prevent unauthorized persons from having access into the Godown and safety zone.

3.The safety distance at all times between any building public road or any adjoining property from the proposed L.P.G Godown shall be maintained as per Gas Cylinder Rule, 2004 (7 meters on all sides here in this case).

4.Antistatic mastic bituminized flooring conforming I.S 8374 of the floor of the L.P.G Godown shall be made.

5.The surrounding area of the L.P.G godown shall be all times be kept clean free from all flammable materials, waste vegetable and rubbish.

6.No fire furnace or other source of heat or naked flame other than flame proof electrical fitting shall be allowed inside the storage godown and within its safety zone.

7.No persons shall smoke in the storage godown or carry matches, mobile phone, fuses or their appliances for producing ignition in the premises conspicuous "NO SMOKING" sign in Hindi, English and local languages shall be pasted or hanged at the prominent places outside of the godown.

8.Gas Detector shall be installed inside the godown to detect the leakage of gas if any before reaching to the ideal air fuel mixture suitable for combustion and explosion.

9.Explosive Certificate shall have to be obtained from the Explosive Department and a copy of the same to be endorsed to this Department in due course of time.

10.There should be no live overhead high tension electric line traversed the premises at any length of time.

11.At least 6 (Six) nos. of ABC Extinguishers – 10 Kg. capacity each, 4 (four) nos. of Water CO2 Extinguisher – 9 ltrs. Capacity each and 6 (six) nos. of Fire Buckets with dry sand shall be installed at the site at suitable location.

12.The Fire Extinguishers shall be tested once in a year.

N.LDO STORAGE

1.Construction and layout shall be as per approved plan and not be altered in any way.

2.Indian Petroleum Act and Indian Explosive Act shall have to be strictly followed.

3.Under no circumstances the storage of Petroleum Class 'C' LDO and others in the tank as per rules and this provision shall be strictly maintain at all time.

4.Boundary wall shall be constructed as per Petroleum Act.

5.All containers and tanks shall be a type approved by the Chief Controller of Explosive, Government of India.

6.Tank loading and unloading platform shall be sufficient strong to withstand the weight of the heavy vehicles.

7.Lightning arrestor shall be installed at the site at suitable location.

8.Adequate numbers of 'NO SMOKING' board to be displayed in Hindi, English and regional language.

9.No naked flame, fire, furnace or other source of heat and hot job/work shall be allowed to carry out in and around the premises.

10.Spillage and overflowing must be avoided at any operation and proper drainage system to be provided.

11.All due precaution must be taken to prevent escape of petroleum solvent into any drain, sewer, river or water source or any public road.

12.Both electrically and manually operated fire alarm system shall be installed inside the premises for alarming purpose in case of any emergency.

13.The electrical installation shall be adequately protected by CO2/D.C.P. fire extinguishers.

O.GENERAL RECOMMENDATIONS:

1.Fire License shall have to be obtained for proposed storing and processing with L.P.G. and other highly combustible articles.

2.Fire Notice for Fire Fighting and evacuation from the building shall be prepared and be displayed at all vulnerable places of the building.

3.Floor numbers and directional sign of escape route shall be displayed prominently.

4.The employees and security staff shall be conversant with installed Fire Fighting equipments of the building and to operate in the event of Fire and Testing.

5.Arrangement shall be made for regular checking, testing and proper maintenance of all the Fire Safety installation and equipments installed in the building to keep them in perfectly good working conditions at all times.

6.Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of building.

7.A crew of trained Firemen under the experienced officer shall be maintained round the clock for safety of the factory and building.

On compliance of all the above Fire and Life safety recommendations, the Director General, West Bengal Fire & Emergency Services shall be approached for necessary inspection and testing of the installation. Fire Safety Certificate in favour of the occupancy shall be issued on being satisfied with the tests and performances of safety aspects of installation of the building.

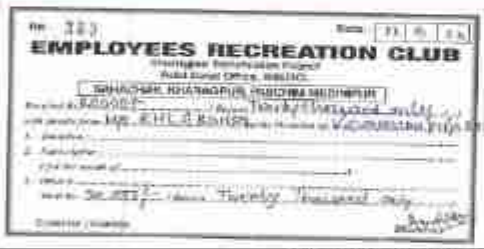
N.B.: Any deviation and changes the nature of use of the building in respect of the approved plan drawing without obtaining prior permission from this office, this recommendation will be treated as cancelled.

Signature Not Verified

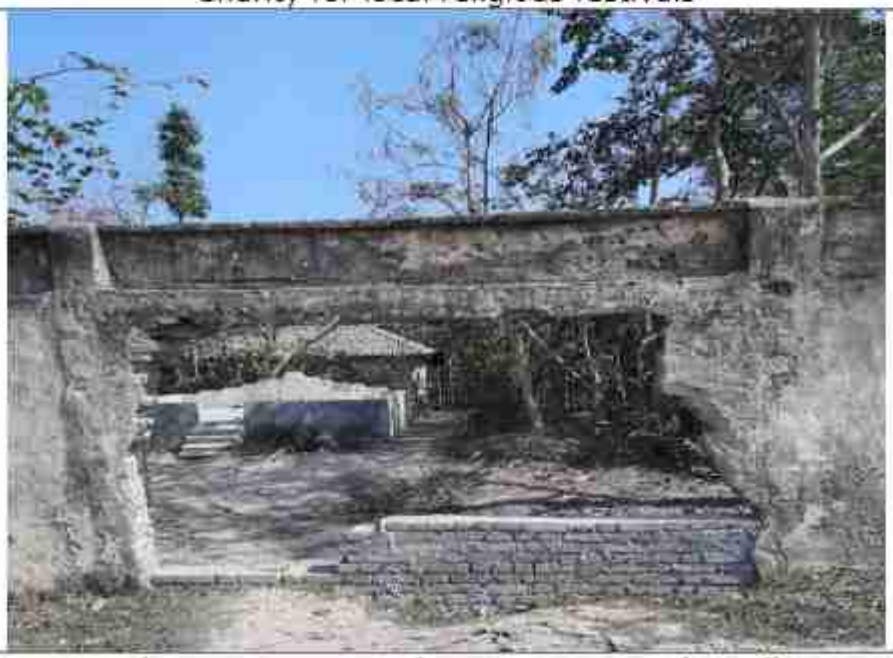
Director
West Bengal Fire & Emergency Services

Photographs of the activities done by M/s Rashmi Green Hydrogen Steel Private Limited under EMP for Social and Infrastructure development

Organizing curriculum activities competition in Khatranga Primary school



Charity for local religious festivals



Temple construction under progress in Jethia Village

Annexure-X

RASHMI GROUP

DIP DIVISION

Rashmi Green Hydrogen Steel Pvt Ltd.

Reg & Corp. Add :,9 AJC BOSE ROAD, KOLKATA-700017,,700017

GOODS & SERVICE ORDER

4700004423

Details of Supplier :		P.O No : 4700004423	
SWAN ENIVRONMENTAL PVT LTD-9003840		P.O Date : 21.11.2023	Amend No. : 0
PLOT NO 922 AND 935, SWAMI AYYAPPA CO-OP SOCIETY MADHAPUR		Plant : RGHSPL-SEAMLESS PLANT	Amend Dt : 21.11.2023
Telangana-500081		Your Ref No. :	RFQ No. :
State Name : Telangana	State Code : 36	Your Ref Date :	RFQ Date :
GSTIN : 36AADCS4126R1ZW	PAN NO :	Supply Basis :	
E-Mail : info@swanenviron.com	Contact Details : 040-40216184 /	Supply Type :	
MSME :			
Contact Person :		Purchaser Name : Gorla Venkata Nageswararao	
Contact No :		Contact No :	
Email ID :		Email : gorla.nageswararao@rashmigroup.com	

Billing To Address	Shipping To Address
Rashmi Green Hydrogen Steel Pvt Ltd.	Rashmi Green Hydrogen
Khatranga,Changual,Gopinathpur,Kharagpur,Paschim Mednipur,West Bengal 721301	Khatranga,Changual,Gopinathpur, Kharagpur,Paschim Mednipu-721301
State Name : West Bengal State Code : 19	State Name : West Bengal State Code : 25
GSTIN : 19AALCR1619N1ZT	GSTIN/Unique ID : 19AALCR1619N1ZT
PAN No. : CIN No.: U27100WB2021PTC246718	PAN No. : AALCR1619N CIN No.: CIN:U27100WB2021PTC2467
Contact Detail:	Contact Detail : 9830302479
Goods Supplier : 9003840 Name : SWAN ENIVRONMENTAL PVT LTD	Invoicing Party : 9003840 Name: SWAN ENIVRONMENTAL PVT LTD
CITY: Telangana STATE: Telangana GSTIN:36AADCS4126R1ZW	CITY: Telangana STATE: Telangana GSTIN:36AADCS4126R1ZW

Dear Sir / Madam,
With reference to your above mentioned offer and subsequent discussion we had with you, we are pleased to place our Purchase Order / Service Order in your favour for supply of following items as per terms and conitions mentioned herein:
We do hereby declare and confirm that we satisfy the definition of "buyer" as provided under section 194Q of the Act and hence, we shall withhold taxes on all purchase of goods in excess of INR 50 lacs made from you during the financial year. You are therefore requested not to levy and collect TCS under section 206C(1H) of the Act on the goods sold to us.

Sr.No.	Material Code HSN/SAC / PR	Item Details	UM	Order Qty	Unit Rate (INR)	Total Value (INR)
1	CG20000429 90271000 1900003568/10	Continuous Ambient PM10 Particulate Matt Item text : Model No: SAM -912 Part No: SAM-912 HSN No: 9027 1000 Make: Swan Technical Services Pvt. Ltd., India Working Principle: Beta ray attenuation method;USEPA& CPCB Approved technology Delv Date : 2023-12-02 DEPT : PROJECT Tax Code : ID-IGST-Input -18% WBS Element : 00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit PC	1.000	4,80,000.00/ PC	4,80,000.00
2	CG20000430 9027 1900003568/20	Continuous Ambient PM2.5 Particulate Mat Item text : Model No: SAM -915 Part No: SAM-915 HSN No: 9027 1000 Make: Swan Technical Services Pvt. Ltd., India USEPA & CPCB Approved technology Delv Date : 2023-12-02 DEPT : PROJECT Tax Code : ID-IGST-Input -18% WBS Element : 00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit PC	1.000	5,10,000.00/ PC	5,10,000.00

Gorla Venkata Nageswar arao Prepared By						For Rashmi Green Hydrogen Steel Pvt Ltd. Authorized Signatory

This is computer-generated document.No signature is required.

RASHMI GROUP

DIP DIVISION

Rashmi Green Hydrogen Steel Pvt Ltd.

Reg & Corp. Add :,9 AJC BOSE ROAD, KOLKATA-700017,,700017

GOODS & SERVICE ORDER

4700004423

3	CG20000431 9027 1900003568/30	Continuous Ambient NO-NO2-NOx Analyser Item text :Model No: SAM-909 Part No: SAM-909 HSN No: 9031.8000 Make: Swan Technical Services Pvt. Ltd., India Working Principle: Chemiluminescence USEPA& CPCB Approved technology Delv Date :2023-12-02 DEPT :PROJECT Tax Code :ID-IGST-Input -18% WBS Element :00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit PC	1.000	4,80,000.00/ PC	4,80,000.00
4	CG20000432 9027 1900003568/40	Continuous Ambient Sulfur dioxide (SO2) Item text :Model No: SAM-906 Part No: SAM-906 HSN No: 9031.8000 Make: Swan Technical Services Pvt. Ltd., India Working Principle: Ultraviolet(UV) fluorescence USEPA& CPCB Approved technology Delv Date :2023-12-02 DEPT :PROJECT Tax Code :ID-IGST-Input -18% WBS Element :00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit PC	1.000	4,80,000.00/ PC	4,80,000.00
5	CG20000433 9027 1900003568/50	Continuous Ambient Carbon monoxide(CO) A Item text :Model No: SAM -903 Part No: SAM-903 HSN No: 9031.8000 Make: Swan Technical Services Pvt. Ltd., India Working Principle: Non-dispersive infrared (NDIR) absorption technology USEPA& CPCB Approved technology Delv Date :2023-12-02 DEPT :PROJECT Tax Code :ID-IGST-Input -18% WBS Element :00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit PC	1.000	4,00,000.00/ PC	4,00,000.00
6	CG20000434 9027 1900003568/60	Multi Gas Calibrator With Zero Air Gene Item text :Model No: SDC-999 Part No: AM-5800 HSN No: 9031.8000 Make: Swan Technical Services Pvt. Ltd., India Calibrator to do calibrator the Analyser for gases & Remote calibration Check as per CPCB Standards. Delv Date :2023-12-02 DEPT :PROJECT Tax Code :ID-IGST-Input -18% WBS Element :00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit PC	1.000	4,00,000.00/ PC	4,00,000.00
7	CG20000435 9027 1900003568/70	Calibration Gas Cylinder for CO Analyser Item text :Model No: -CAAQMS_CO_Gas Part No: -CAAQMS_CO_Gas HSN No: 28042990 Make: Chemtron/Alchemie/Any reputed Cylinders with pressure regulators for CO gas-capacity: 10 liters; Delv Date :2023-12-02 DEPT :PROJECT Tax Code :ID-IGST-Input -18% WBS Element :00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit PC	1.000	25,000.00/PC	25,000.00

Gorla Venkata Nageswar arao Prepared By						For Rashmi Green Hydrogen Steel Pvt Ltd. Authorized Signatory

RASHMI GROUP

DIP DIVISION

Rashmi Green Hydrogen Steel Pvt Ltd.

Reg & Corp. Add :,9 AJC BOSE ROAD, KOLKATA-700017,,700017

GOODS & SERVICE ORDER

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8	CG20000436 9027 1900003568/80	Gas Sampling System Item text :Model No: SAS 999 Part No: SAS 999 HSN No: 90318000 Make: Local 10 Ports manifold, Suction pump, Dryer unit for moisture removal, Sampling Pipe, Sampling head , Flange and gland for the sampling system Delv Date :2023-12-02 DEPT :PROJECT Tax Code :ID-IGST-Input -18% WBS Element :00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit PC	1.000	30,000.00/PC	30,000.00
9	CG20000437 9027 1900003568/90	19" Rack for Analyzers with necessary a Item text :Model No: Rack-19-2 Part No: Rack-19-2 HSN No: 84715000 Make: Local 1 set = 2 Racks for Particulates, Gas analyzers, Calibrator , Necessary accessories, etc., Delv Date :2023-12-02 DEPT :PROJECT Tax Code :ID-IGST-Input -18% WBS Element :00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit PC	1.000	35,000.00/PC	35,000.00
10	CG20000438 9027 1900003568/100	Weather Monitoring Station Item text :Model No: SWM-927 Part No: SWM-927 HSN No: 90158020 Make: Swan Technical Services Pvt. Ltd., India Ultra Sonic Wind Speed, Ultra Sonic Wind Direction, Relative Humidity , Temperature, Rainfall and Solar Radiation, Meteorological Mast for fixing the weather station Delv Date :2023-12-02 DEPT :PROJECT Tax Code :ID-IGST-Input -18% WBS Element :00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit PC	1.000	2,00,000.00/PC	2,00,000.00
11	CG20000439 9027 1900003568/110	Display Board 6X4 Multi color Item text :Model No: Display Board Part No: - HSN No: 85312000 Make: Swan Technical Services Pvt. Ltd., India Display Board: Four Line LED Display Board, Multi color with Ethernet communication output, IP-65 Protection Dimensions: 6'(L) X 4' (H), AC-230V Supply. Delv Date :2023-12-02 DEPT :PROJECT Tax Code :ID-IGST-Input -18% WBS Element :00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit PC	1.000	1,95,000.00/PC	1,95,000.00
12	CG20000440 9027 1900003568/120	CAAQMS datalogging & uploading software Item text :Model No: CAAQMS CPCB & SPCB Part No: - HSN No: 84715000 Make: GLens, India Data logging and Uploading software to CPCB , SPCB & Client for one year free. Includes: Necessary accessories required for installation & uploading	Base Unit PC	1.000	75,000.00/PC	75,000.00

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RASHMI GROUP

DIP DIVISION

Rashmi Green Hydrogen Steel Pvt Ltd.

Reg & Corp. Add :,9 AJC BOSE ROAD, KOLKATA-700017,,700017

GOODS & SERVICE ORDER

4700004423

		Delv Date :2023-12-02 DEPT :PROJECT Tax Code :ID-IGST-Input -18% WBS Element :00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT					
13	CG20000154 90271000 1900003568/130	Calibration Gas Cylinder for SO2 Item text :Calibration Gas Cylinder for SO2, Make - Chemtron/ Alchemie Delv Date :2023-12-02 DEPT :PROJECT Tax Code :ID-IGST-Input -18% WBS Element :00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit NOS	1.000	25,000.00/ NOS	25,000.00
14	CG20000155 90271000 1900003568/140	Calibration Gas Cylinder for NO Item text :Calibration Gas Cylinder for NO, Make - Chemtron/ Alchemie Delv Date :2023-12-02 DEPT :PROJECT Tax Code :ID-IGST-Input -18% WBS Element :00001187:RGHSPL- ISP-SEAMLESS HM- MECH MT	Base Unit NOS	1.000	25,000.00/ NOS	25,000.00

In Words - THIRTY NINE LAKH SIXTY FOUR THOUSAND EIGHT HUNDRED ONLY.

Gross Value	3,360,000.00
IGST	6,04,800
Net Order Amount	3,964,800.00

HSN/SAC	Taxable Value	CGST		SGST/UGST		IGST		CESS		CST		TCS	
		Rate	Amt.	Rate	Amt.	Rate	Amt.	Rate	Amt.	Rate	Amt.	Rate	Amt.
90271000	4,80,000.00					18	86,400.00		0.00				
90271000	25,000.00					18	4,500.00		0.00				
90271000	25,000.00					18	4,500.00		0.00				
9027	5,10,000.00					18	91,800.00		0.00				
9027	4,80,000.00					18	86,400.00		0.00				
9027	4,80,000.00					18	86,400.00		0.00				
9027	4,00,000.00					18	72,000.00		0.00				
9027	4,00,000.00					18	72,000.00		0.00				
9027	2,00,000.00					18	36,000.00		0.00				
9027	1,95,000.00					18	35,100.00		0.00				
9027	75,000.00					18	13,500.00		0.00				
9027	35,000.00					18	6,300.00		0.00				
9027	30,000.00					18	5,400.00		0.00				
9027	25,000.00					18	4,500.00		0.00				
Total	3,360,000.00						6,04,800.00						

Total Tax value (In words) SIX LAKH FOUR THOUSAND EIGHT HUNDRED RUPEES

Gorla Venkata Nageswar arao Prepared By						For Rashmi Green Hydrogen Steel Pvt Ltd. Authorized Signatory

RASHMI GROUP

Rashmi Green Hydrogen Steel Pvt Ltd.

Reg & Corp. Add :,9 AJC BOSE ROAD, KOLKATA-700017.,700017

DIP DIVISION

GOODS & SERVICE ORDER

4700004423

* Please quote PURCHASE ORDER reference in Invoice and all correspondence
* Please return the accepted copy of this PO duly signed and stamped in each pages as a token of Receipt, if no written order acceptance is given to us within 7 days , we shall deem that the P.O has been accepted by you.
* The supplier shall comply with provision of the E.H.S (Environment Health & Safety) related documents during the supply of material as per Govt.guidelines if applicable.
* Please submit all your despatch documents , i.e "Bill/Challan/GST Invoice etc along with supply of material."

Commercial Terms and Conditions :-

	CIP - RASHMI GREEN HYDROGEN STEEL PVT. LTD - Kharagpur. Packing & Forwarding, Transportation & Transit Insurence is included in above Contract price.
Price Basis	:Commissioning TO & FRO, lodging,boarding for commissioning team also included above contract price.
Tax	:Above Price is inclusive of all taxes, duties, levies and other charges as applicable except Goods and Service Tax (GST) , which shall be payable extra at actual against submission of GST invoices & Submission of documents.
Delivery Schedule	:Material to be dispatched with in 6 weeks from the date of receipt of PO.On recipr of material supplier to depute commisisoning team at site for installation. DELIVERY ADDRESS :- RASHMI GREENHYDROGEN STEELPRIVATE LIMITED,KHATRANGA,CHANGUAL, GOPINATHPUR AND JETHIA A.D.S.R.KHARAGPUR,PASCHIM MEDINIPUR 721301,WEST BENGAL.(RML-6). CONTACTPERSON: MR.RAJ KUMAR.STORES MOB:+91 6291652548."
Mode of Payment	:NEFT/Cheque/TT.
Mode of Transport	:By Road. Road worthy.
Packing & Forwarding	The cost of packing and forwarding is included in the price mentioned above contract price. :All the equipment along with all accessories, shall be duly packed in Road worthy packing wherever required and/or customary, so as to ensure that the equipment shall be delivered at the Site in good conditions. Packing and forwarding shall be in accordance with standard practices prevailing. Supplier shall take suitable precautions and measures to protect goods against dampness, moisture, rain, rust, shock, corrosion and deformation.
Terms of Payment	:80% against delivery,10% against PBG,& 10% against completion of commissioning or with in 30 days from the date of invoice which ever is earlier.PBG (in Rashmi Format),Valid 12 months from the date of commissioning. BG shall have 3 months Clime period in addition to the Validity date.
Guarantee/Warranty	:The material shall be under warranty against any manufacturing defects due to faulty design, material or bad workmanship or any other reason for 12 months from the date of commissioning or 18 months from the date of supply whichever is earlier.
Commissioning	Commissioning supervision shall be in Supplier Scope and price is inclusive of above contract Price. Commissioning team TO & FRO, lodging & Boarding charges shall be inclusive in supplier scope. Seller will depute trained experienced Engineers for commissioning of the equipment on receipt of the material at site & complete the same with in 15 days. INSPECTION & TESTING Material will be inspected by our inspectors / Purchaser's inspection Agency at your works in stages as per the inspection schedule. Seller shall submit your internal (Factory) inspection report and Test certificate for physical and chemical properties shall be submitted prior to inspection calls if applicable. FORCE MAJEURE :1.If either of the Contract parties is prevented from executing the Contract by Force Majeure such as war, riot, coup, embargo, typhoon, tornado, snowstorm, flood, earthquake and other events occurring without fault of such party and for reasons beyond the reasonable control of such party, the time for implementing the Contract shall be extended by a period equivalent to the effect of occurrence. The other party shall not claim that the prevented party has defaulted in performance of its obligations under the Contract. 2.The prevented party shall notify the other party by facsimile or telex email within the shortest possible time of occurrences of force Majeure and send a document certifying the detailed occurrences to the other party by registered air mail within 7 (seven) days thereafter. The competent authorities concerned in the area where the Force Majeure has occurred should acknowledge it. When the document is submitted by the Seller, the China Council for the Promotion of International Trade shall issue the document. When the Buyer submits the document, Reputable Authorized Organization shall issue the document like Port authority, Chamber of Commerce etc. 3.When the Force Majeure is over, the prevented party shall immediately notify the other party by facsimile or email and confirm it by registered air mail afterwards. Both parties shall resume performance of the Contract immediately. Power shortage/strike of your works or seller's works should not be included on the force major clause.

Gorla Venkata Nageswar arao Prepared By						For Rashmi Green Hydrogen Steel Pvt Ltd. Authorized Signatory

Transportation & Insurance	:Supplier Scope & Included in above contract scope.

Terms Of Payment :-

Gorla Venkata Nageswar arao Prepared By						For Rashmi Green Hydrogen Steel Pvt Ltd. Authorized Signatory

RASHMI GROUP

DIP DIVISION

Rashmi Green Hydrogen Steel Pvt Ltd.

Reg & Corp. Add :,9 AJC BOSE ROAD, KOLKATA-700017,,700017

GOODS & SERVICE ORDER

4700004423

ANNEXURE - I

Other Terms and Conditions:

* Firm Price : The contract price shall remain firm and binding during the tenure of the contract and shall not be subject to any escalation whatsoever not with-standing any change in the cost of materials/ labour/ transportation cost / otherwise which may take place as per the scope of supply.

* Terms of Delivery: Timely delivery of the material shall be the essence of the contract and any failure on that score will entail the Buyer to Purhase the material from the market at the prevailing market rate at the cost and risk of the Seller without any prejudice to the right of the Buyer to the cancel of the order. On request of the "PURCHASER", Seller will arrange for necessary insurance of the materials.Any loss or any breakage or damage to the material during any damamge during transit due to any cause whatsoever shall be bourn by the Seller.

* Inspection : Inspection from "PURCHASER" shall be held at their own factory and their report shall be final and binding on both the parties and / or In case of forging, casting etc. if any defect is detected during the machining operations such casting/ forging will be rejected on seller's account and / or In case inspection is to be carried out at your site, then at least 10 days advance information to be given to us for sending our inspector(s). Inspected material duly approved by our inspector may be dispatched along with "PURCHASER" inspection certificate or joint inspection report, as the case may be and / or In case any drawing/ sketch is involved in the supply, you should be in position to provide the same to our inspector at the time of inspection for the verification and / or In case any specific test report by any institute/ laboratory is required, same shall accompany the dispatch document, failing which the material will be liable for rejection at our end and / or You shall carry out internal inspection prior to being offered for inspection by "PURCHASER".Records of internal inspection & test certificates shall be submitted to "PURCHASER" based on your internal inspection, we may carry out the inspection at your works or issue you a inspection waiver.

* Rejection on Quality / Deduction for Inferior Quality : In case of rejection due to poor quality and / or poor workmanship and / or damages noticed on our inspection at site, the same has to be collected back by supplier at his cost. Otherwise, the charges for returning the rejected quantity shall be deducted from supplier's Bills and/ or In case of non-confirmity to the quality and qty as per this P.O or received in damaged or broken condition or otherwise not satisfactory, owing to any reason thereof, the "PURCHASER" shall be the sole judge and entitled to reject the material, cancel the contract and buy its requirement in the open market on seller's risk & cost. "PURCHASER" shall recover the loss, if any, from the Seller reserving always the right to forfeit the deposit, (if any) placed by the seller for the due fulfillment of the contract. The Seller will make arrangements to remove the rejected materials, otherwise rejected materials will be lying entirely at Seller's risk and responsibility. Any demurrage, wharfage or similar charges which "PURCHASER" have to undergo on account of the Seller's failure to book the goods in accordance with the order or due to late delivery of the L.R. shall be borne by the Seller and / or In case of any deviation in quality of materials supplied, prorata deduction shall be made from supplier's bill, considering the percentage of deviation.

* L.D. Clause for delayed Delivery : In case of delay in delivery, for reasons solely attributable to supplier, supplier will pay liquidated damages @ 0.5% total value of this contract, per week of delay, however not exceeding 5% of the total supply order value.

* Non Performance : If the supplier fails to deliver the material as per delivery period of this P.O., leading to delay in execution of the company's work, "PURCHASER" reserves the right to procure the items from else where at supplier's cost to complete the company's work, such additional cost to be borne by the supplier, limiting to 5% of the total P.O. value.

* Dispute, Arbitration & Jurisdiction : All disputes which can not be settled amicable under or in relation to the contract shall be resolve by reference to two Arbitrators under provision of Indian Arbitration and Conciliation Act 1996. Execution of the contract shall be governed by Indian Lawsand regulation and subjected to jurisdiction of Law at Kolkata.

* In Case of Dispute : Related to this contract none of parties shall allow the effect subsequences or previous contract or any contract with this company and any group of company in between party any matters.

* Alternation / Modification / Amendment : Any alternation, modification, extension, deletion, amendment or any other change to this Purchase order will not be valid, unless confirmed by us in writing. Unless permitted by us in writing you will not divulge, publish or cause to be publish by any means whatsoever, the details concerning of this order or goods covered thereby.

"As per our records you are not MSME. In case you are MSME kindly inform us on urgent and ongoing basis.

• "THE SELLER AGREES TO DO ALL THINGS NOT LIMITED TO PROVIDING GST INVOICES OR OTHER DOCUMENTATION AS PER GST LAW RELATING TO THE ABOVE SUPPLY, PAYMENT OF TAXES, TIMELY FILING OF VALID STATUTORY RETURNS FOR THE TAX PERIOD ON THE GOODS AND SERVICE TAX PORTAL ETC. THAT MAY BE NECESSARY TO ENABLE THE BUYER TO CLAIM INPUT TAX CREDIT IN RELATION TO ANY GST PAYABLE UNDER THIS AGREEMENT OR IN RESPECT OF ANY SUPPLY UNDER THIS AGREEMENT. IN CASE OF VIOLATION / BREACH / DELAY / NON-COMPLIANCE OF ANY OF THE GST PROVISIONS BY THE SELLER WHICH WILL HAVE AN IMPACT ON THE BENEFITS ACCRUING TO THE BUYER UNDER GST, THEN IN SUCH CASE THE SELLER SHALL INDEMNIFY THE BUYER AND THE BUYER WILL HAVE ALL THE RIGHT TO RECOVER SUCH AMOUNT OF BENEFITS FROM THE SELLER ALONG WITH APPLICABLE INTEREST AND PENALTY."

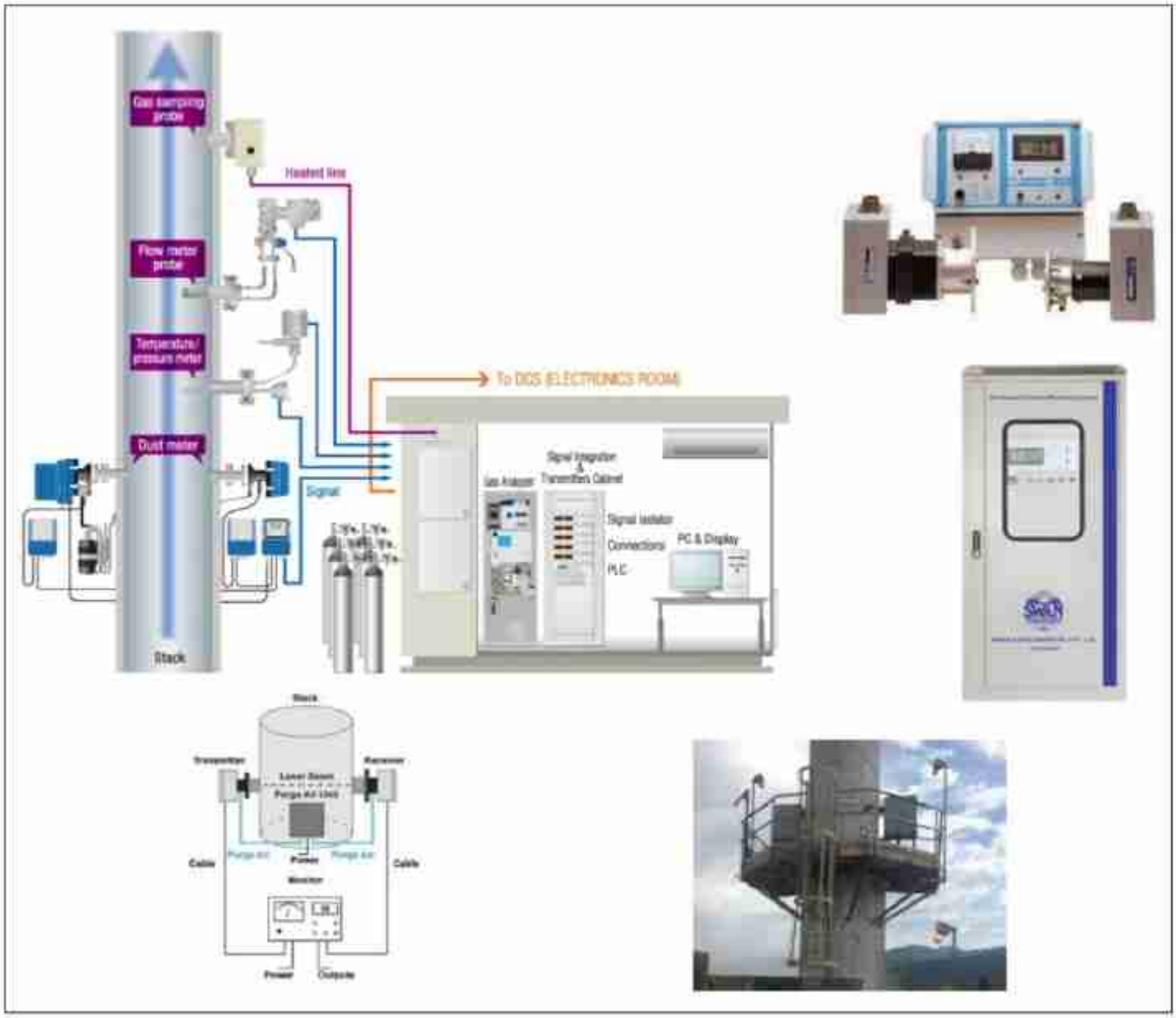
For Order related issues,need any support or feedback, You can drop us an e-mail at @rashmigroup.com or call on +91

Gorla Venkata Nageswar arao Prepared By						For Rashmi Green Hydrogen Steel Pvt Ltd. Authorized Signatory

PROPOSAL FOR

ONLINE STACK CONTINUOUS EMISSION MONITORING SYSTEM

(CEMS)



SWAN ENVIRONMENTAL PVT.LTD.

(An ISO 9001:2015 Certified Company)
2nd Floor, Swan Aalayaa
Plot No: 922 & 935, Swami Ayyappa Co-op Society, Madhapur, Hyderabad, Telangana - 500081
Mob: 9642225204 ; Tel: (040) 40216184/85 ; Fax: (040) 40216183
Email: info@swanenviron.com ; Website: www.swanenviron.com

Quotation

SWAN ENVIRONMENTAL PVT. LTD.
An ISO 9001 : 2015 Certified Company
CIN: U92110TG1988PTC008656
Plot No: 922 & 935, Swami Ayyappa Co-Op Society, Madhapur,
Hyderabad - 500081, Telangana, India.
Ph: +91 - 40 - 4021 6184 / 85, Fax : 40216183.
Email : info@swanenviron.com ; Website : www.swanenviron.com

To,

M/s. Rashmi Green Hydrogen Steel Private limited

Department : Environmental

AJC Bose road centre,1st floor ,, Kolkata, West

Bengal, India, 70017

Kind Attention Mr. Sanjay Kumar Jain

Designation : Executive Director

Mobile : 6260572916

Email : ed@rashmigroup.com

Quotation No PRO003666

Date 02.08.2023

Sub : Quote for Stack Emission Monitoring System
Reference : Discussion had with Mr. Pratap Mandal

Dear Sir,

We take this opportunity to introduce ourselves, **SWAN** is incorporated in 1988 by a group of qualified and experienced professionals with a core objective to be one of key solution provider in the field of **S**oil, **W**ater, **A**ir & **N**oise quality monitoring in country to protect the Environment. We strongly believe **SWAN** has been created a position in market as a leader in India since more than 3- decades in various industrial sectors, government organization, Research and development, renowned institutions for providing world class environmental monitoring solutions. During the course of time SWAN has formed four different group companies with a special attention to serve the Industries/Institutions more efficiently and focused manner

Swan Technical Services Pvt Ltd. Complete Continues Ambient Air Quality Monitoring Systems(CAAQMS)

Swan Environmental Pvt Ltd. Complete Continues Emission Monitoring Systems (CEMS) & Continues Effluent Quality Monitoring Systems (CEQMS), other laboratory, Hand held instrument for complete environmental monitoring

Swan Scientific LLP Complete Scientific Laboratory Equipment's

Swan Biotech Pvt Ltd. Complete Pharma QA & QC Equipment's

We strongly position our strength and credential in country with a full capacity of turnkey solution for water quality , water level, system integration in continuous monitoring station that include supply o more than 600+nos of **CAAQMS** (Continuous Ambient Air Quality Monitoring Stations), 300+nos of **EQMS** (Effluent Quality Monitoring Systems) and 350+nos of **CEMS** (Continuous Emission Monitoring Systems). Our systems are in use in all categories of industries and we have a long list of highly satisfied customers. We offer services that cover engineering, supply, installation, commissioning, datalogging and uploading of data to PCB, customer servers and providing AMC's / CMC's / O&M. We have awarded with customer satisfaction performance reports and certificates

We have been associated with several world class companies in the field of environmental monitoring solution since past more than 3 decades

Sr No	Description	Qty.	Unit	Sales Price (₹)	Total (₹)
1	**Online Laser Stack Opacity / Dust Monitor** Model No: LM3189 Part No: LM3189 HSN No: 90271000 Make: Swan Environmental Pvt Ltd., India Range: 0-500mg/m3 Principle: Double Pass Transmissometer Principle Includes: * Transreceiver and Monitor Unit. * Optimal for stacks from 0.5m to 10m. (with optional 100mm lens up to 40m) * Reflector & Controller * Transmitter & Receiver are IP66 & Monitor Unit IP65 * Output: 0 ... 1 V DC and 4 ... 20 mA current outputs. * RS485 Modbus Output (Optional). * TUV Certified	1	No.	4,25,000.00	4,25,000.00
2	**Online Stack Flue Gas Analyser** Model No: CEMS Gasboard 3000 Plus Part No: Gasboard 3000 Plus HSN No: 90271000 Make: Swan Environmental Pvt Ltd., India Online Infrared flue gas analyzer Extractive type as per CPCB guide lines Principle: CO, CO2- Non Dispersive Infra-Red (NDIR) O2- Electrochemical Measuring Range: CO: 0-10000ppm, CO2-0-25% & O2-25% Sampling flow rate fluctuations had no effect on the Measurement results. Built-in zero pumps to achieve zeroing in the air. Accurate measurement of low concentration gas. Large LCD (320 X 240) display and easy operation. RS-232 and 4-20mA output.	1	No.	5,20,000.00	5,20,000.00
3	**Online Stack Temperature, Pressure & Flow-rate Integrated Monitor** Model No: PT-500H Part No: - HSN No: 9027.1000 Make: Swan Environmental Pvt Ltd., India Measuring parameters: Flow, Temperature, and Pressure. working Principle: Pitot(for flow) Range:0~15m/s Accuracy:±5%F.S. Outputsignal:4-20mA,RS232 Pressure limit of differential pressure transmitter:4.0Mpa	1	No.	2,70,000.00	2,70,000.00

Sr No	Description	Qty.	Unit	Sales Price (₹)	Total (₹)
	Pitotmaterial:316SS Rangeoftemperaturetransmitter:0~300°C Work temperature: -40~70°C				
4	**Heated Sample Line From Stack Sampling Probe To Analyzer** Model No: CEMS Part No: - HSN No: 90279090 Make: Swan Environmental Pvt Ltd., India Heated Sample Line From Stack Sampling Probe To Analyzer	35	Meter	3,000.00	1,05,000.00
5	**Heated Gas Sample probe** Model No: CEMS Part No: - HSN No: 9027 9090 Make: Local To take the Sample from the Stack	1	No.	65,000.00	65,000.00
6	**Sample Conditioning System with sample Drawing pump** Model No: CEMS Part No: - HSN No: 76130019 Make: Swan Environmental Pvt Ltd., India * Auto purge system * 19" Rack panel with necessary accessories required for installation in rack * Remote Calibration checks as per CPCB Guidelines. * A/D module for PC interface with necessary accessories required for communication to PC & data transmission	1	No.	4,00,000.00	4,00,000.00
7	**Calibration Gas Cylinder for CO** Model No: - Part No: - HSN No: 28042990 Make: Chemtron/Alchemie/Any reputed Cylinders with pressure regulators for CO gas-capacity: 10 liters;	1	No.	40,000.00	40,000.00
8	**CEMS Data logging & Uploading to CPCB & SPCB** Model No: CEMS CPCB & SPCB Part No: - HSN No: 84715000 Make: GLens, India Data logging and Uploading software to CPCB , SPCB & Client for one year free. Includes: Necessary accessories required for installation & uploading	1	No.	1,50,000.00	1,50,000.00

Sr No	Description	Qty.	Unit	Sales Price (₹)	Total (₹)
9	**Display Board 6x4 Multi Colour** Model No: Display Board Part No: - HSN No: 85312000 Make: Swan Technical Services Pvt. Ltd., India Display Board: Four Line LED Display Board, Multi color with Ethernet communication output, IP-65 Protection Dimensions: 6'(L) X 4' (H), AC-230V Supply.	1	No.	4,00,000.00	4,00,000.00
10	**Shelter for CEMS analyzers** Model No: CEMS Part No: - HSN No: - Make: Swan Environmental Pvt Ltd., India Shelter Dimensions: 2mtr (W) x 2mtr (L) x 2.4 meter (H) includes of Computer table, chair and wooden rack for storage of files,, Split Air Conditioners 1 ton, 3 star, 1set=2 no's, auto timer for AC control to switch over the AC each after 4 hours. MCB, Cable, Switches, necessary accessories required for installation.	1	No.	5,00,000.00	5,00,000.00
11	**5KVA Online Uninterrupted Power Supply (UPS)** Model No: 5KVA Part No: - HSN No: 8504.4090 Make: Emerson/DB/ Any reputed Brand UPS 5KVA (Uninterruptible Power Supply) with 30minutes Backup	1	No.	1,50,000.00	1,50,000.00
			Total (₹)		**30,25,000.00**

Total in Words (₹) : Thirty Lakh Twenty-five Thousand Only

Utilities and other support, customer is requested to extend:
1 Single Phase power supply 230 VAC, 50 Hz 1. at 25 amps to be provided for the system including heat tracing.
2. UPS of 3 KVA rating with at least one hour back up to be provided to power the system. The capacity of the UPS, that is 3 KVA can power desk top PC. Power for heat tracing will not be derived from UPS.
3. Earth pit(1 for UPS, 1 for Raw Power & another for lighting arrestor) and lighting arrestor to be provided at the system.
4. Air conditioned room to be provided to accommodate the system. if required Swan will give you the diagram
5. Desktop PC to be provided by customer.
6. Internet broad band cable to be provided for the system to transfer the data of CEMS to PCBs.
7. All cables, cable trays, conduits etc., including laying are in customer's scope.
8. If required extra Heat Tracing cable is required, the same will be supplied at additional cost.

TERMS & CONDITIONS FOR INDIAN RUPEES

1) Prices : FOR, Hyderabad
2) Packing & : Extra at actuals

	Forwarding		
3)	Freight & Insurance	:	Extra at actuals else you can assign your transporter we will hand over the Material to the transporter
4)	GST	:	18% Extra on quoted prices or as per prevailing rates at the time of billing
5)	Payment	:	40% advance along with purchase order 50% against proof of dispatch And a balance 10% after installation and commissioning or from 30 days of dispatch, whichever is earlier.
6)	Delivery	:	12-14 weeks from the date of Order Acknowledgement
7)	Validity of the offer	:	30 Days from the quote dates.
8)	Warranty	:	12 months for the instrument from the date of Invoice.
9)	CAMC	:	Does not cover any damage occurred during natural disasters, High power Fluctuation, Physical damages, etc.
10)	Installation & Commissioning	:	Free of Cost by Swan Team for 4 days.
11)	Order Placement	:	In the name of Swan Environmental Pvt. Ltd, Hyderabad
12)	Company Details	:	PAN : AADCS4126R, GST : 36AADCS4126R1ZW
13)	Post order	:	Our engineer will visit the site inspect the same & give you the necessary Utilities required for installation based on the site condition.
14)	Force majeure	:	No responsible for delay

Should you need any further information please do contact us.

Thanking you and looking for your favorable response.

Yours sincerely,
For Swan Environmental Pvt. Ltd.

Girish Vemulapalli
SR Manager
Email: girish@swanenviron.com
Mobile No. : 9642225237

This is software generated quotation.

Environnement SA India Pvt Ltd

SUPPLY, INSTALLATION & COMMISSIONING OF CONTINUOUS AMBIENT AIR QUALITY MONITORING SYSTEM (CAAQMS)

TECHNO COMMERCIAL OFFER

TO,

M/S. RASHMI GREEN HYDROGEN STEEL PRIVATE LIMITED
9, AJC BOSE ROAD, 1ST FLOOR, IDEAL CENTRE,
KOLKATA - 700017

Quotation No: EIKO/OFF23-65 Date: 12th October 2023

envea™
Environnement SA India Pvt Ltd

EIKO/OFF23-0065 **Date: 12th October 2023**

To,

M/s. Rashmi Green Hydrogen Steel Private Limited
9, AJC Bose Road, 1st Floor, Ideal Centre,
Kolkata - 700017

Kind Attn.: Mr. Sanjay Kumar Jain – Executive Director

Sub.: Techno Commercial Offer for 1 No. Supply, Installation & Commissioning of Continuous Ambient Air Quality Monitoring System.

Dear Sir,

With reference to your requirement of **Supply, Installation & Commissioning of Continuous Ambient Air Quality Monitoring System**, please find our enclosed herewith our offer for the same.

We hope below offer is in line with your requirement,

If you need further information/ clarifications, please do not hesitate to contact us.

Thanking & assuring you of our best services always.

Yours Sincerely,

For Envea India Pvt. Ltd.

Suvam Mazumder
Sr. Manager - Sales

envea™
Environnement SA India Pvt Ltd

EIKO/OFF23-0065 **Date: 12th October 2023**

To,

M/s. Rashmi Green Hydrogen Steel Private Limited
9, AJC Bose Road, 1st Floor, Ideal Centre,
Kolkata - 700017

Kind Attn.: Mr. Sanjay Kumar Jain – Executive Director

Sub.: Techno Commercial Offer for 1 No. Supply, Installation & Commissioning of Continuous Ambient Air Quality Monitoring System.

TECHNO COMMERCIAL OFFER

Sr. No.	Description	Qty.	Unit Price In FOR - Rs.	Total Price In FOR – Rs.
	Continuous Ambient Air Quality Monitoring System consisting of the following:			
1.0	**Sulphur Dioxide (SO_2) Analyzer** based on UV - Fluorescence Principle **Model AF 22e** suitable for 230 V, 50 Hz. power supply, built-in solenoid valve for manual/ auto calibration, built-in zero air scrubber for zero calibration, Colour Touchscreen display, Ethernet TCP/IP Port & USB Port for communication with Data Acquisition System. **(US –EPA Approval No. EQSA-0802-149)**	1 No.	Rs. 670,000/-	Rs. 670,000/-
2.0	**Oxide of Nitrogen (NO_X)** based on Chemiluminescence principle **Model AC 32e** suitable for 230 V, 50 Hz. power supply, built-in solenoid valve for manual/ auto calibration, Colour Touchscreen display, Ethernet TCP/IP Port & USB Port for communication with Data Acquisition System. **(US – EPA Approval No. RFNA-0202-146)**	1 No.	Rs. 720,000/-	Rs. 720,000/-

Sr. No.	Description	Qty.	Unit Price In FOR - Rs.	Total Price In FOR – Rs.
3.0	**PM_{10} Analyser** based on **Beta Ray Attenuation** principle, **Make : ENVEA, Model : MP101M LCD** suitable for 230V AC, 50 Hz. Power supply with C-14 Radioactive source, Pump, $PM_{2.5}$ Inlet, Standard foil for calibration.	1 No.	Rs. 14,00,000/-	Rs. 14,00,000/-
3.1	**PM 2.5 data will derived by using OPM Module with existing PM10 Analyzer** **(US-EPA Approval No. EQPM-0404-151) (Technical details enclosed)** **HSN/SAC No. 90271000**			
4.0	**CO Analyser** based on **Non Dispersive IR Principle with Gas Filter Co-relation Model CO12e** suitable for 230 V, 50 Hz. power supply, built-in solenoid valve for manual/ auto calibration, built-in zero air scrubber for zero calibration& RS 232 port for Serial communication with Data Acquisition System **(US EPA Approval No. RFCA-0206-147)**	1 No.	Rs. 600,000/-	Rs. 600,000/-
5.0	**Multipoint, Multi-Gas Calibrator, Model MGC 101** suitable for 230V AC, 50 Hz. with the following: • Mass Flow Controller based for Dilution air & Span Gas • Inlet ports for external span gases • RS 232 interface • In built Zero air generator	1 No.	Rs. 500,000/-	Rs. 500,000/-
6.0	**Calibration Gas Cylinder made of Aluminium** with SS regulator & valve (1 Cylinder for each Gas) for following Gases: SO_2 NO **CO**	 1 No. 1 No. 1 No.	 Rs. 20,000/- Rs. 20,000/- Rs. 20,000/-	 Rs. 20,000/- Rs. 20,000/- Rs. 20,000/-
7.0	**Gas Sampling System & Hood** Gas Sampling system consisting of SS gas sample inlet, peltier based moisture removal facility, manifold & tubings to the analyzers.	1 No.	Rs. 30,000/-	Rs. 30,000/-

Sr. No.	Description	Qty.	Unit Price In FOR - Rs.	Total Price In FOR – Rs.
8.0	**Standard 19" Rack Cabinet (Double Bay Rack)** with Telescopic slides, Overload protection, Power Distribution box, Cooling fans, Dust filters & pneumatic plumbing to accommodate Analyzer, Calibrator & Accessories	1 No.	Rs. 70,000/-	Rs. 70,000/-
9.0	**Local Data Logger** - PC based Data Acquisition System with **License Software** suitable for Storing, Logging, Reporting, Printing data from above offered Analysers. PC with specifications as under: Pentium Dual Core 2 Processor, 2 GB RAM, 250 GB HDD, CD/DVD Combo Drive, 19" TFT Monitor, 2 serial & 1 parallel ports, Standard WINDOWS Operating System, standard keyboard, mouse with pad.	1 No.	Rs. 300,000/-	Rs. 300,000/-
10.0	**Weather Monitoring Station** consisting of the following Parameters : a)Combined Wind Speed & Direction b)Combined Temperature & Relative Humidity c)Liquid Precipitation (Rainfall) Sensor d)Meteorological Mast e)Interface unit	1 No.	Rs. 200,000/-	Rs. 200,000/-
3.0	**Installation, Commissioning and Training** at site in India by Engineers of Envea India Pvt. Ltd.	Lump sum	Rs. 50,000/-	Rs. 50,000/-
TOTAL BASIC PRICE				**Rs. 46,00,000/-**

Notes:

- Stabilized & Uninterrupted Power Supply 230V AC, 50 Hz. to be provided at Analyzer Panel.
- Air-conditioned civil room with all accessories to be provided by customer for mounting Analyzers.
- Broadband connection with static IP to be provided by customer for communication with CPCB.
- Any Civil & Mechanical job at site like Civil Foundation, Surge arrestor & Earth pit shall be in the scope of the customer.
- All analyzers are USEPA Approved and as per CAAQMS Guidelines Published in 2009 in Indian Gazette.
- We are having More Than 30 Nos. CAAQMS in West Bengal and More than 900 Nos. CAAQMS in all over India including WBPCB & CPCB. Reference List attached for your ready reference. Your Nearby Stations are DVC Raghunathpur, DVC Mejia, WBPDCL Santaldih, Neo Metaliks, Shyam Sel & Power, Super Smelter, RAIC, WBPCB Durgapur & Asansol, Gagan Ferrotech etc.
- We are having our Own Server room in CPCB & WBPCB with adequate Man Power for providing you our quick support with remote access.
- We are having more than 60 Nos. Service Engineer in our West Bengal Region to provide you our quick support as soon as possible And in Asansol We are having 2 Nos. and in Durgapur we are having 1 No. Stationed Engineer for smooth support.
- We are also having our WBPCB CAAQMS in Asansol DM Office which is nearer from your plant. If you want to visit there and want to check the performance of our system you can easily do the same.

TERMS AND CONDITIONS

PRICES:-

Prices quoted in Indian Rupees (Rs.) are FOR Destination inclusive of packing, forwarding transportation to destination.

All the prices quoted are firm for the validity period for delivery quoted and are applicable for the total quantities as mentioned.

PAYMENT TERMS:-

"Rs." Items: All items quoted in Rupees will be supplied by Envea India Pvt. Ltd. Invoices will be raised for supply. Order should be placed on Envea India Pvt. Ltd., Navi Mumbai. Payment in "Rs." will be 50% Advance with Purchase Order
Balance 50% against dispatch documents through bank.

Installation and Commissioning – 100% after completion of Installation and Commissioning

FREIGHT:-

Items in "Rs." will be through approved transporter by road.

WARRANTY:-

Standard warranty will be for 12 months from the date of commissioning or 18 months from the date of shipment of goods whichever is earlier. Warranty covers good workmanship when used under normal operating conditions. Our responsibility is towards the supply of repaired or replaced parts free of charge (does not include refilling of Gas Cylinders, Consumables & Routine Preventive Maintenance).

GENERAL DELIVERY:-

Within 16 weeks from the date of receipt of technically and commercially clear supply order

TAXES AND DUTIES:-

For "Rs." Items GST @ 18% will be charged on Supply, Installation, and Commissioning & Training. Any changes in Government regulations in Taxes, Duties & Levies during the contract period will be borne by the Customer.

VALIDITY OF OFFER:-

90 days from the Quotation date.

FORCE MAJEURE:-

Every effort will be made to deliver the goods and execute the job within the schedules delivery period but we take no responsibility for any delay occasioned by cause beyond our control known as "Force Majeure".

INSTALLATION, COMMISSIONIONG & TRAINING:-

Installation, Commissioning & Training will be carried by Engineers of Envea India Pvt. Ltd.

AFTER SALES SERVICES:-

Services will be carried out during and after the period of warranty by Engineers of Envea India Pvt. Ltd.

COUNTRY OF ORIGIN:-

European Union / India

For Envea India Pvt. Ltd.

Suvam Mazumder
Sr. Manager – Sales
Contact – 9681541523, 8250967921

Annexure-XI

Qualissure Laboratory Services

361, Prantick Pally, 45/361, Bose Pukur Road, Kolkata -700107
Email : qualissure@gmail.com; info@qualissure.com ; Mob.No. 98312 87086 ; 9830093976

TC-6271

DOC NO : QLS/SAMP/08-A/00

TEST REPORT

Name & Address Of the Customer :		
M/s. Rashmi Green Hydrogen Steel Pvt. Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	Report No. Date Sample No. Sample Description Date of performance Ref No. Date	: QLS/P-86/23-24/C/01 : 11.08.2023 : QLS/P-86/23-24/01 : Ambient Air : 09.08.2023-11.08.2023 : 5400012651, Dated – 05.08.2023

Analysis Result

Location : Near Plant Main Gate			Date of sampling : 07.08.2023-08.08.2023	
Sampling Done by: B.Mondal/C.Sahoo			Sampling done as per : CPCB Guidelines (Volume-1)	
Environmental Condition : Cloudy & Rainfall				
Sl. No.	Pollutants	Result	LIMIT	Method of Test Reference
1	Particulate matter (<10µm) in µg/m³	55	100	IS: 5182 (Part-23)-(RA-2017)
2	Particulate matter (<2.5µm) in µg/m³	23	60	USEPA CFR-40,Part-50, Appendix-L
3	Sulphur dioxide (SO_2) in µg/m³	5.2	80	IS: 5182 (Part-2)-2001, (RA-2017)
4	Nitrogen dioxide (NO_2) in µg/m³	22.9	80	IS: 5182 (Part- 6)- (RA-2017)
5	Carbon Monoxide (CO) in µg/m³	549	2000	IS: 5182 (Part- 10)- (RA-2017)
6	Ozone (O_3) in µg/m³	<19.62	180	Air Sampling, 3rd Edn -Method-411
NOTE: Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality.				

Report Prepared By:

for Qualissure Laboratory Services
Reviewed & Authorized By

Benimadhab Goral, Chemist
(Authorized Signatory)

——End of the Report——

- *The results relate only to the item(s) tested.*
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Qualissure Laboratory Services

361, Prantick Pally, 45/361, Bose Pukur Road, Kolkata -700107
Email : qualissure@gmail.com; info@qualissure.com ; Mob.No. 98312 87086 ; 9830093976

TC-6271

DOC NO : QLS/SAMP/08-A/00

TEST REPORT

Name & Address Of the Customer :		
M/s. Rashmi Green Hydrogen Steel Pvt Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	Report No.	: QLS/P-86/23-24/C/03
	Date	: 11.08.2023
	Sample No.	: QLS/P-86/23-24/03
	Sample Description	: Ambient Air
	Date of performance	: 09.08.2023-11.08.2023
	Ref No. Date	: 5400012651, Dated – 05.08.2023

Analysis Result

Location : Near Coal Gas Fire Unit			Date of sampling : 08.08.2023-09.08.2023	
Sampling Done by: B.Mondal/C.Sahoo			Sampling done as per : CPCB Guidelines (Volume-1)	
Environmental Condition : Cloudy & Rainfall				
Sl. No.	**Pollutants**	**Result**	**LIMIT**	**Method of Test Reference**
1	Particulate matter (<10µm) in µg/m³	44	100	IS: 5182 (Part-23)-(RA-2017)
2	Particulate matter (<2.5µm) in µg/m³	20	60	USEPA CFR-40,Part-50, Appendix-L
3	Sulphur dioxide (SO_2) in µg/m³	4.8	80	IS: 5182 (Part-2)-2001, (RA-2017)
4	Nitrogen dioxide (NO_2) in µg/m³	24.8	80	IS: 5182 (Part- 6)- (RA-2017)
5	Carbon Monoxide (CO) in µg/m³	515	2000	IS: 5182 (Part- 10)- (RA-2017)
6	Ozone (O_3) in µg/m³	<19.62	180	Air Sampling , 3rd Edn -Method-411
NOTE: Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality.				

Report Prepared By:

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Reviewed & Authorized By

Bonimadhab Gorai, Chemist
(Authorized Signatory)

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TC-6271

DOC NO : QLS/SAMP/08-A/00

TEST REPORT

Name & Address Of the Customer :		
M/s. Rashmi Green Hydrogen Steel Pvt Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	Report No.	: QLS/P-86/23-24/C/06
	Date	: 11.08.2023
	Sample No.	: QLS/P-86/23-24/06
	Sample Description	: Work Zone Monitoring
	Date of performance	: 09.08.2023-11.08.2023
	Ref No. Date	: 5400012651, Dated – 05.08.2023

Analysis Result

Location : Finishing Production Area			Date of sampling : 08.08.2023
Sampling Done by: C.Sahoo/B.Mondal			Sampling done as per : CPCB Guidelines (Volume-1)
Environmental Condition : Cloudy & Rainfall			
Sl. No.	**Pollutants**	**Result**	**Method of Test Reference**
1	Total Suspended Particulate Matter in $\mu g/m^3$	141	IS 5182 : Part.4-1999,(RA-2014)
2	Respirable Suspended Particulate Matter in $\mu g/m^3$	68	IS 5182: Part 23 : 2012
3	Sulphur dioxide (SO_2) in $\mu g/m^3$	8.0	IS: 5182 (Part-2)-2001,(RA-2012)
4	Nitrogen dioxide (NO_2) in $\mu g/m^3$	29.6	IS: 5182 (Part- 6) 2012
NOTE: Fugitive emission Standard - 4000 $\mu g/m^3$ as per Environment (Protection) rules, 1985.			

Report Prepared by :

for Qualissure Laboratory Services
Reviewed & Authorized By

Benimadhab Goral, Chemist
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TC-6271

DOC NO : QLS/SAMP/08-A/00

TEST REPORT

Name & Address Of the Customer :		
M/s. Rashmi Green Hydrogen Steel Pvt Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	Report No.	: QLS/P-86/23-24/C/07
	Date	: 11.08.2023
	Sample No.	: QLS/P-86/23-24/07
	Sample Description	: Work Zone Monitoring
	Date of performance	: 09.08.2023-11.08.2023
	Ref No. Date	: 5400012651, Dated – 05.08.2023

Analysis Result

Location : Hot Mill Area		Date of sampling : 08.08.2023	
Sampling Done by: C.Sahoo/B.Mondal		Sampling done as per : CPCB Guidelines (Volume-1)	
Environmental Condition : Cloudy & Rainfall			
Sl. No.	Pollutants	Result	Method of Test Reference
1	Total Suspended Particulate Matter in $\mu g/m^3$	206	IS 5182 : Part.4-1999,(RA-2014)
2	Respirable Suspended Particulate Matter in $\mu g/m^3$	94	IS 5182: Part 23 : 2012
3	Sulphur dioxide (SO_2) in $\mu g/m^3$	9.4	IS: 5182 (Part-2)-2001,(RA-2012)
4	Nitrogen dioxide (NO_2) in $\mu g/m^3$	33.6	IS: 5182 (Part- 6)-2012
NOTE: Fugitive emission Standard - 4000 $\mu g/m^3$ as per Environment (Protection) rules, 1986.			

Report Prepared by :

for Qualissure Laboratory Services
Reviewed & Authorized By

Benimadhab Gorai, Chemist
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TC-6271

DOC NO : QLS/SAMP/08-A/00

TEST REPORT

Name & Address Of the Customer:		
M/s. Rashmi Green Hydrogen Steel Pvt. Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	Report No.	: QLS/P-86/23-24/C/08
	Date	: 11.08.2023
	Sample No.	: QLS/P-86/23-24/08
	Sample Description	: Work Zone Monitoring
	Date of performance	: 09.08.2023-11.08.2023
	Ref No. Date	: 5400012651, Dated – 05.08.2023

Analysis Result

Location : Surface Treatment Area		Date of sampling : 08.08.2023	
Sampling Done by: C.Sahoo/B.Mondal		Sampling done as per : CPCB Guidelines (Volume-1)	
Environmental Condition : Cloudy & Rainfall			
Sl. No.	**Pollutants**	**Result**	**Method of Test Reference**
1	Total Suspended Particulate Matter in $\mu g/m^3$	167	IS 5182 : Part 4-1999,(R4-2014)
2	Respirable Suspended Particulate Matter in $\mu g/m^3$	82	IS 5182: Part 23 : 2012
3	Sulphur dioxide (SO_2) in $\mu g/m^3$	7.8	IS: 5182 (Part-2)-2001,(RA-2012)
4	Nitrogen dioxide (NO_2) in $\mu g/m^3$	31.8	IS: 5182 (Part- 6)-2012
5	Concentration of acid mist as H_2SO_4 in ($\mu g/m^3$)	76.3	Lab Method
NOTE: Fugitive emission Standard - 4000 $\mu g/m^3$ as per Environment (Protection) rules, 1986.			

Report Prepared by :

for **Qualissure Laboratory Services**
Reviewed & Authorized By

Benimadhab Gorai, Chemist
(Authorized Signatory)

—— End of the Report——

PROPOSAL FOR

ONLINE CONTINUOUS EFFLUENT QUALITY MONITORING SYSTEM

(EQMS)

SWAN ENVIRONMENTAL PVT.LTD.

(An ISO 9001:2015 Certified Company)
2nd Floor, Swan Aalayaa
Plot No: 922 & 935, Swami Ayyappa Co-op Society, Madhapur, Hyderabad, Telangana - 500081
Mob: 9642225204 ; Tel: (040) 40216184/85 ; Fax: (040) 40216183
Email: info@swanenviron.com ; Website: www.swanenviron.com

Quotation

SWAN ENVIRONMENTAL PVT. LTD.
An ISO 9001 : 2015 Certified Company
CIN: U92110TG1988PTC008656
Plot No: 922 & 935, Swami Ayyappa Co-Op Society, Madhapur,
Hyderabad - 500081, Telangana, India.
Ph: +91 - 40 - 4021 6184 / 85, Fax : 40216183.
Email : info@swanenviron.com ; Website : www.swanenviron.com

To,

M/s. Rashmi Green Hydrogen Steel Private limited

Department : Environmental

AJC Bose road centre,1st floor ,, Kolkata, West

Bengal, India, 70017

Kind Attention Mr. Sanjay Kumar Jain

Designation : Executive Director

Mobile : 6260572916

Email : ed@rashmigroup.com

Quotation No PRO004842

Date 08.11.2023

Sub : Quote for EQMS
Reference : Discussion had with our Mr. Pratap Mandal

Dear Sir,

We take this opportunity to introduce ourselves, **SWAN** is incorporated in 1988 by a group of qualified and experienced professionals with a core objective to be one of key solution provider in the field of **S**oil, **W**ater, **A**ir & **N**oise quality monitoring in country to protect the Environment. We strongly believe **SWAN** has been created a position in market as a leader in India since more than 3- decades in various industrial sectors, government organization, Research and development, renowned institutions for providing world class environmental monitoring solutions. During the course of time SWAN has formed four different group companies with a special attention to serve the Industries/Institutions more efficiently and focused manner

Swan Technical Services Pvt Ltd. Complete Continues Ambient Air Quality Monitoring Systems(CAAQMS)

Swan Environmental Pvt Ltd. Complete Continues Emission Monitoring Systems (CEMS) & Continues Effluent Quality Monitoring Systems (CEQMS), other laboratory, Hand held instrument for complete environmental monitoring

Swan Scientific LLP Complete Scientific Laboratory Equipment's

Swan Biotech Pvt Ltd. Complete Pharma QA & QC Equipment's

We strongly position our strength and credential in country with a full capacity of turnkey solution for water quality , water level, system integration in continuous monitoring station that include supply o more than 600+nos of **CAAQMS** (Continuous Ambient Air Quality Monitoring Stations), 300+nos of **EQMS** (Effluent Quality Monitoring Systems) and 350+nos of **CEMS** (Continuous Emission Monitoring Systems). Our systems are in use in all categories of industries and we have a long list of highly satisfied customers. We offer services that cover engineering, supply, installation, commissioning, datalogging and uploading of data to PCB, customer servers and providing AMC's / CMC's / O&M. We have awarded with customer satisfaction performance reports and certificates

We have been associated with several world class companies in the field of environmental monitoring solution since past more than 3 decades

Technical point to be note before choose the Technology

We would like to inform you that for online monitoring of COD and BOD , the 680 Deg C Catalytic combustion with NDIR detection based TOC analyzer is best compare to UV - VIS Spectrophotometer. We would like to highlight the following points for your ready reference.

The main points to prove UV-VIS technology drawbacks are as below hence not suitable for your effluents monitoring applications:

UV-VIS Technology has **limited ability to detect potential organic contaminants** this means it cannot detect many potential organic contaminants and hence it cannot estimate COD and BOD properly.

(Find reference USEPA Sensor evaluation document -- 1)

UV-VIS Technology **cannot detect Single Covalent bond compounds like Sugar, Alcohols, Short-Chain - Aliphatics** etc..UV absorption is also (partly) blind for the organics like; Ether, Aldehyde, Alkene, Alkyne, Glycerin, Ketone,Parafin, Some components absorb a lot of light, others absorb hardly any light. this also proves it cannot measure COD and BOD accurately.

(Find reference document DIN- 38404-3 --- 2).

(Waste water containing ionic **iron, nitrates, nitrites and bromide** have been reported to interfere with measurements of UV absorbance and it can't be determined as each unique sample matrix.

(Refer Documents USEPA 415.3 —— 3)

Interference may also be caused by the **out gassing of dissolved gases** (Oxygen, Carbon dioxide), by contaminants on the cell and skin greases soon its beam entrance and exit walls.

(Reference DIN – 38404-3)

Also please note the CPCB guidelines clearly say they need COD and BOD measurement within +/- 10 % accuracy when it compare to the results with laboratory methods , this is impossible to get with UV VIS Spectroscopy method. It was already tested it by USEPA and they found variation from + 39 % to - 33% when they are measuring organic contents in the effluents

(Refer Find USEPA evolution document)

As per CPCB notice and letter , the online monitoring system require remote online calibration check , this is impossible for UV VIS probe based product and the analyzer need certification from USEPA/TUV/MCERT , please note only MCERT has certification program for online waste water monitoring analyzer and UV VIS product don't have any such certification.

As per CPCB guidelines table -3 clearly specified that UV - VIS probe having Entire Spectrum Scanning 200 - 750 nm is only suggested for industrial effluents monitoring, where as we have observed only single wavelength UV @ 254nm are being sold by few suppliers which is not meeting the CPCB minimum specified requirements, please kindly verify these points apart from above points before deciding the technology.

We also would like to inform that that TOC analyzer manufactured by Shimadzu Corporation , Japan is meeting all the requirements of CPCB directive and guidelines to measure COD and BOD accurately and don't any of above single drawbacks and meet 100%. This technology well recognized by CPCB and meeting many other International references like APHA 5310B, USEPA 415.1, EN 1484, etc.. We are also having MCERT certificate , find enclosed certificate for Shimadzu TOC analyzer which is also one of the requirement of CPCB directive letter No B29016/04/06/PCI-1, dated May 29, 2015. The most important is as per CPCB directive the online monitoring system should have provision for remote online calibration check and this is possible if you buy our TOC analyzer.

We hope you will give value for what you are going to get and recommend our technology for 100% meeting all regulatory requirements. We have good number of installations and working for past 10 years in similar field and you can check with any end-user for their feed back on the same Looking for your valuable orders for the same.

Sr No	Description	Qty.	Unit	Sales Price (₹)	Total (₹)
1	**Online pH & Temperature Analyzer Panel mounted** Model No: DWA-3000B-pH Part No: DWA-3000B & PW34 HSN No: 90279090 Make: Daeyoon Scale Industrial Co. Ltd., Korea PH Controller Daeyoon Scale	1	No.	1,00,000.00	1,00,000.00
2	**Online Total Suspend Solids Monitor wall mounted controller** Model No: DWA-3000A-TSS Part No: DWA3000A & TCSC 200N HSN No: 9027 9090 Make: Daeyoon Scale Industrial Co. Ltd., Korea Measurement method: IR LED 880nm scattering (45 degree) Range:0-2000 mg/l or user Specific Analogue Output/Load: Two 4 – 20mA ; Load: 500 ohms. Relay output: 4 relay our put for high low & cleaning Digital interface: RS-485 optional wall mounted controller with IP 65 protection Power supply: 230 VAC; 50 Hz	1	No.	2,20,000.00	2,20,000.00
3	**EQMS Data logging software & uploading to CPCB & SPCB** Model No: EQMS CPCB & SPCB Part No: SED-9S HSN No: 84715000 Make: - Data logging and Uploading software to CPCB , SPCB & A/D Converter	1	No.	1,00,000.00	1,00,000.00
			Total (₹)		**4,20,000.00**

Total in Words (₹) : Four Lakh Twenty Thousand Only

UTILITIES TO BE PROVIDED BY CUSTOMER FOR ONLINE TOC:

1. UPS 230 V AC; 50 Hz 1-phase Power supply to be provided at the site
2. Civil and mechanical works as required for successful installation to be done by customer.
3. Internet connection for data logging/Data uploading.
4. Earth pit to be provided at the location by customer.
5. Process Mating flanges to be provided.
6. PC should be provided

TERMS & CONDITIONS FOR INDIAN RUPEES

1)	Prices	:	FOR, Hyderabad
2)	Packing & Forwarding	:	Extra at actuals
3)	Freight & Insurance	:	Extra at actuals else you can assign your transporter we will hand over the Material to

			the transporter
4)	GST	:	18% Extra on quoted prices or as per prevailing rates at the time of billing
5)	Payment	:	40% advance along with purchase order 50% against proof of dispatch And a balance 10% after installation and commissioning or from 30 days of dispatch, whichever is earlier.
6)	Delivery	:	12-14 weeks from the date of Order Acknowledgement
7)	Validity of the offer	:	30 Days from the quote dates.
8)	Warranty	:	12 months for the instrument from the date of Invoice.
9)	CAMC	:	Does not cover any damage occurred during natural disasters, High power Fluctuation, Physical damages, etc.
10)	Installation & Commissioning	:	Free of Cost by Swan Team for 4 days.
11)	Order Placement	:	In the name of Swan Environmental Pvt. Ltd, Hyderabad
12)	Company Details	:	PAN : AADCS4126R, GST : 36AADCS4126R1ZW
13)	Post order	:	Our engineer will visit the site inspect the same & give you the necessary Utilities required for installation based on the site condition.
14)	Force majeure	:	No responsible for delay

Should you need any further information please do contact us.

Thanking you and looking for your favorable response.

Yours sincerely,
For Swan Environmental Pvt. Ltd.

Girish Vemulapalli
SR Manager
Email: girish@swanenviron.com
Mobile No. : 9642225237

This is software generated quotation.

Qualissure Laboratory Services

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Email : qualissure@gmail.com; info@qualissure.com ; Mob.No. 98312 87086 ; 9830093976

TC-6271

DOC NO : QLS//SAMP/08-D/00

TEST REPORT

Name & Address Of the Customer :		
M/s. Rashmi Green Hydrogen Steel Pvt Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	Report No. Date Sample No. Sample Description Sample Mark Sample Drawn On Date(s) of Performance Sample Drawn By Sampling Method Ref No. Date	: QLS/P-86/23-24/C/15 : 16.08.2023 : QLS/P-86/23-24/15 : Effluent Water : ETP Outlet : 08.08.2023 : 09.08.2023- 16.08.2023 : Lab Representative (Mr. C.Sahoo) : IS 17614(P-1, P-5 & P-25) 2021 & 2022 : 5400012651, Dated – 05.08.2023

Analysis Result

Sl. No.	Parameter	Test Method	Result	Limit as per CPCB for discharge of effluents	
				Inland Surface Water	Public Sewers
1	pH at 25° C	APHA 24th Edition-2023 , 4500H+	7.13	5.5 to 9.0	5.5 to 9.0
2	Total Suspended Solid in mg/l	APHA 24th Edition-2023, 2540D	16	100	600
3	Total Dissolved Solids (as TDS) in mg/l	APHA 24th Edition 2023, 2540 B	522	–	–
4	Dissolved Oxygen (DO) in mg/l	APHA 24th Edition-2023,4500-O-C	6.3	–	–
5	Chemical Oxygen Demand (as COD) in mg/l	APHA 24th Edition-2023, 5220B	35	250	–
6	Biochemical Oxygen Demand (as BOD) in mg/l	IS 3025 (Part 44)-1993, RA:2019	10	30	350
7	Oil & Grease in mg/l	APHA 24th Edition-2023, 5520B	1.7	10	20
8	Iron (as Fe) in mg/l	APHA 24th edition 2023, 3111B	0.29	3	3
9	Zinc (as Zn) in mg/l	APHA 24th edition 2023, 3111B	0.12	5	15

Report Prepared By :

for Qualissure Laboratory Services
Reviewed & Authorized By

Bishnupriya Banerjee, Chemist
(Authorized Signatory)

End of the Report

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TC-6271

DOC NO : QLS//SAMP/08-D/00

TEST REPORT

Name & Address Of the Customer :		
M/s. Rashmi Green Hydrogen Steel Pvt Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	Report No. Date Sample No. Sample Description Sample Mark Sample Drawn On Date(s) of Performance Sample Drawn By Sampling Method Ref No. Date	: QLS/P-86/23-24/C/14 : 16.08.2023 : QLS/P-86/23-24/14 : Effluent Water : ETP Inlet : 08.08.2023 : 09.08.2023- 16.08.2023 : Lab Representative (Mr. C.Sahoo) : IS 17614(P-1, P-5 & P-25) 2021 & 2022 : 5400012651, Dated – 05.08.2023

Analysis Result

Sl. No.	Parameter	Test Method	Result	Limit as per CPCB for discharge of effluents	
				Inland Surface Water	Public Sewers
1	pH at 25° C	APHA 24th Edition-2023 , 4500H+	3.37	5.5 to 9.0	5.5 to 9.0
2	Total Suspended Solid in mg/l	APHA 24th Edition-2023, 2540D	68	100	600
3	Total Dissolved Solids (as TDS) in mg/l	APHA 24th Edition 2023, 2540 B	1346	—	—
4	Dissolved Oxygen (DO) in mg/l	APHA 24th Edition-2023,4500-O-C	2.7	—	—
5	Chemical Oxygen Demand (as COD) in mg/l	APHA 24th Edition-2023, 5220B	246	250	—
6	Biochemical Oxygen Demand (as BOD) in mg/l	IS 3025 (Part 44)-1993, RA:2019	72	30	350
7	Oil & Grease in mg/l	APHA 24th Edition-2023, 5520B	9.2	10	20
8	Iron (as Fe) in mg/l	APHA 24th edition 2023, 3111B	12.3	3	3
9	Zinc (as Zn) in mg/l	APHA 24th edition 2023, 3111B	1.86	5	15

Report Prepared By :

for Qualissure Laboratory Services
Reviewed & Authorized By :

Bishnupriya Banerjee, Chemist
(Authorized Signatory)

------End of the Report------

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Email : qualissure@gmail.com; info@qualissure.com ; Mob.No. 98312 87086 ; 9830093976

TC-6271

DOC NO : QLS/SAMP/08-D/00

TEST REPORT

Name & Address Of the Customer : **M/s. Rashmi Green Hydrogen Steel Pvt Ltd.** Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	ULR No.	: TC627123000001135F
	Report No.	: QLS/P-86/23-24/C/11
	Date	: 16.08.2023
	Sample No.	: QLS/P-86/23-24/11
	Sample Description	: Drinking Water
	Sample Mark/Location	: Surface Treatment Plant
	Date of Performance	: 09.08.2023- 16.08.2023
	Sample Drawn On	: 08.08.2023
	Sample Drawn By	: Lab Representative (Mr. C.Sahoo)
	Sampling Method	: IS 17614(P-1, P-5 & P-25) 2021 & 2022
	Ref No. Date	: 5400012651, Dated – 05.08.2023

Analysis Result

(A) Microbiological Analysis

Sl.No.	Characteristic	Limit as Per IS 10500 :2012, RA: 2018 And. 2	Test Method	Result
1.	E coli/100ml	Not Detectable	IS 15185-2016	Not Detected
2.	Total Coliform Bacteria/100ml	Not Detectable	IS 15185-2016	Not Detected

(B) Chemical Analysis

Sl.No	Test Parameter	Test Method	Limit As Per IS 10500 :2012, RA: 2018 And. 1 & 2		Result
			Acceptable Limit	Permissible Limit	
1.	Odour	IS 3025(Part 5)-1983; RA:2018	Agreeable	Agreeable	Agreeable
2.	pH Value at 25°C	IS 3025 (Part 11)-1984; RA: 2019	6.5-8.5	No Relaxation	7.46
3.	Turbidity in NTU	IS 3025 (Part 10) 1984; RA: 2017	1	5	<1.0
4.	Total Dissolved Solids (as TDS) in mg/l	IS 3025(Part 16)-1984; RA: 2017	500	2000	252
5.	Aluminium (as Al) in mg/l	IS 15302: 2003 (RA 2019)	0.03	0.2	<0.01
6.	Ammonia (as total ammonia – N) in mg/l	IS 3025 (Part 34): 1988;RA:2019	0.5	No Relaxation	<0.1
7.	Anionic Detergents(as MBAS) in mg/l	IS 13428-2005(Annex #) ; RA:2018	0.2	1.0	<0.07
8.	Boron(as B) in mg/l	IS 13428-2005(Annex L); RA:2018	0.5	2.4	<0.5
9.	Calcium(as Ca) in mg/l	IS 3025 (Part 40)-1991, RA: 2019	75	200	41.0
10.	Chloride(as Cl) in mg/l	IS 3025 (Part 32)-1988, RA: 2019	250	1000	48.9
11.	Copper(as Cu) in mg/l	IS 3025 (Part 42): 1992 ; RA 2019	0.05	1.5	<0.02
12.	Fluoride(as F) in mg/l	APHA 24th Edition 2023, 4500 F D	1.0	1.5	<0.1
13.	Free Residual Chlorine in mg/l	IS 3025 (Part 26) 1986 RA: 2021	0.2	1.0	<0.1
14.	Iron (as Fe) in mg/l	IS 3025(Part 53)-1988 RA: 2019	1.0	No Relaxation	0.26
15.	Magnesium(as Mg) in mg/l	APHA 24th Edition- 2023, 3500 Mg	30	100	21.9
16.	Manganese (as Mn) in mg/l	IS 3025 (Part 59): 2006 RA 2019	0.1	0.3	<0.02
17.	Nitrate (as NO_3) in mg/l	IS 3025 (Part 34)-1988 RA: 2019	45	No Relaxation	<0.5
18.	Phenolic Compounds(as C_6H_5OH) in mg/l	IS 3025 (Part 43) 1992 RA: 2019	0.001	0.002	<0.001
19.	Selenium(as Se) in mg/l	IS 15303-2003; RA : 2018	0.01	No Relaxation	<0.01
20.	Sulphate (as SO_4) in mg/l	IS 3025 (Part 24)-1986, RA: 2022	200	400	27.6
21.	Sulphide (as H_2S) in mg/l	IS 3025 (Part 29): 1991; RA 2019	0.05	No Relaxation	<0.1
22.	Alkalinity(as $CaCO_3$)in mg/l	IS 3025 (Part 23)- 1986, RA: 2019	200	600	180.4
23.	Total Hardness (as $CaCO_3$) in mg/l	IS 3025 (Part 21)-2009, RA: 2019	200	600	153.8
24.	Cadmium(as Cd) in mg/l	IS 3025(Part 41)-1992;RA: 2019	0.003	No Relaxation	<0.002
25.	Cyanide(as CN) in mg/l	IS 3025(Part 27)-1986;RA: 2019	0.05	No Relaxation	<0.02
26.	Lead(as Pb) in mg/l	IS 3025(Part 47)-1994;RA: 2019	0.01	No Relaxation	<0.01
27.	Mercury(as Hg) in mg/l	IS 3025(Part 48)-1994;RA: 2019	0.001	No Relaxation	<0.001
28.	Arsenic(as As) in mg/l	IS 3025 (Part 37)-1988, RA- 2019	0.01	No Relaxation	<0.01
29.	Zinc(as Zn) in mg/l	IS 3025(Part 49)-1994;RA: 2019	5	15	<0.02
30.	Total Chromium (as Cr) in mg/l	IS 3025 (Part 52): 2019	0.05	No Relaxation	<0.05

Remarks:Water is potable in respect to the above parameters of IS 10500:2012(RA- 2018)

Report Prepared By:

for Qualissure Laboratory Services
Reviewed & Authorized By

Soumy Chakraborty, Microbiologist
(Authorized Signatory)

for Qualissure Laboratory Services
Reviewed & Authorized By

Bishnupriya Banerjee, Chemist
(Authorized Signatory)

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TC-6271

DOC NO : QLS/SAMP/08-D/00

TEST REPORT

Name & Address Of the Customer :		
M/s. Rashmi Green Hydrogen Steel Pvt Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	ULR No.	: TC627123000001136F
	Report No.	: QLS/P-86/23-24/C/12
	Date	: 16.08.2023
	Sample No.	: QLS/P-86/23-24/12
	Sample Description	: Drinking Water
	Sample Mark/Location	: Greed Finishing Area
	Date of Performance	: 09.08.2023- 16.08.2023
	Sample Drawn On	: 08.08.2023
	Sample Drawn By	: Lab Representative (Mr. C.Sahoo)
	Sampling Method	: IS 17614(P-1, P-5 & P-25) 2021 & 2022
	Ref No. Date	: 5400012651, Dated – 05.08.2023

Analysis Result

(A) Microbiological Analysis

Sl.No.	Characteristic	Limit as Per IS 10500 :2012, RA: 2018 Amd. 2	Test Method	Result
1.	E.coli/100ml	Not Detectable	IS 15185-2016	Not Detected
2.	Total Coliform Bacteria/100ml	Not Detectable	IS 15185-2016	Not Detected

(B) Chemical Analysis

Sl.No	Test Parameter	Test Method	Limit As Per IS 10500 :2012, RA: 2018 Amd. 1 & 2		Result
			Acceptable Limit	Permissible Limit	
1.	Odour	IS 3025(Part 5)-1983; RA:2018	Agreeable	Agreeable	Agreeable
2.	pH Value at 25°C	IS 3025 (Part 11)-1984; RA: 2019	6.5-8.5	No Relaxation	7.16
3.	Turbidity in NTU	IS 3025 (Part 10)-1984; RA: 2017	1	5	<1.0
4.	Total Dissolved Solids (as TDS) in mg/l	IS 3025(Part 16)-1984; RA: 2017	500	2000	212
5.	Aluminium (as Al) in mg/l	IS 15302: 2003 (RA 2019)	0.03	0.2	<0.01
6.	Ammonia (as total ammonia – N) in mg/l	IS 3025 (Part 34): 1988;RA:2019	0.5	No Relaxation	<0.1
7.	Anionic Detergents(as MBAS) in mg/l	IS 13428-2005(Annex K) ; RA:2018	0.2	1.0	<0.02
8.	Boron(as B) in mg/l	IS 13428-2005(Annex L); RA:2018	0.5	2.4	<0.5
9.	Calcium(as Ca) in mg/l	IS 3025 (Part 40)-1991, RA: 2019	75	200	38.0
10.	Chloride(as Cl) in mg/l	IS 3025 (Part 32)-1988, RA: 2019	250	1000	41.1
11.	Copper(as Cu) in mg/l	IS 3025 (Part 42): 1992 ; RA 2019	0.05	1.5	<0.02
12.	Fluoride(as F) in mg/l	APHA 24th Edition 2023, 4500 F D	1.0	1.5	<0.1
13.	Free Residual Chlorine in mg/l	IS 3025 (Part 26) 1986 RA: 2021	0.2	1.0	<0.1
14.	Iron (as Fe) in mg/l	IS 3025(Part 53)-1988 RA: 2019	1.0	No Relaxation	0.22
15.	Magnesium(as Mg) in mg/l	APHA 24th Edition- 2023, 3500 Mg	30	100	19.2
16.	Manganese (as Mn) in mg/l	IS 3025 (Part 59): 2006 RA 2019	0.1	0.3	<0.02
17.	Nitrate (as NO_3) in mg/l	IS 3025 (Part 34)-1988 RA: 2019	45	No Relaxation	<0.5
18.	Phenolic Compounds(as C_6H_5OH) in mg/l	IS 3025 (Part 43)-1992 RA: 2019	0.001	0.002	<0.001
19.	Selenium(as Se) in mg/l	IS 15303-2003; RA : 2013	0.01	No Relaxation	<0.01
20.	Sulphate (as SO_4) in mg/l	IS 3025 (Part 24)-1986, RA: 2022	200	400	23.4
21.	Sulphide (as H_2S) in mg/l	IS 3025 (Part 29): 1991; RA 2019	0.05	No Relaxation	<0.1
22.	Alkalinity(as $CaCO_3$)in mg/l	IS 3025 (Part 23)- 1986, RA: 2019	200	600	149.6
23.	Total Hardness (as $CaCO_3$) in mg/l	IS 3025 (Part 21)-2009, RA: 2019	200	600	174.8
24.	Cadmium(as Cd) in mg/l	IS 3025(Part 41)-1992;RA: 2019	0.003	No Relaxation	<0.002
25.	Cyanide(as CN) in mg/l	IS 3025(Part 27)-1986;RA: 2019	0.05	No Relaxation	<0.02
26.	Lead(as Pb) in mg/l	IS 3025(Part 47)-1994;RA: 2019	0.01	No Relaxation	<0.01
27.	Mercury(as Hg) in mg/l	IS 3025(Part 48)-1994;RA: 2019	0.001	No Relaxation	<0.001
28.	Arsenic(as As) in mg/l	IS 3025 (Part 37)-1988, RA: 2019	0.01	No Relaxation	<0.01
29.	Zinc(as Zn) in mg/l	IS 3025(Part 49)-1994;RA: 2019	5	15	<0.02
30.	Total Chromium (as Cr) in mg/l	IS 3025 (Part 52): 2019	0.05	No Relaxation	<0.05

Remarks:Water is potable in respect to the above parameters of IS 10500:2012(RA- 2018)

Report Prepared By:

for Qualissure Laboratory Services
Reviewed & Authorized By

Soumy Chakraborty, Microbiologist
(Authorized Signatory)

for Qualissure Laboratory Services
Reviewed & Authorized By

Bishnupriya Banerjee, Chemist
(Authorized Signatory)

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BRIQUETTE MANUFACTURING PLANT									
Conveyor Belt	Friction	Fire	Improper Maintenance	Belt Sway Switch	8	2	2	32	Lubricating the rotating parts regularly
COKE OVEN PLANT									
Conveyor belt to top of the coal tower	Operation failure	Injury	Improper Maintenance	Line inspection	4	2	2	16	Periodic maintenance
ROLLING MILL , PCM									
Conveyor rollers to feed	Friction	Fire	Improper Maintenance	Belt Sway Switch	8	2	2	32	Lubricating the rotating parts regularly
Water cooling pump	Pump failure	Explosion	No power supply	Redundant power supply	10	3	2	60	Check the fuel level of diesel generator
ROLLING MILL (GALVANISING & PICKLING LINE)									
Hot water sprayer in galvanizing	pin Holes	Gas temperature increase	Spraying hot water excessively	Monitors	7	3	2	42	Check the level for every 5 minutes
Hot pickle bath	pin Holes	Spillage	Spraying hot pickle excessively	Monitors	7	3	2	42	Check the level for every 5 minutes
LIME DOLOMITE PLANT									
Lance	Tuyere puncture	Burns	Ageing	Reliable Supplier	5	4	4	80	Check defects before use
Conveyor belt to storage tanker	Friction	Fire	Improper Maintenance	Belt Sway Switch	4	2	2	16	Lubricating the rotating parts regularly
COAL BASED CPP									
Air Supply Fluidized Bed	Flow Air Fuel Ratio	Operation Failure	Air Flow Below 30 %	Line inspection	5	3	5	75	Provide detectors with alarm system
Boiler	Corrosion Effect	Cooling of tube increases temperature	Creep Failure	Line inspection	4	4	5	80	Regular inspection
Boiler	Boiler Tube	Damage inside & outside the tube	Extremely combustion	Monitors	6	2	5	60	Periodic Maintenance

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TC-6271

DOC NO : QLS/SAMP/08-D/00

TEST REPORT

Name & Address Of the Customer :		
M/s. Rashmi Green Hydrogen Steel Pvt Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	ULR No.	: TC627123000001137F
	Report No.	: QLS/P-86/23-24/C/13
	Date	: 16.08.2023
	Sample No.	: QLS/P-86/23-24/13
	Sample Description	: Drinking Water
	Sample Mark/Location	: Fitting Office Canteen
	Date of Performance	: 09.08.2023- 16.08.2023
	Sample Drawn On	: 08.08.2023
	Sample Drawn By	: Lab Representative (Mr. C.Sahoo)
	Sampling Method	: IS 17614(P-1, P-5 & P-25) 2021 & 2022
	Ref No. Date	: 5400012651, Dated – 05.08.2023

Analysis Result

(A) Microbiological Analysis

Sl.No.	Characteristic	Limit as Per IS 10500 :2012, RA: 2018 Amd. 2	Test Method	Result
1.	E.coli/100ml	Not Detectable	IS 15185-2016	Not Detected
2.	Total Coliform Bacteria/100ml	Not Detectable	IS 15185-2016	Not Detected

(B) Chemical Analysis

Sl.No	Test Parameter	Test Method	Limit As Per IS 10500 :2012, RA: 2018 Amd. 1 & 2		Result
			Acceptable Limit	Permissible Limit	
1.	Odour	IS 3025(Part 5)-1983; RA:2018	Agreeable	Agreeable	Agreeable
2.	pH Value at 25°C	IS 3025 (Part 11)-1984; RA: 2019	6.5-8.5	No Relaxation	7.03
3.	Turbidity in NTU	IS 3025 (Part 10)-1984; RA: 2017	1	5	<1.0
4.	Total Dissolved Solids (as TDS) in mg/l	IS 3025(Part 16)-1984; RA: 2017	500	2000	118
5.	Aluminium (as Al) in mg/l	IS 15302: 2003 (RA 2019)	0.03	0.2	<0.01
6.	Ammonia (as total ammonia – N) in mg/l	IS 3025 (Part 34): 1988;RA:2019	0.5	No Relaxation	<0.1
7.	Anionic Detergents(as MBAS) in mg/l	IS 13428: 2005(Annex K) ; RA:2018	0.2	1.0	<0.02
8.	Boron(as B) in mg/l	IS 13428-2005(Annex L); RA:2018	0.5	2.4	<0.5
9.	Calcium(as Ca) in mg/l	IS 3025 (Part 40)-1991, RA: 2019	75	200	19.8
10.	Chloride(as Cl) in mg/l	IS 3025 (Part 32)-1988, RA: 2019	250	1000	23.5
11.	Copper(as Cu) in mg/l	IS 3025 (Part 42): 1992 ; RA 2019	0.05	1.5	<0.02
12.	Fluoride(as F) in mg/l	APHA 24th Edition 2023, 4500 F D	1.0	1.5	<0.1
13.	Free Residual Chlorine in mg/l	IS 3025 (Part 26) 1986 RA: 2021	0.2	1.0	<0.1
14.	Iron (as Fe) in mg/l	IS 3025(Part 53)-1988 RA: 2019	1.0	No Relaxation	0.12
15.	Magnesium(as Mg) in mg/l	APHA 24th Edition- 2023, 3500 Mg	30	100	8.2
16.	Manganese (as Mn) in mg/l	IS 3025 (Part 59): 2006 RA 2019	0.1	0.3	<0.02
17.	Nitrate (as NO_3) in mg/l	IS 3025 (Part 34)-1886 RA: 2019	45	No Relaxation	<0.5
18.	Phenolic Compounds(as C_6H_5OH) in mg/l	IS 3025 (Part 43)-1992 RA: 2019	0.001	0.002	<0.001
19.	Selenium(as Se) in mg/l	IS 15303-2003; RA : 2013	0.01	No Relaxation	<0.01
20.	Sulphate (as SO_4) in mg/l	IS 3025 (Part 24)-1986, RA: 2022	200	400	12.4
21.	Sulphide (as H_2S) in mg/l	IS 3025 (Part 29): 1991; RA 2019	0.05	No Relaxation	<0.1
22.	Alkalinity(as $CaCO_3$)in mg/l	IS 3025 (Part 23)- 1986, RA: 2019	200	600	88.0
23.	Total Hardness (as $CaCO_3$) in mg/l	IS 3025 (Part 21)-2009, RA: 2019	200	600	83.6
24.	Cadmium(as Cd) in mg/l	IS 3025(Part 41)-1992;RA: 2019	0.003	No Relaxation	<0.002
25.	Cyanide(as CN) in mg/l	IS 3025(Part 27)-1986;RA: 2019	0.05	No Relaxation	<0.02
26.	Lead(as Pb) in mg/l	IS 3025(Part 47)-1994;RA: 2019	0.01	No Relaxation	<0.01
27.	Mercury(as Hg) in mg/l	IS 3025(Part 48)-1994;RA: 2019	0.001	No Relaxation	<0.001
28.	Arsenic(as As) in mg/l	IS 3025 (Part 37)-1988, RA- 2019	0.01	No Relaxation	<0.01
29.	Zinc(as Zn) in mg/l	IS 3025(Part 49)-1994;RA: 2019	5	15	<0.02
30.	Total Chromium (as Cr) in mg/l	IS 3025 (Part 52): 2019	0.05	No Relaxation	<0.05

Remarks:Water is potable in respect to the above parameters of IS 10500:2012(RA- 2018)

Report Prepared By:

for Qualissure Laboratory Services
Reviewed & Authorized By

Soumy Chakraborty, Microbiologist
(Authorised Signatory)

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Reviewed & Authorised By

Bishnupriya Banerjee, Chemist
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TC-6271

DOC NO : QLS/SAMP/08-C/00

TEST REPORT

Name & Address Of the Customer:		
M/s. Rashmi Green Hydrogen Steel Pvt Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	Report No.	: QLS/P-86/23-24/C/04
	Date	: 11.08.2023
	Sample No.	: QLS/P-86/23-24/04(A-C)
	Date of Performance	: 09.08.2023-11.08.2023
	Sample Description	: Noise Monitoring
	Ref No. Date	: 5400012651, : Dated – 05.08.2023

Monitoring Result of Noise

Sampling Done By: B.Mondal/C.Sahoo

Sampling Guideline : As per IS: 9876: 1981 (RA-2001)

Sample No.	Date of Monitoring	Location	Leq dB (A) Day Time	Leq dB (A) Night Time
04A	08.08-09.08.2023	Coal Gas Fire Unit	63.6	50.8
04B	07.08-08.08.2023	Near ETP Plant	61.7	47.9
04C		Near Main Gate	64.3	53.5

Code/ Category	Leq dB (A) Day Time	Leq dB (A) Night Time	
A/Industrial	75	70	***NOTE:*** *Day Time : 06.00 Hr. – 22.00 Hr.* *Night Time : 22.00 Hr. – 06.00 Hr.*
B/Commercial	65	55	
C/Residential	55	45	
D/Ecological Sensitive	50	40	

Report Prepared By:

for Qualissure Laboratory Services
Reviewed & Authorized By

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——End of the Report——

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TC-6271

DOC NO : QLS/SAMP/01-A/00

TEST REPORT

Name & Address Of the Customer :		
M/s. Rashmi Green Hydrogen Steel Pvt. Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	Report No. Date Sample No. Sample Description Date of performance Ref No. Date	: QLS/P-86/23-24/C/05 : 11.08.2023 : QLS/P-86/23-24/05(A-F) : Spot Noise Monitoring : 09.08.2023-11.08.2023 : 5400012651,Dated – 05.08.2023

Monitoring Result of Noise

Sampling Done By: B.Mondal

Sampling Guideline : As per IS: 9876: 1981 (RA-2001)

Sample no.	Location	Average dB
05A	Hot Mill-2	66.7
05B	Hot Mill-1	68.7
05C	Surface Treatment Plant	66.5
05D	Pilgar Production Area	70.1
05E	Finish Production Area	69.6
05F	Cold TPH Annealing Furnace Area	68.8

Remarks : Noise monitored at 1 mtr distance from DG enclosure system.

Code/ Category	Leq dB Day Time(A)	Leq dB Night Time(A)
A/Industrial	75	70
B/Commercial	65	55
C/Residential	55	45
D/Ecological Sensitive	50	40

NOTE:
Day Time : 06.00 Hr. – 22.00 Hr.
Night Time : 22.00 Hr. – 06.00 Hr.

Report Prepared By:

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Reviewed & Authorized By

Benimadhab Gorai, Chemist
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DOC NO : QLS/SAMP/08-C/00

TEST REPORT

Name & Address Of the Customer :		
M/s. Rashmi Green Hydrogen Steel Pvt Ltd. Khatranga, Changual, Gopinathpur Kharagpur, Paschim Mednipur, West Bengal-721301	Report No. Date Sample No. Sample Description Date of performance Ref No. Date	: QLS/P-86/23-24/C/10 : 11.08.2023 : QLS/P-86/23-24/10(A-J) : Illumination Intensity Monitoring : 09.08.2023-11.08.2023 : 5400012651, : Dated – 05.08.2023

Result of Illumination Intensity Monitoring

Sampling Done By: B.Mondal

SL.No	Date of Monitoring	Location	Lux in Average
10A	07.08.2023	Hot Mill-2	336
10B		Hot Mill-3	291
10C		Surface Treatment Plant Area	327
10D		Chemical Lab	319
10E		Store Area	310
10F		Admin Building	356
10G		Surface Treatment Area	278
10H		Finish Product Area	275
10I		Hot Mill-1	294
10J		Pilgar Production Area	268

Illumination Standard - IS 6665 : 1991	
Location	*Average illumination in Lux*
Blast Furnace & Slab yards working areas, Mechanical workshop, Pump House, Stairs & Floors	*100*
Control Room, Control Desks	*200-300*
Conveyors	*50-100*
Outdoor of factory: *Stock Yard, Main Entrance /Exit areas, Road, Parking Areas*	*20*
Laboratories and Test rooms	*300-450*

Report Prepared By :

for Qualissure Laboratory Services
Reviewed & Authorized By

Benimadhab Gorai, Chemist
(Authorized Signatory)

—— End of the Report ——

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RISK ASSESSMENT

As a consequence of health and safety awareness many measures are being taken to ensure the security of an individual working in the industrial premises. Risk assessment follows an extensive hazard analysis. Risk is defined as a likelihood of an undesired event (accident injury or death) occurring within a specified period or under specified circumstances. This may be either a frequency or a probability depending on the circumstances.

In the working atmosphere, it is not possible to avoid or eliminate risk factor completely. However it is possible to minimize the risk factor to minimal or acceptable level.

The simple six-step risk assessment process includes:

1. Identification of a hazard
2. Identification of the associated risk
3. Assessment of the risk, which includes:
    1. The likelihood
    2. The severity
    3. Assigning a priority for correction
4. Control of the risk, which includes:
    5. Elimination
    6. Engineering a barrier
    7. Administration controls
    8. Personal protection equipment
9. Documentation of the process.
10. Monitoring and review of the process.

HIRA study has been carried out by M/s Rashmi Green Hydrogen Steel Private Limited. Hazard is a source or situation that has the potential for harm in terms of human injury, ill health, damage to property or the environment or a combination of these factors. It has got a short or a long-term effect on the work environment with considerable human and economic costs. A hazard can have a potential to create an emergency like situation at the work place. Hazard is a potential cause to generate a disaster. Hazards exist in every workplace in different forms and required to be identified, assessed and controlled regarding the work processes, plant or substances. They arise from"

1. workplace environment,

2. Use of plant and equipment,
3. Use of substances and materials,
4. Poor work and/or plant design,
5. Inappropriate management systems and work procedures, and
6. Human behaviour.

Steel plant has many hazardous processes and operations which can cause considerable environmental, health and safety risk to the workforce. All the hazards cause potential risk to the work environment which include work force and work place and hence need proper assessment.

During the process of manufacture of steel and other associated materials hazardous wastes are generated which are stored and used within the plant process as per the solid and hazardous waste management plan discussed in Section 2.3 of Chapter-2. The major chemicals handled/stored by the plant include HSD, LDO, HFO, HCL & H_2SO_4. In view of this, proposed activities are being scrutinized in line of the above referred "manufacture, storage and import of hazardous chemicals rules" and observations / findings are presented in this chapter.

Identification of a hazard and associated risk in Integrated Steel Plant

The following two methods for hazard identification have been employed in the study:

1. Identification of major hazardous units based on manufacture, storage and import of hazardous chemicals rules, 2008 and storage units based on relative ranking technique, viz. fire-explosion and toxicity index (FE&TI).
2. Identification of hazardous units and segments of plants based on FMEA.

Classification of major hazardous substances

Hazardous substances may be classified into three main Classes namely flammable substances, unstable substances and toxic substances. The ratings for a large number of chemicals based on flammability, reactivity and toxicity have been given in NFPA Codes 49 and 345 M. The major hazardous materials to be stored, transported, handled and utilized within the facility have been summarized in the **Table No. C7-3**. The fuel storage details and properties are given in **Table No. C7-4** and **Table No. C7-5** respectively.

Table No. C7-3: Category Wise Schedule of Storage Tanks

Materials	Hazardous Properties
HSD	U 1202. Dangerous Goods Class 3 – Flammable Liquid
LDO	U 1203. Dangerous Goods Class 3 – Flammable Liquid

HFO	Dangerous Goods class 3 - Flammable Liquid
H_2So_4	CAS Number 7664-93-9 (UN no. 3264- Corrosive liquid, acidic; Hazard Class -8)
HCL	CAS Number - 7647-01-0(UN no. 1789- Corrosive liquid, acidic; Hazard Class -8)

Table No. C7-4: Hazardous Materials Stored, Transported and Handled

S. No.	Material	No. of Tanks	Capacity (Storage Condition)
1	HSD	5	1000 KL
2	LDO	4	200 KL
3	HFO	4	600 KL
4	HCL/ H_2SO_4	6	300 KL

Table No. C7-5: Properties of Fuels Used in the Plant

Chemical	Codes/ Label	TLV	FBP	MP	FP	UEL	LEL
			°C			%	
HSD	Flammable	-	371	-	54.4	6	0.7
LDO	Flammable	5 mg/m^3	400	-	98	7.5	0.6
HFO	Flammable	5 mg/m^3	350	-26	66	6.0	0.5
HCL	Corrosive -Toxic	5 mg/m^3	108	-26	-	-	-
H_2SO_4	Corrosive -Toxic	5 mg/m^3	337	10	-	-	-

TLV : Threshold Limit Value FBP : Final Boiling Point

MP : Melting Point FP : Flash Point

UEL : Upper Explosive Limit LEL : Lower Explosive Limit

Identification of Major Hazard Installations Based On GOI Rules, 2008

Following accidents in the chemical industry in India over a few decades, a specific legislation covering major hazard activities has been enforced by Govt. of India in 2008 (In suppression of 1989) in conjunction with Environment Protection Act, 1986. This is referred here as GOI Rules 2008. For the purpose of identifying major hazard installations, the rules employ certain criteria based on toxic, flammable and explosive properties of chemicals.

A systematic analysis of the fuels/chemicals and their quantities of storage has been carried out, to determine threshold quantities as notified by GOI Rules, 2008 and the applicable rules are identified. Applicability of storage rules are summarized in **Table No. C7-6**.

Table No. C7-6: Applicability of GOI Rules to Fuel Storage

S. No.	Chemical/Fuel	Listed in Schedule	Total Quantity	Threshold Quantity (T) for Application of Rules	
				5,7-9,13-15	10-12
1	HSD	3(PART II)	1000 KL	25 MT	200 MT
2	LDO	3(PART II)	200 KL	25 MT	200 MT

3	HFO	3(PART II)	600 KL	25 MT	200 MT
4	H_2SO_4	3 (PART I-Group 2)	100 KL	5 T	50 T
5	HCL	3 (PART I-Group 2)	200 KL	25 T	250

Hazard Assessment and Evaluation

Methodology & Hazard Assessed

An assessment of the conceptual design is conducted for the purpose of identifying and examining hazards related to feed stock materials, major process components, utility and support systems, environmental factors, proposed operations, facilities, and safeguards.

In the proposed steel plant, large amounts of material are processed, transported and conveyed by massive equipment. The major chemicals handled/ stored by the plant include HSD, LDO, HFO, HCL, H_2SO_4 etc. Due to massive equipment and movement of large masses of materials, workers are exposed to the heat of molten metal and slag at temperatures up to 1800°C, toxic or corrosive substances, respirable air-borne contaminants and noise.

Burns may occur at many points in the steel-making process: at the front of the furnace during tapping from molten metal or slag; from spills, spatters or eruptions of hot metal from ladles or vessels during processing, teeming (pouring) or transporting; and from contact with hot metal as it is being formed into a final product.

Water entrapped by molten metal or slag may generate explosive forces that launch hot metal or material over a wide area. Inserting a damp implement into molten metal may also cause violent eruptions.

Mechanical transport exposes workers to potential struck-by and caught-between hazards. Overhead travelling cranes are found in almost all areas of steel works. Most large works also rely heavily on the use of fixed-rail equipment and large industrial tractors for transporting materials.

Large quantities of greases, oils and lubricants are used and if spilled can easily become a slipping hazard on walking or working surfaces.

Sharp engines or burrs on steel products or metal bands pose laceration and puncture hazards to workers involved in finishing, shipping and scrap-handling operations.

Foreign-body eye hazards are prevalent in most areas, especially in raw material handling and steel finishing, where grinding, welding and burning are conducted.

Preliminary Hazard Analysis (PHA)

A preliminary hazard analysis is carried out initially to identify the major hazards associated with storages and the processes of the plant. This is followed by

consequence analysis to quantify these hazards. Finally, the vulnerable zones are plotted for which risk reducing measures are deduced and implemented.

The hazard shall be higher for workers directly exposed to coal handling areas where not only the danger due to failure of machinery but also inhalation of dust exists. In other areas where heat generating equipment such as boiler and steam conduits are there, the risks pertain to exposure to heat and hazard of explosion due to high pressure. Several examples of hazards that may be found are:

1. Unguarded rotating, reciprocating and similar moving parts.
2. Flammable liquids in the presence of ignition sources.
3. Un-labelled containers of hazardous chemicals.
4. Noise with the potential to damage hearing.
5. Poorly designed tools having the potential to cause injury.
6. Degraded and worn hand tools.
7. Waste oil on the floor, causing a slipping hazard.

Preliminary hazard analysis (type of likely hazards and possible areas where this can occur) for fuel storage area and whole plant is given in **Table No. C7-7** and **Table No. C7-8**.

Table No. C7-7: Preliminary Hazard Analysis for Storage Areas

Unit	Capacity	Description of Plausible Hazard	Impact
HSD	1000 KL	Pool fire/fire ball may occur due to rupture in the tank and subsequent release and instantaneous ignition.	Fire/Explosion
LDO	200 KL	Pool fire/fire ball may occur due to rupture in the tank and subsequent release and instantaneous ignition.	Fire/Explosion
HFO	300 KL	Pool fire/fire ball may occur due to rupture in the tank and subsequent release and instantaneous ignition.	Fire/Explosion
HCL	150 KL	Chemical Spills from H_2SO_4, HCL, tank	Acid burn to nearby employee due to leakage of acid. Also exposure to fume affecting health of person
H_2So_4			

Table No. C7-8: Likely Hazards in the plant and their location

Unit	Description of Plausible Hazard	Impact
LD/BOF	1. Fire & Explosion due to Molten metal contact with water.	Fire/Explosion due to core damage and hot

Unit	Description of Plausible Hazard	Impact
	2. Molten Metal Spillage **3.** Steam Explosion **4.** Hot LD Slag **5.** Extreme Temperature **6.** Exposure to controlled and uncontrolled energy sources **7.** Moving machinery, on-site transport, forklifts and cranes **8.** Falls from height **9.** Hot Metal transfer	metal spillage; Burn/ injuries because of steam leakage, fatal due to collapsing of cranes and electrical shock, eye irritation due to dust.
Rolling Mill	1. Fire in rolling mill due to hydraulic oil cellar. 2. Spillage of acid tank 3. Slippery surface because of heavy use of lubricant 4. Steam explosion 5. Manual handling and repetitive work	Fire; Burn injuries, health problem, injury, skin allergy, electric shock
MBF with PCM	1. Fire & Explosion due to Molten metal contact with water. 2. Molten Metal Spillage 3. Steam Explosion 4. Hot MBF Slag 5. Break out in PCM 6. Extreme Temperature 7. Exposure to controlled and uncontrolled energy sources 8. Moving machinery, on-site transport, forklifts and cranes 9. Falls from height 10. Hot Metal transfer	Fire/Explosion due to core damage and hot metal spillage; Burn/ injuries because of steam leakage, fatal due to collapsing of cranes and electrical shock, eye irritation due to dust
Sinter Plant	1. Fire in Coal stock yard 2. Noise and vibration 3. Exposure to controlled and uncontrolled energy sources 4. Moving machinery, on-site transport, forklifts and crane 5. Inhalable agents (gases, vapours, dusts and fumes) 6. Falls from height	
Pellet plant	1. Moving Equipment Parts 2. Smoke/ Dust 3. Inhalable agents (gases, 4. Vapours, dusts and fumes) 5. Falls from height 6. Extreme temperatures 7. Moving machinery, on-site transport (conveyor belt)	

Unit	Description of Plausible Hazard	Impact
	8. Fire & Explosion	
Oxygen Plant	**1.** Frost Bite because of cryogenic liquid **2.** Leakage in Oxygen Tank **3.** Asphyxiation due to leakage of nitrogen in work place	Fire & Explosion; Frost Bites, Suffocation health issue
Coke oven Plant	**1.** Leakage of poisonous gas Dust	Leakage of Gas can cause Gas Poisoning to employee
P. Gas Plant	Release of untreated waste water	Pollution of surface water
Power Plant	1. Bursting of boiler due to steam leakage, poor quality of water having high TDS and welding route failure 2. Fire in Coal stock yard 3. Electrical burns and electric shock (short-circuit); 4. Noise and vibration 5. Slips, trips and falls on the same level 6. Bursting of transformer, switch gear 7. Failures due to automation	Explosion, Fire, Fatal; Ear damage, electric shock
Di Pipe Plant	1. Inhalable agents (gases, vapours, dusts and fumes) 2. Exposure to controlled and uncontrolled energy sources 3. Molten Metal Spillage 4. Moving machinery, on-site transport, forklifts and cranes. 5. Hot Rejected DI Pipe scraps 6. Break out in cement slurry pump	Fire / Explosion due to core damage and hot metal spillage; Burn/ injuries because of steam leakage, fatal due to collapsing of cranes and electrical shock , eye irritation due to dust
Ferro Alloy Plant	**1.** Recirculating cooling water coming in contact with the molten iron or slag. **2.** Oil temperature being very high in transformer causing bursting of transformer **3.** Inhalable agents (gases, vapours, dusts and fumes) **4.** Exposure to controlled and uncontrolled energy sources **5.** Molten Metal Spillage **6.** Moving machinery, on-site transport, forklifts and cranes	Spurting of metal/slag; Sudden flashing of fire or bursting;
Transportation of material	1. High concentration of traffic during duty hours 2. Heterogeneous traffic 3. Violation of traffic rules/speed limit 4. Road Condition 5. Condition of vehicle	Accident and fatal.

Table No. C7-9: The Brief about nature of Hazards in the plant

Hazard	Probable Locations
Mechanical	Coal Crushing Plant, LD/BOF, Continuous Casting Machines, Rolling Mills etc.
Fire & Explosion	Boiler House, Coal Storage Area, Coal Crushing Plant, Blast Furnace, LD/BOF, Continuous Casting Machines, Rolling Mills, Boiler House, Sinter Plant etc.
Electrical	TG Area, Electrical Substation, Rolling Mills etc.
Chemical	Treatment plants, CPP, Pump House

Fire Explosion and Toxicity Index (FE&TI) For Storage Unit

Dow's Fire and Explosion Index (F and E) is a product of Material Factor (MF) and hazard factor (F3) while MF represents the flammability and reactivity of the substances, the hazard factor (F3), is itself a product of General Process Hazards (GPH) and Special Process Hazards (SPH). The application of FE & TI would help to make a quick assessment of the nature and quantification of the hazard in these areas. However, this does not provide precise information. The degree of hazard potential is identified based on the numerical value of F&EI as per the criteria given below:

F&EI Range	Degree of Hazard
0-60	Light
61-96	Moderate
97-127	Intermediate
128-158	Heavy
159-up	Severe

By comparing the indices F&EI and TI, the unit in question is classified into one of the following three categories established for the purpose (**Table No. C7-10**).

Table No. C7-10: Fire Explosion and Toxicity Index

Category	Fire and Explosion Index (F&EI)	Toxicity Index (TI)
I	F&EI < 65	TI < 6
II	65 < or = F&EI < 95	6 < or = TI < 10
III	F&EI > or = 95	TI > or = 10

Certain basic minimum preventive and protective measures are recommended for the three hazard categories.

Results of FE and TI for Storage Unit

Based on the GOI Rules 2008, the hazardous fuel used by the operational plant is identified. Fire and explosion are the likely hazards, which may occur due to the fuel storage. Hence, fire and explosion index has been calculated for in plant storage.

The Health (Nh), Flammability (Nf), Reactivity (Nr), and MF (Material Factor) for all the materials under consideration was derived from NFPA (National Fire Protection Association) codes. The GPH (General Process Hazard Factor) and SPH (Specific Process Hazard Factor) was calculated accordingly. Based on F&EI (Fire and Explosion Index), the HSD will come in light degree of hazard and nil toxicity. Thus, Risk Assessment and Hazard analysis has been carried out due to fire hazard for HSD tanks by carrying out MCA (Maximum Credible Accident) analysis for the same. Estimates of FE&TI are given in **Table No. C7-11**.

Table No. C7-11: Fire explosion and toxicity index results

Fuel	Total Capacity	NFPA Classification				GPH	SPH	F&EI	F & E Category	**TI	Toxicity Category
		N_h	N_f	N_r	MF						
HSD	5 x 200 KL	0	2	0	10	2	2.2	28.8	**Light**	**NIL**	-
LDO	2 x50 KL	0	2.5	0	9	1	1.1	14.4	**Light**	**NIL**	
HFO	4 x150 KL	0	2	0	8	1	1	13.1	**Light**	**NIL**	

Results of FE&TI analysis show that the storage of HSD falls into Light category of fire and explosion index.

Failure Mode Effect Analysis for Process Units

Failure mode effects analysis (FMEA) is one of the most important and widely used tools for reliability analysis. FMEA identifies corrective actions required to reduce failures to assure the highest possible yield safety and reliability. Even though it is widely used reliability technique it has some limitation in prioritizing the failure modes and output may be large for even simple systems, may not easily deal with time sequence, environmental and maintenance aspects.

Risk Priority Number

Risk priority number methodology is a technique for analysing the risk associated with potential failures during a FMEA analyses. To calculate risk priority number severity, occurrence and detection are the three factors need to determine.

RPN= Severity× Occurrence× Detection

Severity (S)

Severity is the seriousness of the effect of potential failure modes. Severity rating with the higher number represents the higher seriousness or risk which could cause death.

Table No. C7-12: Example table of Severity

Rating	Detection	Detection by design control
10	Absolute uncertainty	Design control cannot detect failure mode
9	Very remote	Very remote chance the design control detect failure mode
8	Remote	Remote chance the design control detect failure mode

7	Very low	Very low chance the design control detect failure mode
6	Low	Low chance the design control detect failure mode
5	Moderate	Moderate chance the design control detect failure mode
4	Moderately high	Moderately high chance the design control detect failure mode
3	High	High chance the design control detect failure mode
2	Very High	Very high chance the design control detect failure mode
1	Almost certain	Design will control detect failure mode

Occurrence (O)

Occurrence ratings for FMEA are based upon the likelihood that a cause may occur based upon past failures and performance of similar system in similar activity. Occurrence values should have data to provide justification.

Table No. C7-13: Example table of Occurrence

Rating	Classification	Example
10 9	Very high	Inevitable failures
8 7	High	Repeated failures
6 5	Moderate	Occasional failures
4 3	Low Remote	Few failures
2 1	Remote	Failures unlikely

Detection (D)

Detection is an assessment of the likelihood that the current controls will detect the cause of failure mode.

Table No. C7-14: Example table of Detection

Rating	Classification	Example
10	Hazardous without warning	Very high severity without warning
9	Hazardous with warning	Very high severity with warning
8	Very high	Destructive failure without safety
7	High	System inoperable equipment damage
6	Moderate	System inoperable with minor damage
5	Low	System inoperable without damage
4	Very low	Degradation of performance
3	Minor	System operable with some degradation in performance
2	Very minor	System operable with minimal interference
1	None	No effect

FMEA Implementation

Failure mode effect analysis is executed by a multidisciplinary team of experts in blast furnace operation with the help of process flow chart. Criteria of ranking of severity, occurrence and detection are selected suitably by analysing the past failure records of the furnace. Using values of severity, occurrence and detection number risk priority number is calculated and tabulated in **Table No. C7-15**.

Table No. C7-15: RPN for Proposed Project & Proposed Control Measures

BLAST FURNACE									
Components/ Process	**Failure Mode**	**Failure Effect**	**Failure Cause**	**Control**	**S**	**O**	**D**	**RPN**	**Additional Control**
Bleeder valves	Failed to Operate	Explosion	Corrosion	Reliable Supplier	10	2	3	60	Periodic Maintenance
Conveyor feed belt	Friction	Fire	Improper Maintenance	Belt Sway Switch	8	2	2	32	Lubricating the rotating parts regularly
Cold blast Blower	Flow Pressure Increase	Rupture in stove	Failure of valves	Flow meters	8	1	2	16	Interlock system
Hot blast Blower	Stove shell crack	Fire &Explosion	Excess Temperature	Thermocouple	9	1	2	18	Periodic Maintenance
Blast Furnace gas	Pipeline rupture	CO poisoning	Over Pressure	Detectors	10	2	2	40	Provide detectors with alarm system
Oxygen Injection	Pipeline rupture	Fire &Explosion	Over Pressure	Detectors	10	2	2	40	Provide detectors with alarm system
Cooling water supply pump	Pump failure	Explosion	No power supply	Redundant power supply	10	3	2	60	Check the fuel level of diesel generator
Tapping hose	Oxygen hose cut	Fire	Ageing	Reliable Supplier	8	4	4	128	Change hose periodically
Hot metal lifting by crane	Rope breakage	Hot Metal ladle down	Overloading	Safe working load is marked	9	3	2	54	Interlocks with alarm
Hot metal transfer by trolley	Mechanical Failure (Gearbox, Axial, Wheel)	Spillage of hot metal	Improper Maintenance	ROW (3 m) marked, cover ladle, loading within Granted permissible limit	9	3	2	54	Regular inspection and Periodic maintenance
Gas cleaning filter bags	Filter bags failure	Improper gas cleaning	Excess Temperature	Monitoring system	4	3	3	36	Regular inspection and Periodic maintenance
Lancing Hose	Tuyers puncture	Burns	Ageing	Reliable Supplier	5	4	4	80	Check defects before use
Butterfly valve to regulate flow	Valve partially closed	CO Poisoning	Dust	Air-line respirators	9	3	2	54	Periodic Maintenance

Steam Injection	Pipeline cracks	Burns	Excess pressure	Line Inspection	7	2	3	42	Display cautionary notice
SINTER PLANT									
Conveyor feed belt to sinter plant	Friction	Fire	Improper Maintenance	Belt Sway Switch	8	2	2	32	Lubricating the rotating parts regularly
Pneumatic lime transportation system	Failed to Operate	Spillage of Hot Lime	Improper Maintenance	Monitoring system	8	2	2	32	Regular inspection and Periodic maintenance
Automatic lubricating system	Failed to Operate	Mechanical Failure	Improper Maintenance	Monitoring system	4	2	3	24	Periodic Maintenance
Double cone dust valves	Failed to Operate	Improper dust cleaning	Corrosion	Reliable Supplier	3	2	4	24	Periodic Maintenance
Mixed gas injection	Pipeline rupture	Fire & Explosion	Over Pressure	Detectors	6	2	3	36	Provide detectors with alarm system
Sinter Cooler	Failed to Operate	Combustion failure in Sinter	Improper Maintenance	Monitoring system	4	2	3	24	Regular inspection and Periodic maintenance
DIP PLANT									
Conveyor feed belt	Friction	Fire	Improper Maintenance	Belt Sway Switch	8	2	2	32	Lubricating the rotating parts regularly
Magnesium treatment	Pipelines crack	Explosion	Excess Pressure	Line Inspection	7	2	3	42	Display cautionary notice
Cooling water supply pump	Pump Failure	Explosion	No power supply	Redundant power supply	10	4	2	80	Check the fuel level of diesel generator&provision for stand by pump
Core making jets	Operational Failure	Injury	Improper Maintenance	Belt Sway Switch	6	6	2	72	Periodic maintenance
Steam Injection Heat Treatment)	Pipelines crack	Burns	Excessive Pressure	Line Inspection	7	2	3	42	Display cautionary notice
Cement spraying Nozzle	Pin Holes	Gas temperature increase	Spraying cement excessively	Monitors	7	3	2	42	Check the level for every 5 minutes
Gas Cleaning filter bags	Filter bags failure	Improper gas	excess	Monitoring system	4	3	3	36	Regular inspection

		cleaning	Temperature						
Bitumen spraying Nozzle	Pin Holes	Gas temperature increase	Spraying Bitumen excessively	Monitors	8	8	2	32	Check the level for every 5 minutes
CONTINUOUS CASTING MACHINE									
Ladle car	Friction	Fire	Improper Maintenance	Belt Sway Switch	8	2	2	32	Lubricating the rotating parts regularly
Stopper	Mechanical Failure	Fire & Explosion	Improper Maintenance	Indicator	7	2	2	28	Regular Inspection
Tundish	Failed to Operate	Spillage of Hot liquid metal	Mechanical Failure	Line inspection	7	2	2	28	Regular inspection and Periodic maintenance
FERRO ALLOY PLANT									
Furnace	Recirculating cooling water coming in contact with the molten iron or slag	Spillage of Hot Spurting of metal/slag. Explosion under extreme cases.	Leakage of water from the refractory walls Operate	Line inspection	8	2	2	32	Regular inspection and Periodic maintenance
Furnace	Presence of Oil & Grease and other impurities	Sudden catching of fires and flames	Improper Maintenance	Inspection	4	3	3	24	Periodic Maintenance
Moving Machinery, onsite transport, forklifts & crane	Mechanical Failure	Conveying System Failure	Improper Monitoring	Inspection	5	3	3	45	Periodic Maintenance & Mechanical Strength testing
Tapping	Line failure	Hot Metal spillage	Improper alignment	Inspection	9	3	2	54	Periodic inspection and continuous observation
Transformer	Oil spillage & Overheating	Bursting	Excess connected load	Inspection	5	3	3	45	BDB testing of transformer oil and maintenance of bushing and radiator.
OXYGEN PLANT									
Air feed	Pipeline rupture	Operation failure	Improper Maintenance	Detectors	4	3	2	24	Provide detectors with alarm system

Boiler	Tube Alignment & Setting	Deformation of vibration Arrestor	Vibration increases	Inspection	6	2	4	48	Periodic Maintenance
Boiler	Incomplete Combustion	Air Fuel Losses	Insufficient air supply to Furnace	Line inspection	5	2	5	50	Regular inspection
Turbine/Steam Generator	Temp of Super Heater & Reheater	Failure of turbine blades	Changing the plant load	Line inspection	5	2	6	60	Periodic Maintenance
Turbine/Steam Generator	Loss of fuel	Abnormal Combustion	Improper air fuel mixture	Monitors	4	3	4	48	Check the level for every 5 minutes
Water Tank	Water Level of Drum	Excess Steam Pressure	Failure of Indicators	Monitor	6	3	2	36	Regular inspection
L D CONVERTER									
Flow monitoring switch	Failure to operate	Rupture in Current Flow	Switch broken	Reliable Supplier	7	2	3	42	Regular Inspection
Direction Control Valve	Failure to operate	furnace tilting control failure	Corrosion	Reliable Supplier	7	2	3	42	Periodic Maintenance and replacement before cut-off date
Flow regulating valves in furnace	Failed to Operate	Excessive Temperature	Improper Maintenance	Indicator	8	3	4	96	Periodic Maintenance and replacement before cut-off date
Hot metal lifting by crane	Rope breakage	Hot Metal ladle down	Overloading	Safe working load are marked	9	3	2	54	Interlocks with alarm and replacement of safety item (hook, rope, belt etc.) before cut-off date. Avoid overloading.
Hot metal transfer by trolley	Mechanical Failure (Gearbox, Axial, Wheel)	Spillage of hot metal	Improper Maintenance	ROW (3 m) marked, cover ladle, loading within Granted permissible limit	9	3	2	54	Regular inspection, periodic maintenance and replacement of movable item before cut-off date. Avoid overloading
PELLET PLANT									
Conveyor Belt to Travelling Gate	Friction	Corrosion	Improper Maintenance	Belt Sway Switch	8	2	2	32	Lubricating the rotating parts

									regularly
Coal /Producer Gas injection to indurating furnace	Pipeline rupture	Fire & Explosion	Over Pressure	Detectors	8	2	2	32	Provide detectors with alarm system
Producer Gas Plant									
Air Injection	Pipeline rupture	Operation failure	Improper Maintenance	Detectors	7	3	2	42	Provide detectors with alarm system

Result of FEMA for Process Unit:

1. In blast furnace, highest value of risk priority number is obtained for tapping process. However, the control measures like change of hose periodically by purchasing it from the reliable supplier shall minimize the risk probability.

2. The hot metal from MBF/Induction Furnace is transported by crane/ trolley which carry moderate risk priority number. This will be well equipped with the interlocking facility with alarm in case of any overloading. Moreover, proper marking with ROW of 3 m will be made along with all safe guards to ensure the absence of water throughout the hot metal transfer route.

The mitigation measures suggested for the identified risk are tabulated in **Table No. C7-16.**

Table No. C7-16: Potential Hazard/Source and Mitigation measures

Type of Hazard	Source	Risk related to Hazard	Mitigation measures
Heat	Ferro, Pellet, Sinter, LD, Furnace (Molten metal and hot surfaces), CCM and Process of rolling, Slag disposal area, WHRB and Sinter	Burn/ Heat stress	Use of helmet, heat resistant clothing, heat resistant gloves, Use of Goggles by the workers. Workers are advised to work at a distance of 4m from the molten metals. Rotation of workers on shift basis.
Dust and Gaseous emission	Pellet, Furnace (MBF, LD & Ferro) CCM and Process of rolling, Slag disposal area, WHRB & Sinter plant, Raw material and product storage yard, Transportation of raw material.	Pulmonary disease	Use of Nose Mask, Water sprinkling arrangement at requisite places, Provision of Bag filters and dust extraction system as required. Stack monitoring and work zone monitoring to ensure the gaseous emission and dust emission within the prescribed standard.
Electrical	Furnace, Motors, Panels, Sub Station; Electrically operated equipment	Electrical shock and burn	Electrical area to be separated and access given to authorized personnel. Spark proof motors used. Insulated cover provided in the electrical area. Proper earthling has been provided.
Explosion	Molten metal, Contaminated scrap handling, During Casting	Burn, Injury	Use of contaminated scrap is completely avoided Combustible and flammable material to be separated from the molten metal area.

Accident related to fall of machinery	Moving machinery, on-site transport, forklifts and cranes	Injury	Safety check of operation of equipment at regular intervals. Properly trained workers appointed to operate machineries, Workers working with cranes will be provided with all PPEs with safety belts.
Storage & Handling of HSD, LDO	Leak, Spill, Fire explosion, Toxicity	Injury, Burn	PPEs provided to the personnel working in the area. Fire extinguishers provided
Noise &Vibration	Rolling Mill, DG Set, Furnace operation, melting process, Crushing, fuel burners, raw material, scrap and product handling, rotating equipment, furnace charging.	Hearing loss/ Fatigue	Noise monitoring, Audiometric examination of workers, Workers provided with PPE like ear plug, muff isolation, substitution and engineering control installation of acoustical hood, rotation of workers and minimize the time enclose fans, insulate ventilation pipes, cover and enclose scarp and storage.

Risk Control

1. On Site Emergency Planning

The onsite emergency plan would be related to the final assessment and it is the responsibility of the management to formulate it. The plan must therefore, be specific to the site.

The plan sets out the way in which designated people at the site of the incident initiate supplementary action at an appropriate time. Designated people may or may not be from amongst the workers. An essential of the plan is the provision for making the affected unit safe, for example, by shutting it down. The plan also contains the full sequence of key personal to be called in from other sections or from off site.

Aspects to be included in an onsite emergency plan: some of the aspects to be included in onsite emergency plan are as follows.

1. Safety Measures

The work place and surrounding area are needed to kept clean and free from all obstructions. Solid waste, Hazardous waste like oily cotton, oily rags and empty barrels are properly stored away from any source of fire. Spill of oil and grease is immediately cleaned to reduce accidental fall.

2. Loading and transportation of Materials

1. Overloading of the trucks will be strictly prohibited and material will be properly distributed and tied as far as possible.

2. Care would be taken during the loading of heavy billets by crane. Supervision of the crane movement to be given importance by the safety supervisor of the industry.

3. Care to be taken by the drivers while moving back to avoid any accident.

4. The maximum speed limit of the heavy vehicle is <20 km/ hr.

1. **Operating Machineries**

1. Only the authorized person should operate the machine or equipment.

2. The repairing, cleaning and oiling of machineries will be done when the machineries are not in use.

3. Before switching on electricity, gas, acid, air or gas presence is ensured to be negligible by the safety supervisor that no person should be injured nearby.

4. All the exposed part of the moving machines like pully, belt, chains, and rotating collars is properly guarded.

5. The machine guard and safety device is confirming the statutory provisions required for the machine.

6. No person allowed standing in unsafe position while a Bucket (for Scrap or Sponge) is being loaded or unloaded by crane.

7. No person is allowed to stand in unsafe position while a Scrap or Sponge is being loaded or unloaded by Magnets though EOT crane.

8. No one will ride, stand or walk under load suspended from cranes.

9. When any defect is observed in a crane, it will be immediately reported to the officer/supervisor concerned for repair.

10. A crane driver will not make a lift without standard signals from the person with the job and he will take signal only from one person at a time. All persons in places over which crane is operating, will listen for crane bells and other signalling devices.

2. **Vehicular Traffic**

1. All vehicles will comply with all the traffic regulations within the plant and they will not exceed the safe speed limits i.e. 20 km/ hr.

2. Sitting on the side flaps or standing in a truck while in motion is strictly prohibited.

3. Overloading of the trucks are strictly prohibited.

2. **Offsite emergency plan**

The offsite emergency plan is an integral part of any major hazard control system. It should be based on those accidents identified by the works management, which could affect people and the environment outside the works. Thus, the Off Site Plan follows logically from the analysis that took place to provide the basis for the On Site Plan and the two plans should therefore complement each other. The key feature of a good off site emergency plan is flexibility in its application to emergencies other than those specifically included in the formation of the plan. The role of various parties that may be involved in the implementation of an offsite plan has been described below. The responsibility for the off site plan will be likely to rest either with the works management or with the local authority.

Aspects to be included in an offsite emergency plan: some of the aspects to be included in offsite emergency plan are as follows.

Emergency Control Centers

The emergency control center is the place from which the operations to handle the emergency will be directed and coordinated. It has been attended by the site work main controller, key personnel and the senior officers of the fire and police services.

Emergency control center had therefore contained the following:

1. An adequate number of external telephones.
2. An adequate number of internal telephones
3. A plan of the workers to show
4. Areas where there are inventories of HSD and chlorine
5. Sources of safety equipment
6. Fire hydrant system and alternate supply sources
7. Assembly point, First-aid centre/ casualty treatment centre
8. Truck parking information
9. A nominal roll of employee
10. List of personnel with addresses telephone numbers
11. Specialized monitoring equipment will be available at all the sensitive points to deal with small to medium spillages of the chemical.
12. The equipment operators must be trained in development of the equipment.

General Safety Rules

At the proposed plant where fuels chemicals and other materials are reactive in nature following general guidelines will be made.

1. Fitting dress and use of personnel protective equipment recommended for respective job has been adhered to by everyone.

2. All unsafe conditions or natural occurrences have been reported promptly to the supervisor/ head of the department of safety.

Personal Protective Equipment (PPE)

Personnel protective equipment play vital role in reducing the losses in case of an accident. They provide protection to the workmen from injuries during the execution of job. The various protective equipments are suggested as below.

Gloves and protective clothing: Since the chemicals are very corrosive and toxic, those called upon to handle has been provided with gloves and protective clothing.

Safety Helmets: Every one inside the plant and the visitors has to wear safety helmet.

Safety Belts: Safety belts provide protection in case of fall while working at height.

Safety Shoes: Every one inside the plant and the visitors wears safety shoes for protecting their toes and heels. The material of the shoes is resistant to the type of chemicals and heat within the plant.

Safety goggles and face shields: Suitable goggles protect the eyes from flying objects and harmful rays of welding and furnace flames and also heat, dust and chemicals substances. Standard welders goggles, face shield or hood has been used by the workers and helpers while involved in operations, wherever applicable.

DISASTER MANAGEMENT PLAN

Disaster can be natural or manmade which have a negative impact on society or environment or both.

1. Natural Disasters

A natural disaster is the consequence of a natural hazard (e.g. earthquake, flood, tsunami, hurricane etc) which affects humans. The damage is caused by the lack of appropriate emergency management leading to financial, environmental and human life loss. Due to the location of this plant, earthquake is the first and foremost natural hazard followed by flooding.

This area is not near the coast and thus, is not affected by tsunamis or hurricanes.

2. Man-made disasters

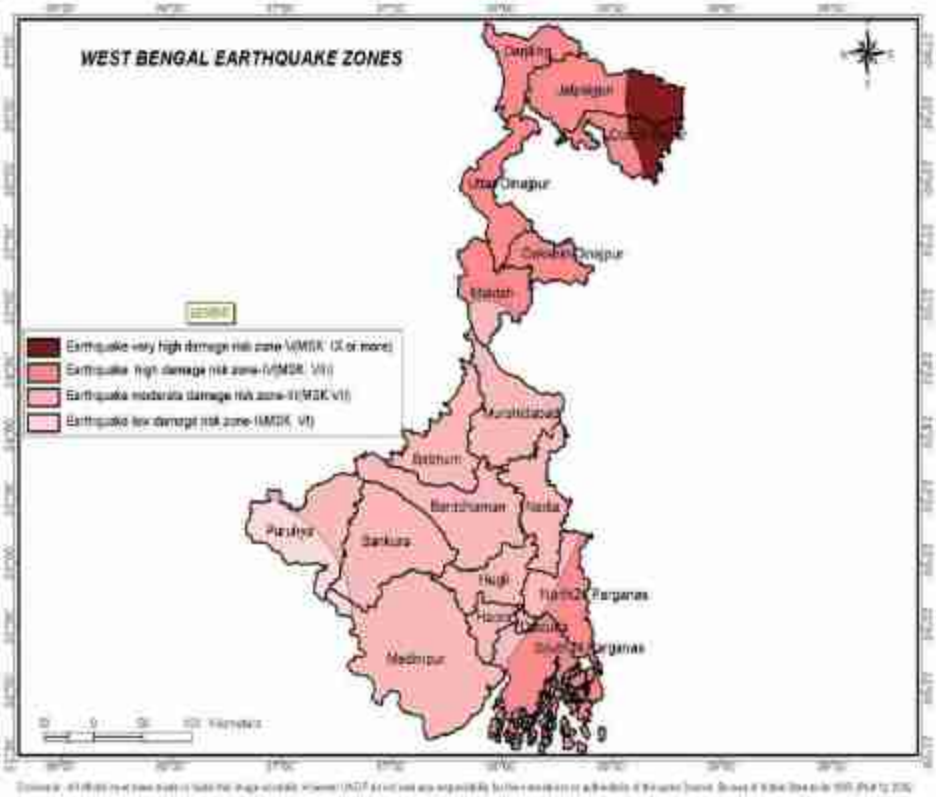
The man-made disasters are caused by human action, negligence, error, or involving the failure of a system. Human-made disasters are in turn categorized as technological disaster. Technological disasters are the results of failure of technology involving material, design, system or operational failures.

Natural Disasters

Seismic & Earthquake risk management

According to GSHAP data, the state of West Bengal falls in a region of low seismic hazard in the south-west that rises steadily towards the east and the north of the state. As per the 2002 Bureau of Indian Standards (BIS) map, this state also falls in Zones II, III, IV & V Historically, parts of this state have experienced seismic activity in the M5.0-6.0 range.

The earthquake hazard map from National Disaster Management Agency is given in **Fig. No. C7-4**.



***Source**:http://wbdmd.gov.in/Pages/earth_mapping.aspx;accessed16.05.2022)*

Fig. No. C7-4: Earthquake Hazard Map of West Bengal

No major earthquake has been noticed in West Bengal state since 1897. However, details of the earthquakes in last 2 decades are given below.

Date	Description
28 November 2005	Ganga Canyon, South of the Sunderbans, Mb 4.7 21.015 N, 89.158 E, D=010.0 kms, OT=16:57:13 UTC
20 June 2002	Jayachari - Rajshahi, Bangladesh, Mw 5.1 25.868 N, 88.874 E, D=037.8 kms, OT=05:40:43 UTC
12 June 1989	Sunderbans, Bangladesh, Mw 5.7 (7) 21.861 N, 89.763 E, D=006.0 kms, OT=00:04:09 UTC (7)
26 March 1981	Chingrakhali-Bhairabnagar area, West Bengal, Mb 4.9 (4). 21.180 N, 88.620 E, OT=02:47:10 UTC (4)
19 November 1980	Gangtok area, Sikkim, Ms 6.1 (4). 27.400 N, 88.800 E, D=047.0 kms, OT=19:00:45 UTC (4)

Source: *Amateur Seismic Centre, http://asc-india.org/seismi/seis-west-bengal.htm, accessed 16.05.2022*

After assessment of the website https://earthquaketrack.com/in-28-medinipur/recent(accessed 16.05.2022) which lists the latest earthquakes, it was found that no earthquakes were found to have occurred in or within 10 km radius of the project site in the last ten years.

Despite the low level of seismicity and the proximity of low magnitude earthquake that has occurred in the region, the construction of the buildings will be done as per National Building Code and IS 875. In case of damage due to earthquake, the disaster management shall be done in line with National Disaster Management Authority's system. There is no threat of landslide at project site, it being flat in topography.

Management Measures:

Things that need to be done shall be as follows:

1. During construction, the various building byelaws and BIS codes will be followed.

2. A common meeting point inside the plant site and a contact outside the plant will be identified and known to all employees and workers.

3. List important telephone numbers and torch, water, transistor, first-aid kit and non-perishable food will be kept at a designated place. An emergency kit shall be ready at all times.

4. Train workers in basic first aid. Teams for first-aid; search and rescue etc. will be formed in the area and preparedness drills will be conducted for what to do in case of an event.

In case of occurrence of an earthquake, every individual would have to follow the pointers below:

1. Keep calm and help others to keep calm. Do not panic.
2. If you shall be inside of a building: Protect yourself by ducking under sturdy table and staying there until the shaking stops. Turn off electricity and gas.
3. If you shall be on the road in a built up area: Immediately move away from buildings, slopes, streetlights, power lines, hoardings, fly-overs etc. into open spaces. Do not run or wander; keep the roads free for movement.
4. If you shall be driving: Stop the vehicle away from the buildings, slopes and electric cables; come out of the vehicle, hold it and stay by its side
5. Keep calm and expect aftershocks.
6. Check if you or anyone else is hurt. Use first-aid and wait for medical help.
7. Do not move seriously injured people.
8. Do not turn-on electrical appliances and gas.
9. Check your building for damages.
10. Do not waste water and do not block telephone lines.
11. Do not spread rumours and don't panic.
12. Volunteer to help.
13. Keep the streets clear for emergency services.
14. Do not use matches, lighters, camp stoves or electrical equipments, appliances until you can be sure there are no gas leaks. They may create a spark that could ignite leaking gas and cause an explosion and fire.
15. Do not use your telephone except for a medical or fire emergency. It could tie up the lines needed for emergency response. If the phone doesn't work send someone for help. Conserve mobile phone & laptop batteries for use in emergency as power may be cut for long.

For general structural safety, the following codes shall be followed:

1. IS: 456:2000 "Code of Practice for Plain and Reinforced Concrete.
2. IS: 800-2007 "Code of Practice for General Construction in Steel.
3. IS: 801-1975 "Code of Practice for Use of Cold Formal Light Gauge Steel Structural Members in General Building Construction.

4. IS 875 (Part 2):1987 Design loads (other than earthquake) for buildings and structures Part 2 Imposed Loads.

5. IS 875 (Part 3):2015 Design loads (other than earthquake) for buildings and structures Part 3 Wind Loads.

6. IS 875 (Part 4):1987 Design loads (other than earthquake) for buildings and structures Part 4 Snow Loads.

7. IS 875 (Part 5):1987 Design loads (other than earthquake) for buildings and structures Part 5 special loads and load combination (second revision).

8. IS: 883:2016 "Code of Practice for Design of Structural Timber in Building.

9. IS: 1904:1986 "Code of Practice for design and construction of foundations in soil".

10. IS1905:1987 "Code of Practice for Structural Use of Unreinforced Masonry.

11. IS 2911 (Part 1): Section 1: 2010 "Design and Construction of Pile Foundation -Code of Practice IS 2911-1-4:2010: Code of Practice for Design and Construction of Pile Foundations.

12. IS 2911 (Part 2): Section 1: 1980 "Code of Practice for Design and Construction of Pile Foundation

For Earthquake Protection, the following codes shall be followed:

1. IS: 1893-2002 "Criteria for Earthquake Resistant Design of Structures (Fifth Revision)"

2. IS:13920-2016 "Ductile Detailing of Reinforced Concrete Structures subjected to Seismic Forces - Code of Practice"

3. IS:4326-2013 "Earthquake Resistant Design and Construction of Buildings - Code of Practice (Second Revision)"

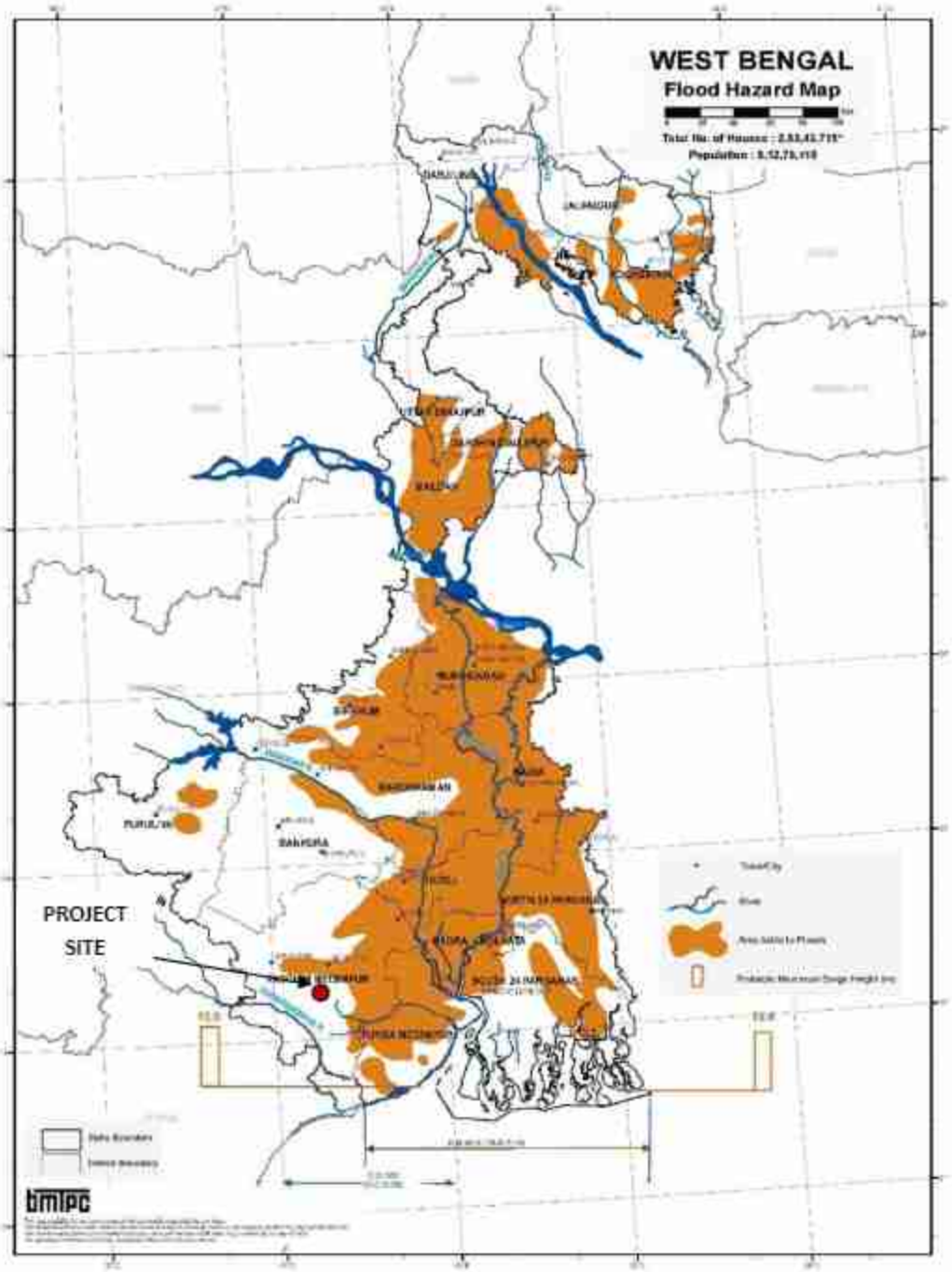
4. IS:13828-1993 "Improving Earthquake Resistance of Low Strength Masonry Buildings - Guidelines"

5. IS:13827-1993 "Improving Earthquake Resistance of Earthen Buildings - Guidelines",

6. IS:13935-2009 "Seismic Evaluation, Repair and Strengthening of Masonry Buildings - Guidelines"

Flood Hazard

A perusal of the flood potential map of West Bengal state given in **Fig. No. C7-5** shows that the project area lies in the area of "no significant flooding".



(Source:https://bmtpc.org/DataFiles/CMS/file/VAI2019/wb.html;accessed 17.05.2022)

Fig. No. C7-5: Flood Potential Map

Flood management

In case of extreme scenario of occurrence of flood in study area, people from the nearby-flooded villages might flock for shelter to the higher elevations and this project could be one of their refuges in times of distress. Hence, arrangement of flood shelter is proposed in the project as follows:

1. Several clean containers for water, large enough for a 3-5 day supply of water.
2. A 3-5 day supply of non-perishable food and a non-electric can opener.
3. A first aid kit and manual and prescription medicines and special medical needs.
4. A battery-powered radio, flashlights, and extra batteries.
5. Sleeping bags or extra blankets.
6. Water-purifying supplies, such as chlorine or iodine tablets or unscented, ordinary household chlorine bleach.
7. Baby food and/or prepared formula, diapers, and other baby supplies.
8. Disposable cleaning cloths, such as "baby wipes" for the whole family to use in case bathing facilities are not available.
9. Personal hygiene supplies, such as soap, toothpaste, sanitary napkins, etc.
10. An emergency kit for your car with food, flares, booster cables, maps, tools, a first aid kit, fire extinguisher, sleeping bags etc.
11. Rubber boots, sturdy shoes, and waterproof gloves.
12. Insect repellent containing DEET or Picaridin, screens, or long-sleeved and long-legged clothing for protection from mosquitoes which may gather in pooled water remaining after the flood.

Manmade disasters

Disaster may occur due to following hazards in the steel complex.

1. Fire
2. Explosion
3. Oil spillage
4. Electrocution

5. Hazardous waste
6. Accident
7. Liquid hot metal spill

In any plant there are various activities or areas which pose substantial threat to the workers and hence hazardous in nature. The potential hazardous areas and the likely accidents with the concerned area have been enlisted below in **Table No. C7-17.**

Table No. C7-17: Hazard Identification of the Proposed Steel Plant

Group	Item	Nature of Hazard	Hazard Potential	Remarks
Raw materials handling	Coal for coking	Fire	Moderate	Fire hazard
	Water treatment Chemicals like acids/alkalis	Toxic	Major	Bio-corrosive
	Lube oils/greases	Fire	Moderate	Flammable
Production units				
Coke Plant	Dusts and fumes	Asphyxiation	Moderate	Air pollution
	VOC emissions from battery	Toxic	Moderate	Health hazard
	Coke over gas	Fire & Toxic	Major	Fire and CO hazard
Agglomeration (Sintering& Pellet)	Dusts	Respiratory	Moderate	Ambient air pollution
Iron making in	Release of untreated BF wastewater	Toxic	Major	Severe pollution of surface water
	BFG handling	Fire	Major	Fire hazard
	Hot metal & slag Handling.	Fire	Major	Fire hazard
LD/ BOF	Release of untreated BOFs wastewater	Toxic	Major	Severe pollution of surface water
	BOFG handling	Fire	Major	Fire hazard
	Hot liq. Steel & Slag Handling	Heat radiation	Major	Bio-corrosive

Rolling Mills	Gas firing/fuel firing	Fire	Major	Fire hazard
	Release of untreated wastewater	Toxic	Major	Severe pollution of surface water
Captive Power Plant (CPP)	MBF Gas, Coke oven Gas	Fire	Major	Fire hazard
Utilities				
Fuel gas	Gas leaks	Fire & Toxic	Major	Fire & Co Pollution
Electric Power Supply	Short circuit	Fire	Major	Fire hazard
Liquid fuel	Fuel handling & storage area	Fire & Toxic	Major	Fire Hazard
Hydraulic oil and lubricants	Accidental discharge of hydraulic oil under pressure	Fire & Toxic	Moderate	Fire & personal injury
Lime Dolo production and transportation	dust	Respiratory	Moderate	Ambient air pollution

1. ACCIDENT LEVEL

If there is any disaster in any part of plant/work place due to any reason the classification of area, which may be affected, and nature of accidents can be made as follows:

Table No. C7-18: Levels of Accidents

1	Level	I	Operator level
2	Level	II	Local community level
3	Level	III	Regional/national level
4	Level	IV	International level

Out of the above, only level- I and level - II class of accidents can be considered applicable for steel complex.

Level - I Accidents

Accidents that may happen due to electrocution, fire, explosion, oil spillage, liquid hot metal spill and spontaneous ignition of combustible material at operator level. This level has low probability of occurrence and affects persons inside the plant. Various hazardous area, which have been mentioned above in **Table No. C7-17** as potential hazard area will be affected during this level of accidents.

Level- II Accidents

Accidents of this level can occur in case of sabotage and complete failure of all automatic control/warning systems, and also if the fuel oil stored in tank leaks out. However probability of occurrence of this is very low due to adequate security, training and education of persons of plant responsible for operating such systems.

2. DISASTER PREVENTIVE MEASURE

In order to prevent disaster due to fire, explosion, oil spillage, electrocution, liquid hot metal spillage and other accidents, following preventive measures shall be adopted:

1. Design, manufacture and construction of all plant and machineries building will be as per national and international codes as applicable in specific cases and laid down by statutory authorities.

2. Provision of adequate access way for movement of equipment and personnel shall be kept.

3. Minimum two no. of gates for escape during disaster shall be provided.

4. Water spraying in coal storage shall be provided.

5. System of fire hydrants comprising electrical motor division and diesel engine drivers fire pumps with electrical motor driver jockey pump for keeping the fire hydrant system properly pressurized and automatic water sprinkling system for all important transformers.

6. Fire hydrants with fire hoses in all areas where fire can break.

7. Shielded cover will be paved on the signal cable to separate from the power cable if they shall be laid together.

8. Steam fire extinguishers shall be adopted at all the dangerous places in the workshops and plant.

9. Ventilation and temperature control facilities is set at all operation room, duty room, and assistant room as well as overhang fans to ensure labour health.

10. The design of this project is set with safety measurements such as lighting proof grounding and anti- electric shock.

11. The safety exit and safety evacuation space would meet the requirements of building design for fireproofing regulations GBJ16-87 (1997 Edition).

Site Emergency Control Room

In order to control the disaster more effectively, a Site Emergency Control Room (SECR) shall be established at the plant site. The facilities proposed to be provided are given in following sections:

1. Plant Layout.
2. Plant Layout with inventories and locations of fuel oil, storage tanks, coal storage, assembly points, location of safety equipment etc.
3. Hazard identification chart, maximum number of people working at a time etc.
4. Population around factory.
5. Internal telephone connections.
6. External telephone connections.
7. Hotline connection to district collector, police control room, fire brigade, hospital etc.
8. Public address system.
9. Torch-lights.
10. List of dispensaries and registered medical practitioners around factory.
11. Area map of surrounding villages.
12. Nominal roll of employees.
13. List of personnel with addresses, telephone numbers.
14. Note pads and ball pens to record message received and instructions to be passed through runners.
15. The blown up copy of Layout plan showing areas where accident has occurred.
16. Fire hydrant system in different location.
17. Truck parking information
18. Specialized monitoring & management equipment will be available at all the sensitive points to deal with small to medium spillages of the chemical.

Safety Department

Safety department shall be manned by experienced engineers and other supporting staff who would bring safety consciousness amongst the work force of plant. The safety department shall conduct regular safety awareness courses

by organizing seminars and training of personnel among the various working levels.

CONTIGENCY PLAN FOR MANAGEMENT OF EMERGENCY

To tackle the situation, a disaster control room will be set up having links with all control rooms of the plant. An up to date communication facility will be provided to control rooms. In case of disaster, emergency meeting of all concerned sectional heads will be convened to decide control measures and ensure it's implementation. The emergency organisation shall be headed by emergency leader called Site Main Controller (SMC) who will be plant manager. In his absence senior most person available at plant shall be emergency leader till arrival of plant manager.

Besides the top officials described above, rest of the employees shall be divided into three action teams namely A, B, C, and a Non-action Group D. Action team 'A' will consist of staff of section in which accident has occurred. Action team 'B', will consist of staff of non-affected sections and maintenance department. Action team 'C' will consist of supporting staff i.e. Security supervisor, Warehouse Supervisor, Shift Supervisor etc. Group 'D' will consist of people not included in those teams like contractor, labour, security men etc.

Team 'A' comprising staff of affected section will be taking up the action in case of an emergency. Team 'B' will help team 'A' by remaining in their respective sections ready to comply with specific instructions of SMC. Team 'C' consisting of supporting staff will help team 'A' as required and directed by Team 'B'. Group 'D' will be evacuated to safe region under supervision of Team 'C'.

A multichannel communication network shall connect SECR to control rooms of plant, various shops, and other departments of plant, fire station and neighbouring industrial units. Co-ordination among key personnel and their team has been shown in **Fig. No. C7-6**.

Out-site Organizations Involved in Control of Disaster

In the event of massive spillage of fuel oil or occurrence of fire, population inside and outside plant boundaries, vegetation and animal etc. may be affected. In such circumstances secondary fire may also take place. In such an event help shall be taken from outside agencies also.

The organizations that shall be involved shall be as follows:

1. State and local authorities: District Collector, Revenue Divisional Officer etc.

2. Factory Directorate, Director of factories and boiler, Joint Director of factories and boiler, Asst. Director of factories and boiler.

3. Environmental agencies: Member Secretary of State Pollution Control Boards, Regional Officer State Pollution Control Board.

4. Fire Department: Chief District Officer

5. Police Department: District Superintendent of Police, SHOS of nearby Police Stations

6. Public Health Department:

   - District Medical Officer
   - Residential medical officers of PHCs in a radius of 4-5 km around plant site.

7. Local Community Resources

   - Regional Transport officer
   - Divisional Engineer Telephones

The outside organisations shall directly interact with district magistrate, who in consultation with SMC, shall direct to interact with plant authorities to control the emergencies.

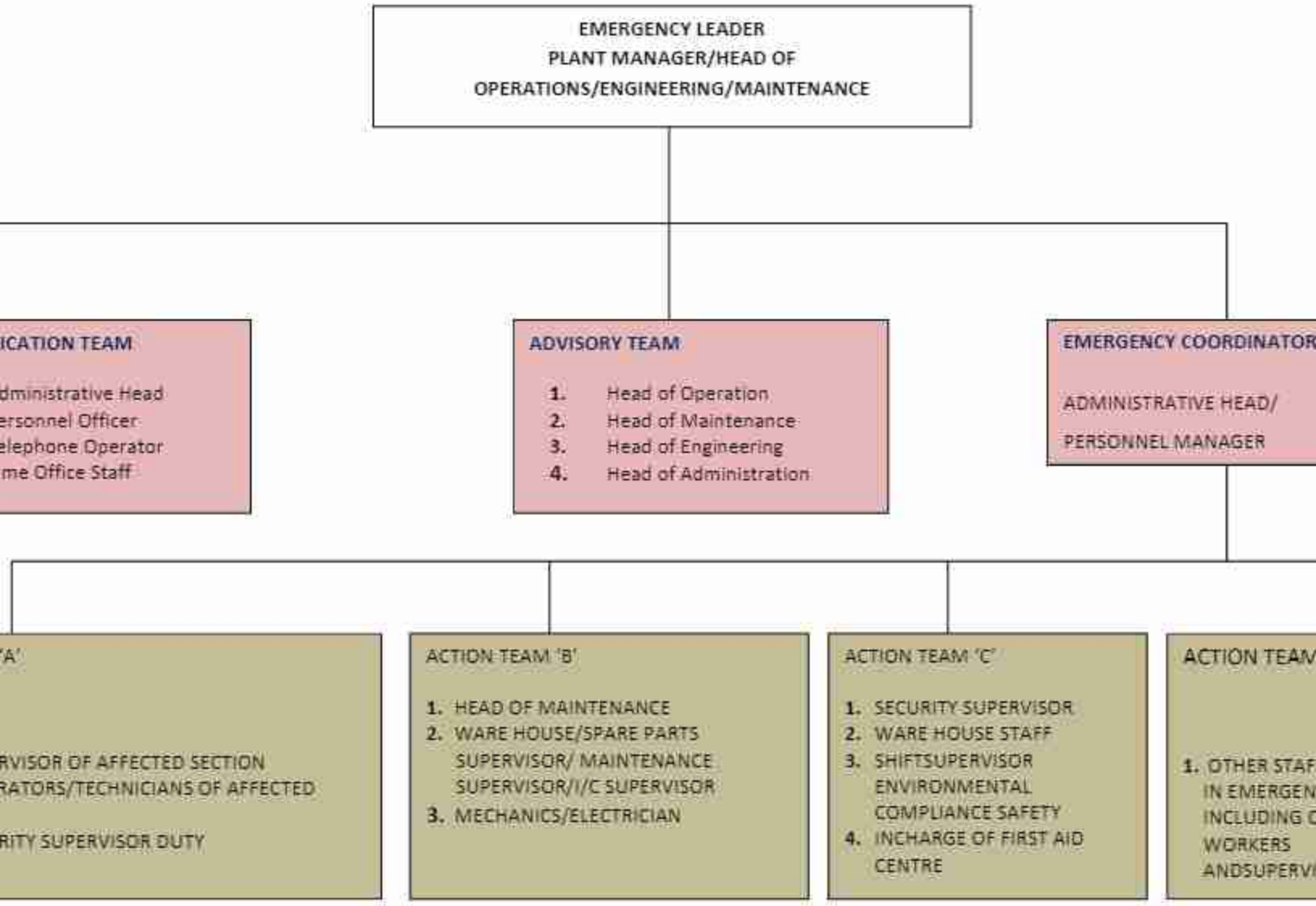


Fig. No. C7-6: General Coordination among On-site Emergency Team Members

Hazard emergency control procedure

The onset of emergency will in all probability, commence with a major fire or explosion, the following activities will immediately take place to interpret and take control of emergency.

1. Staff member on duty will go to nearest fire alarm call point and trigger off the fire alarm.

2. On site fire crew led by fireman will arrive at the site of incident with fire foam tenders and necessary equipments.

3. Site main controller will arrive at SECR, from where he will receive information continuously from incident controller and give decisions and direction to the incident controller, plant control room, Emergency security controllers and to the site medical officer to take care of casualties.

Site Main Controller will be directing and deciding a wide range of following disparate issues. In particular SMC has to decide and direct.

1. Whether incident controller requires reinforcement of manpower and facilities

2. Whether plant is to be shut down or more importantly kept running.

3. Whether staff in different locations is to remain indoor or to be evacuated and assembled at designated collection center.

4. Whether missing staff members are to be searched or rescued.

5. Whether off-site emergency plan to be activated and a message to that effect is to be sent to district headquarter.

When the incident has eventually been brought under control as declared by the Incident Controller, the SMC shall send two members of his advisory team as inspectors to incident site for:

1. An assessment of total damage and prevailing conditions with particular attention to possibility of re-escalation of emergency which might, for the time being, be under control.

2. Inspection of other parts of site, which might have been affected by impact of incident.

3. Inspection of personnel collection and roll call centers to check if all persons on duty have been accounted for.

4. Inspection of all control rooms of plant to assess and record the status of respective plants and any residual action deemed necessary.

Post emergency, the inspectors will return to SECR with their observations and report of finding and will submit the same to SMC.

MISCELLANEOUS PREVENTIVE MEASURES

Alarm system to be followed during disaster

On receiving the message of "Disaster, from Site Main Controller, fire station control room attendant will sound SIREN I WAILING TYPE FOR 5 MINUTES. Incident controller will arrange to broadcast disaster message through public address system.

On receiving the message of "Emergency Over" from Incident Controller the fire station control room attendant will give "All Clear Signal, by sounding alarm straight for two minutes. The features of alarm system will be explained to one and all to avoid panic or misunderstanding during disaster.

Actions to be taken on hearing the warning signal

On receiving the disaster message following actions will be taken:

1. All the members of advisory committee, personnel manager, security controller etc. shall reach the SECR.
2. The process unit persons will remain ready in their respective units for crash shutdown on the instruction from SECR.
3. The persons from other sections will report to their respective officer.
4. Residents of township will remain alert.

Safety devices/equipment

In order to make the services more effective the workers and rescue team will be provided with the safety equipment and items like gas mask respirators, fire entry suits, fire blankets, rubber shoes or industrial shoes, rubber glove, ladders, ropes, petromax lamp torches etc.

Fire extinguishers

Strategic locations in the proposed plant will be identified and applicable fire extinguishers will be provided. The types of fire extinguisher which have been proposed is given in **Table No. C7-19**.

Table No. C7-19: Different Fire Extinguishers at Different Sites

Name of Site	Type of Fire Extinguishers
Generator area	CO_2& Foam Type, Dry Chemical Powder
Cable galleries	CO_2& Foam type, Dry chemical powder
High voltage panel	CO_2& Foam type, Dry chemical powder

Name of Site	Type of Fire Extinguishers
Control rooms	CO_2& Foam type, Dry chemical powder
MCC rooms	CO_2& Foam type, Dry chemical powder
Pump Houses	CO_2& Foam type, Dry chemical powder
Fuel storage	CO_2& Foam type, Dry chemical powder sand basket
Guest houses and offices	Dry chemical powder, foam type
Godowns, store	CO_2& Foam type

Casualty services

The casualty services section will be headed by a medical officer who is responsible for immediate medical aid and first aid. The section will be fully equipped with all first aid medical facilities. An ambulance will be provided for on duty round the clock to tackle the emergency. On receiving the call of emergency, the medical officer will report immediately to disaster site along with mobile first aid equipment and ambulance. The immediate first aid will be made available and the medical officer will assess further line of action in the best interest of victim.

Specific Treatment

Specific treatment/preventive measures for injuries and hazards will be provided in the Medical Centre. Eye and body showers will be provided in different required places of plant which shall be identified by the Safety Officer. Major hazards/injuries and treatment facilities in the plant shall comprise of All primary pathological diagnosis, X-Ray, Ultra sound, ECG, Trauma cases, Audiometry Test, Spirometry test, Vision testing, Eye treatment, Burn treatment, Poisoning treatment Electrical Shock treatment and Ambulance Facility.

The emergency, critical cases & diseases which cannot be treated shall be referred & treated at larger hospitals in the district or Medical Colleges or super speciality hospitals.

INDUSTRIAL SAFETY

For protection of working personnel, equipment and machineries from any damage or loss and to ensure uninterrupted production, adequate safety and fire-fighting measures have been planned for the proposed plant. Important provisions are as follows:

1. Laying down specific Safety, Health & Environment policy to guide.
2. Provision of adequate personal safety appliances to workers engaged in hazardous installations.
3. Practices of safety inspections/monitoring at regular intervals by a team of experienced professionals to guide & educate the workforce.

4. Provision of detection and alarm system to allow a developing fire to be detected at an early stage.

Plant uses a wide variety of specialized equipments and methods for handling construction materials. This equipment ranges from the most basic forklift to Cranes, Derricks, Hoists, Elevators and Conveyors. The hazards of using powerful equipment and of moving heavy materials require a wide variety of protective measures for employees on the site. The work talks about regulatory requirements and safe use for this equipment. The work covers safe rigging and slings for proper lifting, and safety requirements for specific types of Cranes, Derricks, Hoists, Elevators, Conveyors, and forklifts. Bearing this in mind the cranes, hoists, lifts are periodically tested and certificate issued for continuous use.

Safety Management

No. of elements of safety management are quite large. They also vary from case to case. They can be grouped under five broad categories or sub-systems.

1. Managerial Systems
2. Accident Prevention Systems
3. Support Systems
4. Event Management Systems
5. Evaluation Systems

Managerial Systems

1. Safety Policy
2. Safety Organization
3. Safety Objectives
4. Safety Responsibilities
5. Safety Accountability
6. Safety Coordination
7. Safety Budget
8. Safety Committees
9. Safety Meetings
10. Safety Laws / Rules

Accident Prevention Systems

1. Equipment and workplace standards
2. Maintenance & Testing Procedures
3. Contractor & Visitor Control
4. Safety Work Permit (SWP)

5. Hazard Identification, Reporting, Investigation & corrective Action
6. Inspection Systems
7. Monitoring Systems
8. Risk Assessment
9. Personal Protective Equipments

Support Systems

1. Induction
2. Management skills training
3. Job specific training
4. Safety Awareness Promotion
5. Safety Information Services

Event Management Systems

1. Emergency Management
2. Occurrence Reporting, Investigation &Analysis
3. Compensation & Rehabilitation

Evaluation Systems

1. Safety Performance Reviews
2. Safety systems audits (Internal)
3. Safety systems reviews
4. SWPs compliance
5. Safety action plan review
6. Safety system audits (External)

Appropriate Personal Protective Equipments (PPE)

Personal protective equipments are given in **Table No. C7-20.**

Table No. C7-20: Personal Protective Equipments

S. No.	Unit	Hazard	Injury	Use of PPE
1	Material handling and storage	Dust pollution Hands going between running parts of conveyors Machine's sound	Eye Injury, Dust inhalation Physical injury Hearing system damage	a) Safety Goggles Eye wash taps b) Safety boot, Hand leather gloves c) Ear muffles Fire-fighting equipments

S. No.	Unit	Hazard	Injury	Use of PPE
2	All manufacturing sub-units	Dust pollution, hand going into parts of machines/ conveyors, body part touching hot components, machine's sound, explosion/blast, hot air/steam release, hot metal spillage	Burn injury, physical injury, fatality, damage to ear drum	a) Safety Goggles Eye wash taps b) Safety boot, Hand leather gloves, leather aprons c) Ear muffles Fire-fighting equipments

Annexure - ix
Staff Medical Checkup

FORM NO. 1*

HEALTH

REGISTER

FORM NO. 17

HEALTH REGISTER

[illegible]

1. [illegible] Serial No. in the Register of adult workers: [illegible]
2. Name of worker: Sanjay Kumar Singh Chowdhury
3. Sex: M
4. Date of Birth: [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	2	3	4	5	6	7	8	9
[illegible]			[illegible]		[illegible]			

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	11	12	13	14	15	16
BP - [illegible]	[illegible]					[illegible] (signature and stamp)
[illegible]						
[illegible]						
[illegible]						
[illegible]						
Chest - [illegible], ECG - [illegible]						

FORM NO. 17

HEALTH REGISTER

[Prescribed under Rules 53 & 91 of the West Bengal Factories Rules, 1958 as amended vide Notification No. [illegible] dated 27th Nov. 1991]

No. 5

1. Serial No. in the Register of adult worker: 2011/2445
2. Name of worker: Rajni Mamata
3. Sex: 4. Date of Birth: 10-06-1999

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cold Mill			Fitter Jacke		8-5-23				BP - 132/80 mmHg	Fit					[illegible signature]
Bahadur			14/76						RR - 18, 1pm, PR - 74						
									CBP - 71, Hb - 15 mg						
									DS - 6/6						
									F.S. 7-4 - N						
									Audiogram - D(N)						

FORM NO. 1*

HEALTH

REGISTER

FORM NO. 17

HEALTH REGISTER

(Amended vide Notification No. HR(3)-80/170 dated 7th Jan. 1981)

Page 1

Serial No. in the Register of male cattle	Name of owner	Age	Sex	Breed	Colour	Distinguishing marks	Date of birth or age as ascertained	Date of death	Cause of death
1	2	3	4	5	6	7	8	9	10
1	Gurdev Singh		M	Supervisor			10.10.20		

Serial No. in the Register of female cattle	Name of owner	Age	Breed	Colour	Distinguishing marks	Date of birth or age as ascertained	Date of death	Cause of death
11	12	13	14	15	16	17	18	19
1		F.A.						

Visit ID	: **AMP4360**	Registration	: 18/Aug/2023 05:53PM
UHID/MR No	: AMP.0000004047	Collected	: 20/Aug/2023 12:41PM
Patient Name	: **Mr.RAHUL KUMAR SINGH**	Received	: 21/Aug/2023 11:54AM
Age/Gender	: 36 Y 0 M 0 D /M	Reported	: 21/Aug/2023 05:58PM
Ref Doctor	: SELF	Status	: Final Report
Barcode No	: 10074746	Client Code	: 78
Client Name	:STANDARD		

DEPARTMENT OF HAEMATOLOGY

BLOOD GROUP ABO & RH

BLOOD GROUP ABO AND RH FACTOR,WHOLE BLOOD EDTA		
TEST NAME	**RESULT**	**METHOD**
BLOOD GROUP TYPE	"O"	Forward & Reverse Grouping with Slide Method
Rh TYPE	POSITIVE	Forward & Reverse Grouping with Slide Method

Checked By

Dr. Arindam Das
M.B.B.S, M.D.(Path)
Consultant Pathologist

Apollo Health and Lifestyle Limited
(CIN : U85110TG2000PLC115819)
Corporate Office: 1-1-617/A, 7th Floor, Imperial Towers, Ameerpet, Hyderabad-500016, Telangana
Ph No: 040-4904 7777 | www.apollohl.com | Email ID:enquiry@apollohl.com
www.apollodiagnostics.in

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Client Name	:STANDARD		

DEPARTMENT OF HAEMATOLOGY

Test Name	Result	Unit	Bio. Ref. Range
TC,DC,ESR			
Sample Type : WHOLE BLOOD EDTA			
TOTAL LEUCOCYTE COUNT Electronic Impedance	5,700	/cu.mm	4000-10000
DIFFERENTIAL LEUCOCYTE COUNT			
NEUTROPHIL Microscopy	59	%	40-80
LYMPHOCYTE Microscopy	38	%	20-40
EOSINOPHIL Microscopy	1	%	1-6
MONOCYTE Microscopy	2	%	2-10
BASOPHIL Microscopy	0	%	<1-2
ERYTHROCYTE SEDIMENTATION RATE Modified Westergren	6	mm	<10 mm after 1st hour

*** End Of Report ***

Checked By

Dr. Arindam Das
M.B.B.S, M.D.(Path)
Consultant Pathologist

Dr. S. Rahaman

D.O.S.D.C.L.P. (Kol)
ICLEP (L.V.P. Eye Inst.) Hyd.
B.OPT (Rajsthan)

S & R Multispeciality Clinic
Enhancing lives ... inspiring better health

Date : _____

Name : Rahul Kumar Singh Age : 3 3Cyr Sex : _____

Routine checkup

- Lubistar '5'/. Eye Drop
1 drop BD to one month

15/8/23

C/O :

V 6/6 U.A 6/6

H/U :

Systemic Disease :

GLASS PRESCRIPTION

	Right Eye				Left Eye			
	DSPH	DCPL	AXIS	V/A	DSPH	DCPL	AXIS	V/A
Distance (DV)	Plano			6/6	Plano			6/6
Near Add (NV)								

Remarks : _____

299/251, Malancha Road (Opp Prem Hari Bhavan), Kharagpur
Phone : 9547863483 / 9547841484 / 7810975375

Calcutta Hearing Clinic

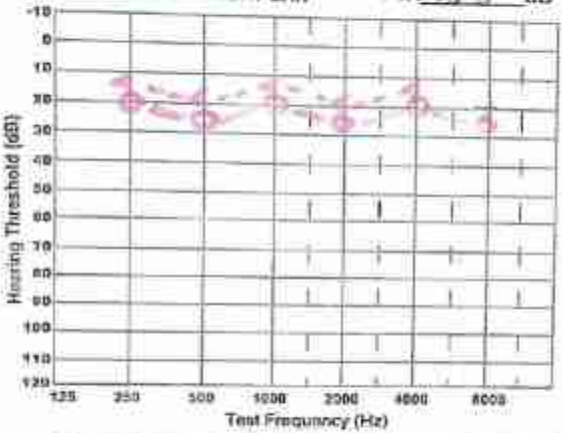
181A, Sarat Bose Road (Opposite Deshpriya Park), Kolkata- 700 026 | Kalpataru Heights, BC-70,71, Anandpur Pally, Kolkata-700 101
Time : (Mon to Fri : 11AM to 7PM, Sat 11AM to 5PM, SUNDAY CLOSED)
Phone : 033-2463-0237 / 8910258067

AUDIOMETRY REPORT

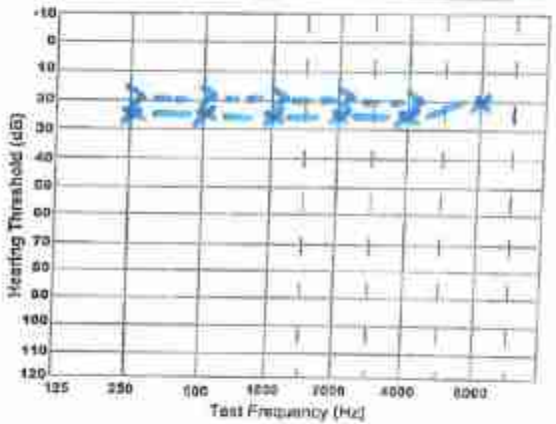
Name : Rahul Kumar Singh (RML 31241) Age : 36y Sex : M

Referred By : ..... Date : 18/08/23

AUDIOGRAM : RIGHT EAR PTA 83.3 dB



AUDIOGRAM : LEFT EAR PTA 25 dB



MODE / EAR	Air Conduction		Bone Conduction		Circled Code
	Masked	Unmasked	Masked	Unmasked	
LEFT	□	×	[	+	Blue
RIGHT	△	○	]	+	Red
NO RESPONSE	Add ↓ below the respective symbols				

ADDITIONAL TESTS

TEST		LEFT	RIGHT
SISI SCORE			
TONEDECAY COUNT			
ABLB			
SPEECH AUDIOMETRY			
ST Threshold	dB		
SD Score	%		
Threshold of Discomfort	dB		
TUNNING FORK TEST			
Rinnie			
Weber			
OTHER TESTS			

Case History :

Diagnosis :

RT Ear : } Bilateral hearing sensitivity within normal limits.

LT Ear : }

Remarks :

Advice :

PARTHA P. GHOSH
AUDIOLOGIST, SPEECH PATHOLOGIST
(AIISH) Mysore
RCI Regn. No. A06161

Signature.....

AUDIOLOGIST, SPEECH THERAPIST
HEARING AID SPECIALIST

Patient Name : Mr.RAHUL KUMAR SINGH		Bill No	: AMP4360
Age/Gender	: 36 Y 0 M 0 D /M	Reg.Date	: 18/Aug/2023 05:53PM
Referred By	: Dr.SELF	Reported	: 19/Aug/2023 11:43AM
Centre Name	: STANDARD	Report Status	: Final Report

DEPARTMENT OF X-RAY

X-RAY CHEST PA VIEW

STUDY SHOWS

- Lung fields appear clear.
- Both hila are normal.
- Mediastinum is central.
- Transverse cardiac diameter is within normal limits.
- Both CP angles are clear.
- Both hemidiaphragm are normal.
- Rib cage and spine appears normal.

IMPRESSION:

- **No significant abnormality detected.**

*** End Of Report ***

Checked By

DR. J. PAL
M.D.
RADIOLOGIST

H.O. & Lab
114-B, Sarat Bose Road, Kolkata-700 029. 78900 76966, 95200 05201

Other Clinics :
169, G. T. Road (S), Shibpur, Near Aloka Cinema, Hwh. - 002, 98368 12298
2G, N. S. Road, Shantinagar Colony, Liluah, Hwh. - 204, 93313 17276

RASHMI GREEN HYDROGEN STEEL PVT. LTD.

CORPORATE ENVIRONMENT POLICY

M/s Rashmi Green Hydrogen Steel Private Limited, flagship Company of Rashmi Group incorporated under Company Act on 27th day of July 2021 and having its registered Office at 9 AJC Bose Road 1st Floor, Ideal Centre Kolkata West Bengal 700017 got impetus from its promoter through systematic funding. Rashmi group is a fast growing Group in the field of manufacturing steel and cement. The Group has developed core competence in minerals, steel and cement with 18 years of experience. The growth of the group during last few years has been phenomenal and fast catching the attention of bankers, professionals and industry as a whole. With verticals that are exploring innovative and sustainable avenues in Steel, Energy, Technology and Cement, Rashmi Group is paving the way for India's emergence as a global superpower.

• The company, Rashmi Alloy Steel Private Limited, recognizes its joint responsibility with the Government and the Public to protect environment and is committed to regulate all its activities so as to follow best practicable means for minimizing adverse environmental impact arising out of its operations.

• The aim of the Policy is to do all that is reasonably practicable to prevent or minimize, encompassing all available knowledge and information, the risk of an adverse environmental impact arising from manufacturing and supply of our products.

• This Policy document reflects the continuing commitment of the Board for sound Environment Management of its operations. The Policy is applicable to all company operations covering manufacturing, sales and distribution and other offices. This document defines the aims and scope of the Policy as well as responsibilities for the achievement of the objectives laid down.

THE VISION

Our business approach not only seeks to minimize our environmental footprint but also contribute in enhancing the environmental quality in and around our work area. All of our operational units are certified under is an **ISO 9001 & 14001** standards and strictly follow defined operating procedures.

ENVIRONMENT POLICY

Rashmi Green Hydrogen Steel Private Limited (RGHSPL) is committed to meeting the needs of customers in an environmentally sound manner, through continuous improvement in environmental performance in all our activities. Management at all levels, jointly with employees, is responsible and will be held accountable for company's environmental performance.

Accordingly, RGHSPL aims to:

- Continuously assess our environmental impacts and measure and improve our environmental performance by adopting best practices for prevention and control of pollution.
- Ensure safety of its products and operations for the environment by using standards of environmental safety, which are scientifically sustainable and commonly acceptable.
- Develop, introduce and maintain environmental management systems across the company to meet the company standards as well as statutory requirements for environment. Verify compliance with these standards through regular auditing.
- Make continuous efforts to reduce water intensity and fresh water usage by increased use of harvested and recycled water in our operation.
- Reduce waste, conserve energy and explore opportunities for reuse and recycle.

- Conduct all our operations in an environmentally responsible manner that is better than statutory environment compliances and applicable standards.
- Involve all employees in the implementation of this Policy and provide appropriate training.
- Work in partnership with external bodies and Government agencies to promote environmental care, increase understanding of environmental issues and disseminate good practices.

CORPORATE RESPONSIBILITIES

The Directors/ Chairman of the Company is responsible for the Compliance of the Policy. The Directors/ Chairman shall constitute a Cell called as Corporate Environment Cell (CEC). The CEC is committed to conduct the company operations in an environmentally sound manner. The CEC will:

- Set standards and establish environmental improvement objectives and targets for RGHSPL as a whole and for individual units, and ensure these are included in the annual operating plans.
- Formally review environment performance of the company and report environmental performance to the Board of Directors/ Chairman of the company directly once every quarter.
- In case of emergency (non-compliance/deviation/violation/ major accident) immediate reporting to be done to the Directors/ Chairman of the Company.
- Review environment performance on monthly basis and recognise exemplary performance.

The overall responsibilities for environment management at plant level rest with Head of Environment Department. The Head of Environment Department will:

- Ensure implementation of Policy on environment at plant level and review, report environment performance of the plant to the Board of Directors/ Chairman of the company through CEC Cell once every quarter.
- In case of emergency (non-compliance/deviation/violation/ major accident) Head of Environment Department will do immediate reporting to the Directors/ Chairman of the Company.

The Corporate Environment Cell in coordination with Head of Environment Department will:

- Ensure implementation of Policy on environment and compliance with the Company's environmental standards and the standards stipulated as per law.
- Prevention of incidents or accidents that might result from abnormal operating conditions and
- Reduction of adverse effects that result from normal operating conditions.
- Establish appropriate management systems for environment management and ensure regular auditing to verify compliance.
- Establish systems for appropriate training in implementation of Environment Management Systems at work.
- Ensure periodic 3rd party environment audits through certification bodies to check efficacy of the Environment Management Systems
- Participate, wherever possible, with appropriate industry and Government bodies advising on environmental legislation and interact with national and local authorities concerned with protection of environment.

INDIVIDUAL UNITS RESPONSIBILITIES

The overall responsibility for environment management at each unit will rest with the unit's head who will ensure implementation of Policy on environment at unit level and report to Head of Environment Department

or CEC Cell as the case may be on monthly basis. Concerned line managers / heads of departments are responsible for environmental performance at department levels.

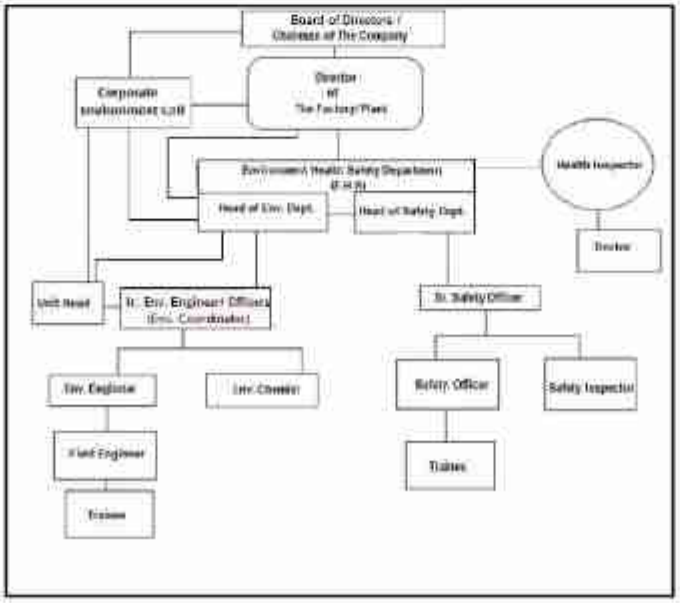
In order to full fill the requirements of the Policy at each site, the Unit Head will:

- Designate a unit environment coordinator who will be responsible for co-ordinating environmental activities at unit, collecting environmental data and providing expert advice and reporting environmental performance to the Unit Head on day to day or weekly basis as the case may be.
- Agree with the coordinator responsible for the unit specific environmental improvement objectives and targets for the unit and ensure that these are incorporated in the annual objectives of the concerned managers and officers and are reviewed periodically.
- Ensure that the unit complies with RGHSPL environmental standards and the relevant national and state regulations with respect to environment.
- Ensure that all new operations are subjected to a systematic and formal analysis to assess environmental impact. Findings of such exercises should be implemented prior to commencement of the activity.
- Regularly review environment performance of the unit against set objectives and targets and strive for continual improvement.

The Unit Head, through the Designate unit environment coordinator will:

- Ensure periodic audits to verify compliance with environment management systems.
- Ensure dissemination of relevant information on environment within the unit and to outside bodies, and regularly interact with Government authorities concerned for protection of environment.
- Maintain appropriate emergency procedures consistent with available technologies to prevent / control environmental incidents.
- Also ensure periodic 3rd party environment audits through certification bodies to check efficiency of the Environment Management Systems.
- Sustain a high degree of environmental awareness through regular promotional campaigns and employee participation through training, safety committees, emergency drills etc.
- Provide appropriate training to all employees.
- Report environmental performance to Corporate Environment Cell on a monthly basis.

The Hierarchy of our Corporate Environment management Cell that is being strictly followed is:



Rashmi Green Hydrogen Steel Pvt. Ltd.

Director

Date:-28.02.2022

Annexure-XXI

কানহাইয়াকে জামিন দেওয়ার পর প্রাঙ্গণে এসেন ছাত্রীরা। রবিবার। নয়াদিল্লি। এপি

ঘুষ-কাণ্ডে অভিযুক্ত বিধায়ককে আগাম অন্তর্বর্তী জামিন কোর্টের

বিজেপি কর্মীদের বিধায়ক-বরণ

'পাক বিদেশমন্ত্রীর মন্তব্য উদ্দেশ্যপ্রণোদিত' রাষ্ট্রপুঞ্জে পাকিস্তানকে ভারতের কড়া জবাব

আপের লক্ষ্য ছত্তিশগড়, ঘুঁটি সাজাচ্ছেন কেজরি

অরবিন্দ কেজরিওয়াল, ভূপেশ বঘেল

ইমরানের পদযাত্রার মুখে লাহোরে জনসভা নিষিদ্ধ

কমছে জম্মহার, চীনে বন্ধ হতে পারে 'কনের মূল্য'

দেশে লিঙ্গ-বৈষম্য আজও বড় বাস্তব

হরিয়ানার মানুষের দরজায় কংগ্রেস

কাতারের নতুন প্রধানমন্ত্রী

জানাচ্ছে সমীক্ষা

সরকারি ব্যর্থতা

শিলোদিয়ার নিরাপত্তা নিয়ে

স্বাস্থ্য মন্ত্রকে কর্পোরেট-স্টাইল! ছুটিতে গেলেও প্রয়োজনে বাড়ি থেকে করতে হবে কাজ

West Bengal ssc (Teachers 725days Dharna) protest rally from Sealdha to Gandhi statue at Dhramtala in Kolkata on wednesday—Shyamal Maitra

Tej Pratap Yadav celebrates Holi in Lalu's style

PATNA, MARCH 8/--/ Bihar minister Tej Pratap Yadav reminded people of his father Lalu Prasad on Wednesday when he celebrated Holi with gay abandon and earthiness that characterized the RJD president in his heydays.

Yadav, who chose to stay back in Patna, away from his father who is recuperating from a kidney transplant in Delhi, also made a video call to Prasad for good measure and the latter tried to perk up supporters. "A very Happy Holi to you. I am not well hence away from you all but my wishes are always with you. Let me recover then we will celebrate Holi with a bang," said Prasad as his doting elder son held the phone to display the screen to visitors. Yadav, whose devotion to Lord Krishna often moves the naive and bemuses the cynics, welcomed visitors donning a 'Mor Mukut' (crown adorned with a peacock feather).

Devotion to Krishna seemed to be the flavour of the occasion as there were some females dressed up like "Gopis" and they performed the "lath maar" Holi of Barsana, near Mathura, where women are known to celebrate the festival by beating menfolk with sticks.

The imprint of Lalu Prasad was also seen as Yadav indulged in a bit of "kapda phaad", a rather unsightly custom of men tearing off each others' clothes, perhaps to assert a lack of inhibition that is a veritable hallmark of the festival.

Ever since becoming the minister of environment, Yadav has been vigorously promoting the use of bicycles as the preferred mode of transport in a bid to reduce pollution caused by fossil fuel-driven vehicles.

The maverick politician did a few laps of his sprawling bungalow on his bicycle, using the occasion to reaffirm his convictions.

"We are grateful to Teju Bhaiya for organising the colourful celebrations. While there can be nobody like Lalu ji, Teju Bhaiya does his bit to keep the legacy alive", said one of his supporters. (PTI)

JD(U) frowns upon Nagaland unit's support to government

PATNA, MARCH 8/--/ Bihar Chief Minister Nitish Kumar's JD(U) on Wednesday described as "high indiscipline" and "arbitrary" the support extended by its Nagaland unit to the newly formed government in that state where the NDPP-BJP alliance returned to power.

According to a statement issued by the JD(U)'s national general secretary in charge for the North East, Afaq Ahmed Khan, the party's Nagaland state committee has been, therefore, dissolved. The JD(U) had bagged one seat in the recently held elections to the 60-strong assembly of Nagaland, where the NPP-BJP alliance has been voted to power for the second time in a row. "The central party comes to know that Nagaland state president of our party (has) given a letter of support to the Chief Minister of Nagaland without consulting the central party, (which) is high indiscipline and arbitrary. (PTI)

Viranganas chant 'no compromise' mantra on Women's Day

KOLKATA, MARCH 8/--/ No one should have to feel lonely and uncared for in this world, said 63-year-old Elina Dasgupta Dutta, who is one of the founders of a city-based eldercare platform, and a "domestic abuse survivor".

The sexagenarian woman, who started Tribeca Care with two others around a decade ago, told PTI on the occasion of International Women's Day that she wanted to give people, who did not have anyone to look after them, a life of dignity, after having "suffered pain and humiliation in her marriage with little or no support".

Talking more about the senior citizen platform, she said that trained care managers attend to the elderly people of the city, mostly left behind by children who have moved abroad, and assist them in every possible way, taking care of their medical needs, too, "just as a son or daughter should do". Elina, however, clarified that the fee charged for the services usually goes into paying the staff members, and she doesn't expect anything in return for her initiative.

Having suffered two thrombosis attacks, Elina said that she is still healing from the "physical and mental torture" which she had suffered.

"I wish to tell women who are putting up with abuses like I did that it was time to break the shackles. I have written a survival guide for them, and it has been endorsed by two NGOs, which carry it on their website," she added. Reflecting on her experiences as a politician, rights activist and CPI(M) leader Saira Shah Halim, in a similar vein, said that she was shocked and perplexed to have seen the "sexism at play" during her by-poll campaign in the posh Ballygunge constituency in South Kolkata.

Women should never let prejudice and adversities dissuade them in their journey, Halim who has often been described as a 'Virangana' (woman warrior) by her colleagues asserted.

"Politics is not for the faint-hearted, and for women it's doubly difficult. I remember that an opposition party had made my lifestyle, my choice of clothes a big issue during the campaign. I was told that I am too modern to be a Muslim. Despite having worked for the disenfranchised for long, the kind of comments that came my way during the electioneering gave me severe anxiety."

She, however, insisted that more women should join politics, as they are more disposed to show empathy to the distressed.

Adding to the narrative, Dhriti Banerjee, the first woman to be director of the 108-year-old Zoological Survey of India, said that for women in science there was still some ground left to be covered.

"Initially, safety was an issue for women during field visits (for flora and fauna surveys). Also, there was no provision for women's toilets during such visits. There would be times when people at the helm would be in two minds about sending women for such surveys," said the 53-year-old determined scientist, who has won many accolades at home and abroad.

She pointed that things however have changed for the better over the years. ZSI which is headquartered in Kolkata started hiring women scientists only after two years of India gaining her independence.

"Many women now helm the regional centres of ZSI. There was some scepticism over my elevation to the post of director, but that lasted for a month. I am not the person who takes things lightly and cracks the whip, when necessary. It wasn't long before the acceptance grew and everything fell in place," she explained.

Summing up, Sanghamitra Bandopadhyay, another distinguished woman scientist who scored by becoming the first lady Director of the prestigious Indian Statistical Institute, said that she was fortunate to have received support from her family, but knows of many others who couldn't pursue their profession for the lack of it.

"It feels good when students come up to me to say that my achievements have inspired them. However, I also know about women who have given up on their work life for family affairs as they are socially conditioned to do so. Many of them later regretted the fact that they gave up on their work life," she said.

Bandopadhyay, an alumnus of Presidency College, IIT Kharagpur and ISI, is a path breaking expert in artificial or machine intelligence and was given the prestigious Padma Shri award for her work last year. Her current research interests include computational biology and bioinformatics, soft and evolutionary computation, pattern recognition and data mining. "I wish to tell all women out there that they should choose their battles wisely, and learn to say no to compromises beyond a certain point," said the scientist who has also been awarded many other accolades including the Bhatnagar Prize, Infosys award, Shanti Swarup BHatnagar Prize and J C Bose fellowship as well as the TWAS Prize. (PTI)

Man threatens drone attacks in letter, held in Bihar

GAYA, MARCH 8/--/ The Bihar Police arrested a resident of Gaya town for writing a hoax letter, threatening "drone attacks" on a number of vital installations. According to Gaya SSP, Ashish Bharti, the accused Vineet Kumar was arrested from Civil Lines police station on Tuesday and the original letter was seized from him. "In the letter, it was written that the airports here and at Varanasi and New Delhi, besides the Rashtrapati Bhavan and the Prime Minister's residence, will be attacked by drones on Holi. At the bottom were mentioned a number of names as senders," Bharti said. Holi, the festival of colours, is being celebrated across the country on Wednesday. During interrogation, the accused confessed to having used names of some people known to him, with whom he wanted to get even in some dispute. "The accused has a history of deviant behaviour. He is named in a number of cases lodged at various places, including one of the Explosives Act registered at Jabalpur. "He is a former employee of the state irrigation department, who lost his job following financial irregularities that took place on his watch while he was posted as an engineer in Sheikhpura district," the SSP said. (PTI)

Female SSC job aspirants take out rally in Kolkata on Women's Day

KOLKATA, MARCH 8/--/ Female SSC job aspirants, who had qualified for teaching jobs in 2016 but were yet to get employment, took out a rally in Kolkata on Wednesday, highlighting their plight on International Women's Day. Around 200 candidates, wearing black dresses, brought out a rally from Sealdah railway station to the Mahatma Gandhi statue in central Kolkata.

Some of the protesters prostrated on the ground, got up and repeated the action throughout the rally, while others showed placards calling upon the woman chief minister (Mamata Banerjee) to "wake up to the plight of the teaching job aspirants". "Various programmes are held across the city on the occasion of International Women's Day but eligible School Service Commission (SSC) female candidates are staging a sit-in protest for over 720 days, yet the state government has turned a deaf ear to their plight," Madhurima Sinha, an SSC candidate, said.

The protesters also beat drums to "wake the government up from slumber".

Trinamool Congress spokesperson Kunal Ghosh said the state education department was working in the "best interest" of the SSC hopefuls as directed by the court. "We request them to have patience. Not a single eligible candidate will be left out," Ghosh

AFFIDAVIT

I, Md. Mosaref Molla, S/o Late Golam Mustafa, R/o- Vill- Nimkuria, PO- Jaipur, PS- Kashipur, Dist- South 24 Parganas, Pin-743502, dclared that in the record of pension of my son namely Md. Sarifuddin Molla, whare my name and my date of birth has been inadvertently recorded as Md. Mosaref Hussain, date of birth 01-07-1958 in place of Md. Mosaref Molla, date of birth 10-10-1957. As per affidavit in the Court o Ld. 1st Class Judicial Magistrate at Baruipur on 05-12-2022, Both Md. Mosaref Molla and Md. Mosaref Hussain is the same and one indetical person.

AFFIDAVIT

I, Sajeda Bibi, W/o Md. Mosaref Molla, R/o Vill- Nimkuria, PO- Joypur, P.S.- Kashipur, Dist- South 24 Parganas, Pin-743502 declare that in the record of Pension of my son named Md. Safiuddin Molla where my date of birth has been inadvertently recorded as 01-07-1963 in place of 12-12-1960 As per affidavit in the Court of the Ld. 1st Class Judicial Magistrate at Baruipur on 05-12-2022.

CHANGE OF NAME

I, Sujata, is legally wedded spouse of No - JC-850148-W, Rank - Ex Sub, Name - Bikash Sarkar, residing at Vill - Bakchara, P.O - Baikara, P.S - Gaighata, Dist - North 24 Parganas, PIN-743245 (WB) have changed my name from SUJATA to SUJATA SARKAR vide affidavit No 62/23 dated 06-03-2023 before the Notary Public at Barasat, District - North 24 Parganas. (WB)

CHANGE OF NAME

I, Bijan Pore (old name) S/O Rajanikanta Pore Presently residing at Arambagh (Block Para), P.O.-Arambagh, P.S.- Arambagh, Dist.- Hooghly, 712601, W.B, INDIA, have changed my name to (shall henceforth be known as) Bijon Behari Pore (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

CHANGE OF NAME

I, SK KASHEM (old name) S/O SK RABIYEL HAQUE Presently residing at Y-2/104/1, SATGHARA ROAD, KOLKATA- 700044, P.S.- NADIAL, West Bengal, India, have changed my name to (shall henceforth be known as) SK KASIM ALI (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

Name Change

I, **Jalrul Haque Mallik,** s/o Nurel Islam Mallik, residing at Vill. & Post- Soaluk, PS- Pursurah, Dist.- Hooghly, W.B, PIN- 712410, do hereby declare that in my West Bengal Board of Secondary Education and Higher Secondary Education's all documents my father's name has been recorded as Nurul Islam Mallik. On 02.03.2023 vide an affidavit before Executive Magistrate, Arambagh, Hooghly, W.B, I affirm that Nurel Islam Mallik and Nurul Islam Mallik i.e. the same and one identical person.

CHANGE OF NAME

I, Arindam Kumar Das, S/o Arun Kumar Das, R/o 125, Raja Rajendra Lal Mitra Road, P.O. K.G. Bose Sarani, P.S.- Beleghata, Kol-700085, declare that I have changed my daughter's name from Miss Tip Das to Shreya Das and I am end my daughter's date of Birth from 22-12-1995 to 22-12-1997 as per affidavit before Judicial Magistrate 1st Class Alipur vide affidavit No. 1137 on 22 Jan. 2022 both Tip Das and Shreya Das is one and same identical person.

CHANGE OF NAME

I, YASMINA (old name) W/O KASHEM SK Presently residing at Y-2/104/1, SATGHARA ROAD, KOLKATA- 700044, PS -NADIAL, West Bengal, India, have changed my name to (shall henceforth be known as) YASMINA BIBI (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

CHANGE OF NAME

I, KAZI MAHABUB HOSSAIN (old name) S/O KAZI MOHI UDDIN Presently residing at DANGA KAZI PARA, P.O.- BONHOOGHLI, BARUIPUR, 700103, West Bengal, India, have changed my name to (shall henceforth be known as) KAZI MAHABOOB HOSSAIN (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

CHANGE OF NAME

I, Smt Sankari Sarkar, widow of No 6905687 Ex Hav Late Chitta Ranjan Sarkar resident of Vill - New Thuba Mitali More, PO- Taki, P.S - Hasnabad, District - North 24 Parganas, PIN - 743426 (WB) is hereby declare that henceforth my son's name and date of birth has been changed from Mithun Kumar Sarkar, Date of Birth - 29-07-1981 to Mithun Sarkar, Date of Birth - 10-04-1982 vide affidavit No 72/23 dated 03-03-2023 before the Notary Public at Barasat, Dist - North 24 Parganas, (WB)

CHANGE OF NAME

I, SULEKHA ROY CHOUDURY spouse of No JC-757658L, Rank - Ex Sub, Name – PARESH NATH ROY CHOUDHURY presently residing at Vill – PATAIHAT, P.O. - DAINHAT, P.S.- KATWA, Distt – BURDWAN, Pin -713502 (W.B.), declare that henceforth my name has changed from SULEKHA ROY CHOUDURY to SULEKHA ROY CHOUDHURY vide affidavit No A/220 dated 06 Mar 2023 before the Public Notary at Arambagh, Hooghly (W.B.).

CHANGE OF NAME

I, Md Mohiuddin Molla (old name) S/O Abdul Khalek Molla Presently residing at VILL- Radhanagar, P.O.- Sonapukur, P.S.- Haroa, North 24 Parganas, 743502, W.B, INDIA, have changed my name to (shall henceforth be known as) Mohiuddin Molla (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

CHANGE OF NAME

I, Ali Murtuja Sk (old name) S/O Abdur Razzak Presently residing at Maya, Mokimnagar, P.O.- Maya, P.S.- Lalgola, Murshidabad, Pin- 742148, West Bengal, India, have changed my name to (shall henceforth be known as) Ali Murtuja (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

ANNEXURE

REF:- All that piece and parcel of Shali land measuring 30 Decimals lying and situates at Mouza: Hansia, J.L.No. 14, appertaining to Dag no.133 under. Khatian No.589 within the limits Kowgachi Gram Panchayet-I, P.S.Jagatdal, District- North 24 Parganas.

This is to inform all concern that my client intends to purchase the under reference property from the present owners (1) Smt. Astorani Koley, wife of Late Murari Mohan Koley, (2) Shrikanta Koley, son of Late Murari Mohan Koley, (3) Sushanta Koley, son of Late Murari Mohan Koley, (4) Lipika Santra, daughter of Late Murari Mohan Koley, all are residing at Chalk Gurdah Koley Para, P.O.- Shyamnagar, P.S.- Jagatdal, District-North 24Parganas, Pin-743127. Any person or concern having any manner of claim, demand or action of any nature against or in respect of the proposed transaction of the under reference property must intimate the undersigned in writing together with documents in support thereof within 10days since the date of this publication failing which the transaction shall be completed and any such claim, demand or action shall be deemed to have been waived.

HILLOL DASGUPTA (Advocate)
39/A,South Kalianiwas, P.O-Nona Chandanpukur
Dist-North 24 Pgs, Kolkata- 700122, (M)- 9331032939

NOTICE

This is to inform that the Environment Clearance for Expansion of Existing Pellet Plant (1.2 Million TPA To 6.4 Million TPA), Iron Ore Beneficiation Plant (Matching with Pellet Plant - 6.4 Million TPA), Producer Gas Plant (75,000 N.Cu.M/Hr To 2,00,000 N.Cu.M/Hr) with Addition of New Sponge Iron Plant (2.0 Million TPA), Ferro Alloys Plant (0.036 Million TPA) with Chrome Briquette & Zigging Plant, Steel Melting Shop with Matching LRF, CCM, Oxygen Optimized Furnace (1.8 Million TPA) with Slag Crushing Unit, Oxygen Plant (400 TPD), Rolling Mill with Pickling and Continuous Galvanizing Line (0.35 Million TPA), Wire Rod & Wire Drawing Mill (1.4 Million TPA) and CPP 245 MW (120 MW Coal and Dolochar Mix Based and 125 MW WHRB Based) by M/s. Orissa Steel & Power Pvt. Ltd., located at Village - Jitusole & Baghmuri, P.O. - Garhsalboni, P.S. - Jhargram, District - Jhargram, West Bengal has been accorded by Ministry of Environment, Forest and Climate Change, Government of India vide EC Identification No. EC23A008WB185834 & File No- IA-J-11011/180/2012-IA-II(I) dated 07.03.2023. The copy of the Environmental Clearance is available at West Bengal Pollution Control Board and seen in MoEF&CC website at http://parivesh.nic.in/.

NOTICE

This is to inform that the Environment Clearance for an Integrated Steel Plant of 3.1 Million Ton per annum (Finished Steel) along with 230MW (80MW WHRB/TRT based +150 MW coal based) Captive Power Plant by M/s. Rashmi Green Hydrogen Steel Private Limited, located at Mouza Changual (J.L. No-360), Jethia (J.L. No-361), Khatranga (J.L. No-362), Gopinathpur (J.L. No. 359) and Goyalara (J.L. No. 391), P.S. Kharagpur (Local), Dist. Paschim Medinipur, West Bengal has been accorded by Ministry of Environment, Forest and Climate Change, Government of India vide EC Identification No. EC23A008WB113189 & File No- IA-J-11011/102/2022-IA-II(IND-I) dated 07.03.2023. The copy of the Environmental Clearance is available at West Bengal Pollution Control Board and seen in MoEF&CC website at http://parivesh.nic.in/.

CHANGE OF NAME

I, Asit Kumar Majhi (Ex Servicemen No 14384165-W Rank - Ex Gnr) S/o Late Dhirendra Nath Majhi resident of 194/5, Sindiapara, PO- Kankinara, P.S - Jagaddal, District - North 24 Parganas, PIN - 743126 (WB) is hereby declare that henceforth my son's name spelling has been changed from ARITTRA MAJHI to ARITRA MAJHI vide affidavit No 71/23 dated 03-03-2023 before the Notary Public at Barasat, North 24 Parganas, (W.B)

CHANGE OF NAME

I, Sohidul Mollick (old name) S/O Mother Mallick Presently residing at Akrampur EIDGAH, Barasat, Pin- 700125, West Bengal, India, have changed my name to (shall henceforth be known as) Sohidul Mallick (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

CHANGE OF NAME

I, Mst Ayesha Khatun (old name) D/O Mostafa Kamal Hossain Presently residing at VILL- Chakseherdi, P.O.- Baishnab Nagar, P.S.- Baisnab Nagar, Pin- 732210, W.B, INDIA, have changed my name to (shall henceforth be known as) Ayesha Khatun (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

CHANGE OF NAME

I, MANHURA BEGUM (old name) W/O SK HASSAN ALI Presently residing at Y-2/104/1, SATGHARA ROAD, KOLKATA- 700044, PS -NADIAL, West Bengal, India, have changed my name to (shall henceforth be known as) KHUKUMONI BIBI (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

CHANGE OF NAME

I, Sheikh Golam Kuddus (old name) S/O Late Sk Nur Mahammad Presently residing at Vill- Shanktikri, P.O.-Naranda, P.S.- Panskura, Pin- 721139, Dist- Purba Medinipur, West Bengal, INDIA I have changed my name to (shall henceforth be known as) Sk Golam Kuddus (new name) vide an affidavit sworn before the Ld. Sub Divisional Executive Magistrate, 1st Classs at Tamluk (Purba Medinipur) on 27/02/2023. That Sk Golam Kuddus and Sheikh Golam Kuddus both are same and one identical person.

CHANGE OF NAME

I, Sahenaj Begam (old name) W/O Md Khalil Ansari, D/O Kasim Ansari Presently residing at R-63/1, Karbala Lane, P.O.- Garden Reach, P.S.- Metiabruz, Kolkata- 700024, W.B, INDIA, have changed my name to (shall henceforth be known as) Sahenaz Begam (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

CHANGE OF NAME

I, Abdul Kalam Md Arifuddin (old name) S/O Mohammad Haque Presently residing at Dharampur, Er Jamadar Para, Kazipara, Khanakul, Hooghly- 712406, W.B, INDIA, have changed my name to (shall henceforth be known as) Mohammad Arifuddin Jamadar (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

CHANGE OF NAME

I, SHASI RANJAN SHARMA (old name) S/O RANJAN KUMAR SHARMA Presently residing at AI-157, STREET NO-29, ACTION AREA-1, New town, 700156, West Bengal, India, have changed my name to (shall henceforth be known as) SHASI RANJAN (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

CHANGE OF NAME

I, Amin Khan S/O Islam Khan of 295/2W, A.P.C. Road, Kolkata 700009 declare that my actual name is Amin Khan but mistakely my name mentioned Md Amin Khan in Birth Certificate and School Marksheet of my Children. Amin Khan and Md Amin Khan same and one identical person. Vide affidavit dt.02/03/2023 sworn before the Notary Public Kolkata.

AFFIDAVIT

I, DOMA SHERPA, d/o Mr Norbu Sherpa and w/o Mr Gagan Chettri, residing at Hat Bazar, ward no X, P.O, P.S, Sub Division and Dist. Kalimpong do hereby solemnly affirm and declare that I was born and brought up in a Sherpa family and initially I was known as Doma Sherpa and same has been recorded in my Aadhaar Card bearing No 600139386322, EPIC bearing No MDM 2614907, Pan Card bearing No JNQPS6872A and Cast Certificate. That I have married to Mr Gagan Chettri and after the said of Marriage I have adopted the title of my husband and I also known as SRADHA CHETTRI. That Siddhanta Chettri is my biological son and in the ICSE and ISC Registration certificate, Admit Card, Mark Sheet and Pass Certificate my name has been recorded as SRADHA CHETTRI as Mother. That I intend to correct of my name and title as DOMA SHERPA in the certificate of my above named son Siddhanta Chettri vide affidavit date 29/11/2022 before the Executive Magistrate at Kalimpong.

AFFIDAVIT

I, Nawsad Ahmed S/o Late Md. Abdul Jalil Mollah R/o vill-20 Mitraganga Road, Joynagar, P.O- Joynagar Mazilpur, P.S- Joynagar, Dist- South 24 Parganas Pin-743337 That in my Driving WB-201994306275 where my wrongly Licence vide No. father's name has recorded as Ma J Molla in place of Md. Abdul Jalil Mollah as per Affidavit is the Court of ld. 1st Class Judicial Magistrate at Alipore on 07. 02. 2023 both Md. Abdul Jalil Mallah and Ma J Molla is the Same and one identical Persm

CHANGE OF NAME

I, Tahira Khatoon W/O Amin Khan of 295/2W, A.P.C. Road, Kolkata 700009 declare that my actual name is Tahira Khatoon but Mistakely my name mentioned Tahera Khatoon and some place Tahira Khan in Birth Certificate and School Marksheet of my children. Tahira Khatoon and Tahera Khatoon and some place Tahira Khan same and one identical person. Vide affidavit dt. 02/03/2023 sworn before the Notary Public Kolkata.

CHANGE OF NAME

I, Zainab begum W/O Junaid Feroz of 2B/H/37, Dr. M.N. Chatterjee Sarani, Kolkata- 700009 declare that my previous name was Puja Shaw after adopted The religion Islam on 23/10/2017 by sworn before J.M. 1st Class at Sealdah. That Puja Shaw and Zainab Begum is the same and one identical person and Henceforth I will be called and known as Zainab Begum.

CHANGE OF NAME

I ANANJAN DAS, S/O Late Bidyut Kumar Das and Jamuna Das Bishnu, residing at Vidyasagar Road, PO- Noapara, PS-Barasat, Kol- 700124, shall henceforth vide affidavit at Barasat Court Judicial Magistrate (1st class) dated 23.02.2023 have changed my surname from DAS to BISHNU. ANANJAN DAS and ANANJAN BISHNU is the same and one identical person.

CHANGE OF NAME

I, Benoy Banerjee (old name) S/O Jyotish Banerjee Presently residing at Vill- Kaikala, P.O.- Kaikala, P.S.- Haripal, Dist- Hooghly, Pin- 712405, W.B, INDIA, have changed my name to (shall henceforth be known as) Binoy Kumar Banerjee (new name) vide an affidavit sworn before Notary public at Kolkata on 06/03/2023.

CHANGE OF NAME

I, SHAONA SAHA BHATTACHARJEE, D/O SWAPAN SAHA, & W/O SAPTADEEP BHATTACHARJEE R/O -52, BAGHAJATIN ROAD, P.O.-NABAGRAM, P.S.- UTTARPARA, HOOGHLY- 712246, WILL HENCEFORTH BE KNOWN AS SHAONA SAHA, VIDE AN AFFIDAVIT BEFORE THE NOTARY PUBLIC KOLKATA AT CMM'S COURT ON DATED 08/02/2023. BOTH **SHAONA SAHA BHATTACHARJEE AND SHAONA SAHA** ARE THE SAME AND ONE IDENTICAL PERSON.

CHANGE OF NAME

I TAHIDUR RAHAMAN, S/o ABDUL MUNIB, VILL - MONDAL GATHI (PURBAPARA), P.O - BAMANGACHI, P.S - DUTTAPUKUR, DIST. NORTH 24 PGS, PIN - 743248 BUT MADHYAMIK ADMIT CARD WRONGLY RECORDED MY NAME IS MD. TAHIDUR RAHAMAN SHALL HENCE FORTH VIDE AFFIDAVIT AT BARASAT COURT JUDICIAL MAGISTRATE (1ST CLASS) DATED - 03/03/2023 DECLARED. MY NAME IS TAHIDUR RAHAMAN. TAHIDUR RAHAMAN & MD. TAHIDUR RAHAMAN IS SAME AND ONE IDENTICAL PERSON.

RASHMI GREEN HYDROGEN STEEL PRIVATE LIMITED
Address : 9, AJC Bose Road, 1st Floor, Ideal Centre, Kolkata, West Bengal,700017
CIN : U27100WB2021PTC246718 | PAN : AALCR1619N | TAN : CALR19495A | GSTIN : 19AALCR1619N1ZT
Website : www.rashmigroup.com | Email Id : projectseamless@rashmigroup.com

Ref: RGHSPL/EC/22-23/01 Date: 10.03.2023

To,
The District Magistrate
Office of the District Magistrate,
Paschim Medinipur,
West Bengal – 721101

Sub: Intimation for obtaining Environment Clearance for an Integrated Steel Plant of 3.1 Million Ton per annum (Finished Steel) along with 230MW (80MW WHRB/TRT based +150 MW coal based) Captive Power Plant by M/s Rashmi Green Hydrogen Steel Private Limited, located at Mouza – Changual (J.L. No-360), Jethia (J.L. No- 361), Khatranga (J.L. No-362), Gopinathpur (J.L. No. 359) and Goyalara (J.L. No. 391), P.S. – Kharagpur (Local), Dist. – Paschim Medinipur, West Bengal.

Dear Sir,

With reference to the above subject, we would like to intimate you that Environment Clearance for an Integrated Steel Plant of 3.1 Million Ton per annum (Finished Steel) along with 230MW (80MW WHRB/TRT based +150 MW coal based) Captive Power Plant by M/s Rashmi Green Hydrogen Steel Private Limited, located at Mouza – Changual (J.L. No- 360), Jethia (J.L. No- 361), Khatranga (J.L. No- 362), Gopinathpur (J.L. No.- 359) and Goyalara (J.L. No.- 391), P.S. – Kharagpur (Local), Dist. – Paschim Medinipur ,West Bengal has been accorded by Ministry of Environment, Forest and Climate Change, Government of India vide EC Identification No. EC23A008WB113189 & File no- IA-J-11011/102/2022-IA-II(IND-I) dated 07.03.2023.

Environment Clearance copy is attached herewith.

This is for your kind information.

Thanking you,
For, M/s Rashmi Green Hydrogen Steel Pvt Ltd
Rashmi Green Hydrogen Steel Pvt Ltd

Authorised Signatory Director

Encl: As above

Received Contents Not Verified
10/3/2023
D.M's
Central Receipt Section,
Paschim Medinipur

o/c

RASHMI GREEN HYDROGEN STEEL PRIVATE LIMITED
Address : 9, AJC Bose Road, 1st Floor, Ideal Centre, Kolkata, West Bengal,700017
CIN : U27100WB2021PTC246718 | PAN : AALCR1619N | TAN : CALR19495A | GSTIN : 19AALCR1619N1ZT
Website : www.rashmigroup.com | Email Id : projectseamless@rashmigroup.com

Ref: RGHSPL/ EC/22-23/03

Date: 10.03.2023

To,
The Chakmakrampur Gram Panchayet
Paschim Medinipur, West Bengal

Sub: Intimation for obtaining Environment Clearance for an Integrated Steel Plant of 3.1 Million Ton per annum (Finished Steel) along with 230MW (80MW WHRB/TRT based +150 MW coal based) Captive Power Plant by M/s Rashmi Green Hydrogen Steel Private Limited, located at Mouza – Changual (J.L. No-360), Jethia (J.L. No- 361), Khatranga (J.L. No-362), Gopinathpur (J.L. No. 359) and Goyalara (J.L. No. 391), P.S. – Kharagpur (Local), Dist. – Paschim Medinipur, West Bengal.

Dear Sir,

With reference to the above subject, we would like to intimate you that Environment Clearance for an Integrated Steel Plant of 3.1 Million Ton per annum (Finished Steel) along with 230MW (80MW WHRB/TRT based +150 MW coal based) Captive Power Plant by M/s Rashmi Green Hydrogen Steel Private Limited, located at Mouza – Changual (J.L. No- 360), Jethia (J.L. No- 361), Khatranga (J.L. No- 362), Gopinathpur (J.L. No.- 359) and Goyalara (J.L. No.- 391), P.S. – Kharagpur (Local), Dist. – Paschim Medinipur ,West Bengal has been accorded by Ministry of Environment, Forest and Climate Change, Government of India vide EC Identification No. EC23A008WB113189 & File no- IA-J-11011/102/2022-IA-II(IND-I) dated 07.03.2023.

Environment Clearance copy is attached herewith.

This is for your kind information.

Thanking you,

For M/s Rashmi Green Hydrogen Steel Pvt Ltd

Rashmi Green Hydrogen Steel Pvt Ltd

Authorised Signatory Director

Encl: As above

Receiver Copy

10/3/23

Pradhan
Chakmakrampur Gram Panchayet
Kharagpur-II, Paschim Medinipur

RASHMI GREEN HYDROGEN STEEL PRIVATE LIMITED
Address 9, AJC Bose Road, 1st Floor, Ideal Centre, Kolkata, West Bengal,700017
CIN U27100WB2021PTC246716 | PAN AALCR1619N | TAN CALR19495A | GSTIN 19AALCR1619N1ZT
Website www.rashmigroup.com | Email Id projectsteelmail@rashmigroup.com

Ref: RGHSPL/ EC/22-23/02

Date: 10.03.2023

To,
The Changual Gram Panchayet
Paschim Medinipur, West Bengal

Sub: Intimation for obtaining Environment Clearance for an Integrated Steel Plant of 3.1 Million Ton per annum (Finished Steel) along with 230MW (80MW WHRB/TRT based +150 MW coal based) Captive Power Plant by M/s Rashmi Green Hydrogen Steel Private Limited, located at Mouza – Changual (J.L. No-360), Jethia (J.L. No- 361), Khatranga (J.L. No-362), Gopinathpur (J.L. No. 359) and Goyalara (J.L. No. 391), P.S. – Kharagpur (Local), Dist. – Paschim Medinipur, West Bengal.

Dear Sir,

With reference to the above subject, we would like to intimate you that Environment Clearance for an Integrated Steel Plant of 3.1 Million Ton per annum (Finished Steel) along with 230MW (80MW WHRB/TRT based +150 MW coal based) Captive Power Plant by M/s Rashmi Green Hydrogen Steel Private Limited, located at Mouza – Changual (J.L. No- 360), Jethia (J.L. No- 361), Khatranga (J.L. No- 362), Gopinathpur (J.L. No.- 359) and Goyalara (J.L. No.- 391), P.S. – Kharagpur (Local), Dist. – Paschim Medinipur ,West Bengal has been accorded by Ministry of Environment, Forest and Climate Change, Government of India vide EC Identification No. EC23A008WB113189 & File no- IA-J-11011/102/2022-IA-II(IND-I) dated 07.03.2023.

Environment Clearance copy is attached herewith.

This is for your kind information.

Thanking you,
For, M/s Rashmi Green Hydrogen Steel Pvt Ltd
Rashmi Green Hydrogen Steel Pvt Ltd

Authorised Signatory Director

Encl: As above

o/e

RASHMI GREEN HYDROGEN STEEL PRIVATE LIMITED

Address : 9, AJC Bose Road, 1st Floor, Ideal Centre, Kolkata, West Bengal,700017
CIN : U27100WB2021PTC246718 | **PAN** : AALCR1619N | **TAN** : CALR19495A | **GSTIN** : 19AALCR1619N1ZT
Website : www.rashmigroup.com | **Email Id** : projectseamless@rashmigroup.com

Ref: RGHSPL/ EC/22-23/04 Date: 10.03.2023

To,
The Lachhmapur Gram Panchayet
Paschim Medinipur, West Bengal

Sub: Intimation for obtaining Environment Clearance for an Integrated Steel Plant of 3.1 Million Ton per annum (Finished Steel) along with 230MW (80MW WHRB/TRT based +150 MW coal based) Captive Power Plant by M/s Rashmi Green Hydrogen Steel Private Limited, located at Mouza – Changual (J.L. No-360), Jethia (J.L. No- 361), Khatranga (J.L. No-362), Gopinathpur (J.L. No. 359) and Goyalara (J.L. No. 391), P.S. – Kharagpur (Local), Dist. – Paschim Medinipur, West Bengal.

Dear Sir,

With reference to the above subject, we would like to intimate you that Environment Clearance for an Integrated Steel Plant of 3.1 Million Ton per annum (Finished Steel) along with 230MW (80MW WHRB/TRT based +150 MW coal based) Captive Power Plant by M/s Rashmi Green Hydrogen Steel Private Limited, located at Mouza – Changual (J.L. No- 360), Jethia (J.L. No- 361), Khatranga (J.L. No- 362), Gopinathpur (J.L. No.- 359) and Goyalara (J.L. No.- 391), P.S. – Kharagpur (Local), Dist. – Paschim Medinipur ,West Bengal has been accorded by Ministry of Environment, Forest and Climate Change, Government of India vide EC Identification No. EC23A008WB113189 & File no- IA-J-11011/102/2022-IA-II(IND-I) dated 07.03.2023.

Environment Clearance copy is attached herewith.

This is for your kind information.

Thanking you,
For, M/s Rashmi Green Hydrogen Steel Pvt Ltd

Rashmi Green Hydrogen Steel Pvt Ltd.

Authorised Signatory Director

Encl: As above

Received
16-03-2023
PRADHAN
Lachmapur Gram Panchayat
Kharagpur-II Panchayat Samity

PARIVESH
परिवेश

"Pro-Active and Responsive facilitation by Interactive, Virtuous and Environmental Single-window Hub"

Ministry of Environment, Forest and Climate Change
Government of India

View Complaint Status:

Sno.	Issue Details	Issue/Remarks/Feedback	Resolve Details	No of Days taken	ScreenShot	Resolved View Letter	Reopen Issue
1	**Type of Issue :** EC Application Form **Ticket Id :** PAR-TIC-[illegible] **Single Window Number :** IA/WB/IND/[illegible]/2023 **Common Application Form :** **Proposal No :** IA-J-[illegible]/2023-IA-III(IND-I) **Complaint Category :** **Submission Date :** [illegible] May 2024 **Email Id :** [illegible]@gmail.com **Contact No :** [illegible] **Status :** Issue Resolved	Facing issue while filling up the [illegible]. Needed for submitting Half Yearly Compliance	**Resolved Remarks :** New module for uploading the compliance report has been released. After login click on upload compliance and submit the compliance report. **Resolved Date :** 04 Jul 2023	34	Download		
2	**Type of Issue :** EC Application Form **Ticket Id :** PAR-TIC-[illegible] **Single Window Number :** [illegible]/2023 **Common Application Form :** **Proposal No :** IA/WB/IND/[illegible]/2023 **Complaint Category :** **Submission Date :** 23 Jan 2023 **Email Id :** [illegible]@gmail.com **Contact No :** [illegible] **Status :** Issue Resolved	Dear Sir, This has reference to our proposal no IA/WB/IND/[illegible]/2022 for proposed an Integrated Steel Plant of [illegible] Million Ton per annum (Finished Steel) along with 200 MW (80 MW WHR/AFBC based + 740 MW coal based) Captive Power Plant. An EDS Appeared on 23.01.2023 and we submitted the point-wise reply of the EDS on parivesh portal. While uploading the reply of EDS an error occurred on parivesh portal. But, our application submitted while showing on uploaded document in EDS section on parivesh portal, it shows error (screenshot attached for reference). We are enclosing herewith reply of the EDS dated 23.01.2023 for your kind consideration, please. Therefore, you are earnestly requested to kindly consider our proposal in next EAC meeting. Thanking you, Yours faithfully, For M/s [illegible] Green Hydrogen Steel Private Limited Authorized Signatory [illegible] Road, [illegible] Floor, [illegible] Center, Kolkata, WB [illegible] India	**Resolved Remarks :** Kindly consult with the concerned Member Secretary. **Resolved Date :** 23 Jan 2023	0	Download		