THIRD PARTY AUDITED
CONSENT COMPLIANCE REPORT OF HIRA POWER AND STEELS LIMITED UNIT-II
BY
RELIABLE ANALYTICAL LAB
INDORE
(MADHYA PRADESH)



Compliance report of the conditions stipulated in combined consent of 03/04/2018 under section 25/26 of the of the Water (Prevention and Control of Pollution) Act 1974 and under Section 21 of the Air (Prevention and Control of Pollution) Act 1981 for production of 48,000 MT per Annum Ferro Alloys (Including low/medium Carbon Ferro Alloys) by 1 x 3.0 MVA, 1X3.6 MVA, 2X5.5 MVA AND 1X6.0 MVA submerged arc furnace and 12 MT/Heat CLU Converter or 56,000 MT per Annum Pig Iron and 20 MW Captive Power Plant vide letter No. 208/TS/CECB/2018 Naya Raipur, Dated: 03.04.2018

Consent of the board under Section 25/26 of the Water (Prevention and Control of Pollution) Act 1974

S. No.	General Conditions	Compliance
01.	All discharges authorized shall be consistent with terms and conditions of this Consent Facility expansions, production increases or process Modifications which result in new or increased discharges of pollutants must be reported by submission of a new Consent, application or if such new, or increased discharge does not violate the effluent limitations specified in the Consent, by submission to the Board details of such new or increased discharges of pollutants in which case the consent may be modified to specify effluent limitations for any pollutants not identified and limited here in the discharge of any pollutant more frequently than or at a level in excess of that identified and authorized by the Consent shall constitute a violation of the terms and conditions of the Consent.	Agreed and Noted for Compliance. We are following CEPI Guidelines as per Head Office CECB vide Order No. 8175/HO/CECB/2019 Nava Raipur, Atal Nagar dated 17/12/2019 and action plan with respect to mitigation measures for CPA is attached as **Annexure-I**.
02.	After notice and opportunity for the hearing, this consent may be modified, suspended or revoked by the Board in whole or in part during its term for cause including, but not limited to the following : - (a) Violation of any terms and conditions of this Consent. (b) Obtaining this Consent by misrepresentation of failure to disclose fully all-relevant facts. (c) A change in any condition that requires temporary or permanent reduction or elimination of the Authorised	Agreed and Noted for Compliance.

	discharge.	
03.	Notwithstanding para (2) above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established for a toxic pollutant which is present in the discharge authorized here in and such standard or prohibition is more stringent than any limitation upon such pollutant in this Consent the Consent shall be revised or modified in accordance with the toxic effluent standard or prohibition that the Board may consider and the applicant shall be so notified.	Agreed.
04.	The applicant shall allow the staff of Chhattisgarh Environment Conservation Board and/or their authorized representative upon the Presentation of credentials. (a) To enter upon the applicant's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this Consent. (b) To have access to and copy at reasonable time any records required to be kept under the terms and conditions of this Consent. (c) To inspect at reasonable time any monitoring equipment or monitoring method required in this Consent : or (d) To sample at reasonable time any discharge of pollutants.	Agreed.
05.	The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities of system installed or used by him to achieve compliance with the terms and conditions of this Consent.	Complied.

06.	The issuance of this Consent does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central State or local laws or regulation.	Noted and Agreed.
07.	The Consent does not authorize or approve the construction of any physical structures of facilities or the undertaking of any work in any water course.	Noted and Agreed.
08.	The specific effluent limitations and other pollution controls applicable to the discharge permitted here in are set forth below as specific conditions. Also set forth below are self-monitoring and reporting requirements. Unless otherwise specified, the applicant shall submit duplicate original copies of all reports to the Chhattisgarh Environment Conservation Board. Except for data determined to be confidential all such reports shall be available for public inspection at the office of the Chhattisgarh Environment Conservation Board. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provide for in section 42 of the Act.	Complied.

B.	**SPECIAL CONDITIONS :-**	
	Initial Effluent limitation during the period beginning on the effective date of this consent and lasting until one calendar year discharge from outfalls shall be limited and monitored by the applicant as specified below : (a) The following shall be limited by the applicant as specified.	No wastewater is being discharged outside factory premises. Waste water generated from softener backwash, cooling water blowdown and DM Plant reject etc is being used for sprinkling on the road, raw material handling area and ash conditioning. Hence, Zero liquid discharge

		S. No.	Effluent Characteristics	Discharge Limitation				Monitoring Requirements		Daily/ Weekly/Monthly/Tri-monthly.	condition is maintained. Latest Monitoring report of effluent water is attached as **Annexure II.**
				Average		Maximum		Frequency of Measurement	Type of Sample		
				Mg /l	Kg/ Day	Mg/ l	Kg/ Day				
										Grab / 24 Hours	

Composite

In addition to above discharge shall be limited and monitored as specified below :

S. No.	Effluent Characteristics	Discharge Limitation				Monitoring Requirements	
		Average		Maximum		Frequency of Measurement	Type of Sample
		Mg/l	Kg/Day	Mg/l	Kg/Day		

1. For the purpose of this sub-section, the daily average discharge is the total discharge by weight during the calendar month divided by he number of days in month the production or commercial facility was operating for the purpose of the sub-section the daily maximum discharge means the total discharge by weight during any calendar day.

(b) The pH shall not be less than 5.5 or greater than 9.0 .

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<td>2.</td>
<td>Final Effluent Limitation – During the period beginning from date of issue of consent letter and lasting until the date of expiration of this Consent, discharge from the outfalls shall be limited and monitored by the Applicant as specified below :-

(a) The following shall be limited and monitored by the Applicant as specified :</td>
<td rowspan="2">No effluent is being discharged outside the factory premises. Zero liquid discharge condition has been adopted. Latest Monitoring report of effluent water is attached as Annexure II.</td>
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<tr><td rowspan="2">S.No.</td><td rowspan="2">Effluent Characteristics</td><td colspan="4">Discharge Limitation</td><td colspan="2">Monitoring Requirements</td></tr>
<tr><td colspan="2">Average</td><td colspan="2">Maximum</td><td rowspan="2">Frequency of Measurement</td><td rowspan="2">Type of Sample +</td></tr>
<tr><td></td><td></td><td>Mg/l</td><td>Kg/ Day</td><td>Mg/l</td><td>Kg/ Day</td></tr>
<tr><td>1</td><td>B.O.D.</td><td>--</td><td>--</td><td>30</td><td>0.3</td><td rowspan="3">Monthly</td><td rowspan="3">24 Hours Composite</td></tr>
<tr><td>2</td><td>C.O.D.</td><td>--</td><td>--</td><td>250</td><td>2.5</td></tr>
<tr><td>3</td><td>S.S.</td><td>--</td><td>--</td><td>100</td><td>1.0</td></tr>
<tr><td></td><td colspan="5">pH 5.5 to 9.0

Flow : 10.0
(Industrial & Domestic)

Cum/Day</td><td>Daily</td><td>Grab</td></tr>
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Daily/Weekly/Monthly/Tri-monthly

Grab / 24 Hours Composite

Additional, outfalls shall be monitored as follows :-

(i) Flow, Temperature and Total Solids : One per month

(ii) Grab Samples Maximum discharge temperature above upstream receiving water shall be in accordance with the standard of ISI at 40^0 C.

(iii) Uninform as per IS / 2490 at 40^0 C.

The temperature shall be monitored once per month of each outfall. For the purpose of the sub-section, the daily average is the</td>
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	total discharge by weight during calendar month divided by the number of days in month that the production or commercial facility was operating for the purpose of this sub-section, the daily maximum discharge means the total discharge by weight during any calendar day. (b) The pH shall not be less than 5.5 or greater than 9.00 for outfalls. The samples are taken as monthly, grab samples.	
3.	(a) Schedule of Compliance for effluent Limitation – The Applicant shall achieve compliance with the effluent limitation; specified above for discharge from outfalls in accordance with the following schedule : (i) Report of Progress : Tri-Monthly. (ii) Completion of final plans by (iii) Award of Contract of other commitment of financing. (iv) Commencement of construction by (v) Report of construction progress (vi) Completion of construction by (vii) Attainment of operational level by The Applicant shall submit to the Consent Issuing Authority the required report of progress or where a specific action is required in (a) above to be taken by a certain date a written notice of compliance or non-compliance with each of the above scheduled dates, post marked not later than 14 days following each elapsed date. Each notice of compliance shall include the following : (1) A short description of the non-compliance. (2) A description of any action taken or proposed by the Applicant to comply with the elapsed scheduled requirement without further delay. (3) An estimate of any factor which tend to explain or mitigate the non-	No effluent is being discharged outside the factory premises. Zero liquid discharge condition has been adopted.

	compliance, and (4) An estimate of the date, the Applicant will comply with the elapsed scheduled requirement and assessment of the possibility that the Applicant will meet the next scheduled requirement time.	
4.	Compilation of monitoring Data (a) Samples and measurements taken to meet the monitoring requirements specified above shall be representative of the volume and nature of monitored discharge. (b) Following promulgation of guidelines establishing test procedures for the analysis of pollutants, all sampling and analytical methods used to meet monitoring requirements, specified above, shall conform to such guidelines. Unless otherwise specified sampling and analytical methods shall conform to the latest edition of the Indian Standard specifications and where it is not specified the guidelines as per standard methods for the examination of Water & Waste Water 13th Edition of the American Public Health Association, New York, U.S.A. shall be used. (c) The Applicant shall take samples and measurement to meet the monthly requirements, specified above, at the location indicated below :- **POINT OF SAMPLING** (i) Outfalls of waste. (ii) 100 Metres from Point of confluence, downstream to river or lake.	No effluent is being discharged outside the factory premises. Zero liquid discharge condition has been adopted.
5.	Recording of Monitoring activities and Results : (a) The Applicant shall make and maintain records of all information resulting from monitoring activities by this Consent. (b) The Applicant shall record for each measurement of sample taken pursuant to the requirements of this Consent the following information : (1) The date, exact place and time of sampling (2) The dates on which analysis was performed (3) Who performed the analysis? (4) The analytical techniques or methods used and (5) The result of all required analysis (c) If the Applicant monitors any Pollutant more frequently as is required by this Consent, he shall include the results of such monitoring in the calculation and reporting of values required in the discharge monitoring reports, which may be prescribed by the Board, such increased frequency	No effluent is being discharged outside the factory premises. Zero liquid discharge condition has been adopted.

	shall be indicated on the Discharge Monitoring Report Form (d) The Applicant shall retain, for a minimum of 3 years, all records of monitoring activities and result, including all records of calibration and maintenance of instrumentation and original strip chart regarding continuous monitoring instrumentation. The period of retention shall be the extent during the course of any unresolved litigation regarding the discharge of pollutants by the Applicant or when requested by the Central or State Board.	
6.	Reporting of Monitoring Results : (a) Monitoring information required by this Consent shall summarized and reported by submitting a Discharge Monitoring Report Form, duly filled in and signed, to the Board's Office at the following address :-Chhattisgarh Environment Conservation Board Paryavas Bhawan, Sector-19, Naya Raipur (C.G.) (b) Each submitted Discharge Monitoring Report shall be signed as follows :- (1) If submitted by Corporation by a Principal Executive Officer of at least the level of Vice-President or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the discharge Monitoring Report originates. (2) If submitted by a partnership firm, by a general partner. (3) If submitted by a sole Proprietor, the Proprietor. (4) If submitted by a Municipal, State or Central Government or other Public Enterprises, by a Principal Executive Officer, ranking elected official commanding officer, or other duly authorized employee. (c) All information submitted on the Discharge Monitoring Form shall be based upon measurements and sampling carried out during the three previous calendar months. The first Discharge Monitoring Report shall be submitted for a period ending 60 days from issuance. Thereafter, the reporting period shall end on the last date of each month. The Applicant shall submit a Discharge Monitoring Report post marked not later than 28th day of the month following each completed reporting period.	No effluent is being discharged outside the factory premises. Zero liquid discharge condition has been adopted.

7.	Limitation of Discharge of Oil Hazardous Substance in harmful quantities : The Applicant shall not discharge Oil in quantities defined as harmful in regulations. In addition, the Applicant shall not discharge hazardous substance into natural water course in quantities defined as harmful in regulations promulgated by the Board. Nothing in this Consent shall be deemed to preclude the Institution of any legal action nor relieve the Applicant from any responsibilities, liabilities, or penalties, to which the Applicant is or may be subject to clauses.	Agreed and Noted for Compliance.
8.	Limitation of visible Floating Solids and Foam : During the period beginning date of issuance and lasting until the date of expiration of this Consent, the Applicant shall not discharge floating solids or visible Foam.	Agreed and Noted for Compliance.
9.	Disposal of Collected Solids : a) Intake Water Treatment : Solid Sludge's, dirt, silt or other pollutant separated from or resulting from treatment of intake or supply waters prior to use by the Applicant shall be disposed off in such a manner as to prevent any pollutant from such materials from entering any such water. Any Live Fish or other animals collected or trapped as a result of intake water screening or treatment may be returned to water. b) Waste Water Treatment, Solid sludges, filter backwash or other pollutant removed from or resulting from treatment or control of waste water shall be disposed of in such a manner as to prevent any pollutants from such materials from entering natural water.	Agreed and Noted for Compliance.
10.	Non-compliance with Effluent Limitations : (a) If, for any reason, the Applicant does not comply with or will be unable to comply with or will be unable to comply with any daily maximum effluent limitations specified in this Consent, the Applicant shall immediately notify the Consent Issuing Authority or his designee by telephone No.0771-2512220 and provide the Consent issuing Authority with the following information in writing within 5 days of such notification : (1) Cause of non-compliance. (2) A description of the non-complying discharge including its impact upon the receiving water.	Agreed and Noted for Compliance.

	(3) Anticipated time, of non-compliance is expected to continue or if such condition has been corrected, the duration of non-compliance. (4) Steps taken by the Applicant to reduce and eliminate the non-complying discharge and; (5) Steps to be taken by the Applicant to prevent recurrence of conditions of non-compliance. (b) The Applicant shall take all responsible steps to minimize any adverse impact to natural water resulting from non-compliance with any effluent limitation specified in this Consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge. (c) Nothing in this Consent shall be construed to relive the Applicant from Civil or Criminal penalties for non-compliance, whether or not such non-compliance is due to factors beyond his control such as equipment break down electric power failure, accident or natural disaster.	
	SPECIAL CONDITIONS :-	
11.	Provision for Electric Power Failure : The Applicant shall either (a) No later than certify in writing to the Consent Issuing Authority that the Applicant has installed or provided for an alternative electric power sources sufficient to operate all facilities utilized by the Applicant to maintain compliance with the terms and conditions of the Consent; or b) No later than 30 days after the effective date of his Consent, certify in writing to the Consent Issuing Authority that upon the reduction, loss or failure of one or more of the primary sources of electric power to any facilities utilized by the Applicant to maintain compliance with the terms and conditions of his consent, the Applicant shall halt, reduce or otherwise control production and/or all discharges in order to maintain compliance with the terms and conditions of this Consent.	Agreed and Noted for Compliance.

12	Prohibition of By Pass of Treatment Facilities: The diversion or by-pass of any discharge from facility utilized by the Applicant to maintain compliance with the terms and conditions of this Consent is prohibited except : (i) Where unavoidable to prevent loss of life severe property damage, or (ii) Where excessive storm drainage or run off would damage any facilities necessary for compliance with the terms and conditions of this Consent. The Applicant shall immediately notify the Consent Issuing Authorities in writing of each such diversion or by-ass in accordance with the procedure specified above for reporting non-compliance.	Agreed and Noted for Compliance.
13.	Spill Prevention and Containment Plan : Within 90 days of the effective date of the Consent, the Applicant shall prepare and submit to the Consent Issuing Authority, a Spill Prevention Containment and Countermeasure Plan for the facility covered by this Consent. Such plan shall include the following information and procedures relating to the prevention of spills and unauthorized discharges or oil and hazardous substances. a) A description of a reporting system to be used to notify immediately persons responsible for management of a facility and appropriate State and Central Authorities. b) A description of equipment or facilities (including overall facility) for the prevention, containment of spills and unauthorized discharge. c) A list of all oil and hazardous materials used processed or stored at the facility including the normal quantity maintained on the premises for each listed material. d) A brief description of any spills or unauthorized discharge which occurred during the 36 months period preceding the effective date of this Consent and subsequent measures taken by the Applicant or reduce the possibility of further spills or unauthorized discharges; and e) An implementation schedule for additional equipment or facilities which might be required for sub para (b) above but which are not yet operational.	Agreed and Noted for Compliance.
	SPECIAL CONDITIONS :-	
1	Industry shall upgrade/modify the existing effluent treated system and shall operate and maintain the effluent treatment system regularly. Industry shall ensure treated effluent quality within the standards prescribed by the Board published in the Gazette Notification dated 25.03.1988. All the effluent treatment system shall be kept in good running condition all the time and failure (if any) shall be immediately rectified without delay otherwise some alternate arrangement shall be made. In the event of any failure of any Pollution Control System adopted by the Industry, the respective Production Unit shall not be restarted until the control measure are rectified to achieve	Waste water generated from cooling water & blow down is being used for sprinkling on the road and raw material handling area, Ash conditioning etc. Zero Liquid discharge has been adopted. No waste

	the desired efficiency. Industry shall not discharge any treated/untreated effluent into the river or any surface water bodies. No effluent shall be discharged outside of the Factory premises in any circumstances; hence zero discharge conditions shall be maintained all the time.	water is being discharged outside the factory premises. Hence zero discharge condition is maintained all the time.
2	Industry shall submit Monitoring Report of effluent regularly. Industry shall set up Laboratory facility for collection and analysis of environmental samples under the supervision of Competent Technical personnel.	Is being complied with. Please refer effluent monitoring report attached as **Annexure-II.**
3	Industry shall install separate electric metering arrangements with time totalizer for the running of Pollution Control device/devices. These arrangements should be made in such a fashion that any non-functioning of pollution control device/devices shall immediately stop the electric/fuel supply to the production unit and shall remain tripped till the pollution control device/devices are made functioning again / rectified to achieve the desired efficiently. The record of power and chemical consumption for running the pollution control equipment shall be submitted to the Board every month. A separate log-book shall be maintained for the same.	Separate electric metering arrangements for the running of pollution control devices have been provided. The record of power consumption and chemical consumption for running of pollution control equipment is being maintained. Power consumption report for F.Y. 2023-2024 for running the pollution control Equipments is attached as **Annexure-III.**
4	Industry shall take effective steps for safe disposal of solid wastes and sludge. Oily sludge shall be sold to authorized recyclers / re-processors for proper disposal through incineration., All other solid waste including broken refractory mass shall be properly dispose off in an environment.-friendly manner.	Is being complied with. Collection, storage, handling, transportation and disposal are being done scientifically. Fe-Mn slag is being used as raw material for the production of Si-Mn and Si-Mn slag is used as aggregate for civil works & filling of low lying area.
5	All internal roads shall be black topped. Good housekeeping practices shall be adopted by the Industry.	All the internal roads are cement concreted. Good housekeeping practices

		have been adopted. Regular sprinkling of water and road cleaning is being done with the help of pneumatic sweeping machine. Photographs of Concrete road, water sprinkler tank, good housekeeping and Pneumatic sweeping machine etc are attached as **Annexure-IV.**
6	Industry shall follow the guidelines, notification etc. for utilization of fly ash / bottom ash issued by the Ministry of Environment, Forest & Climate Charge, Government of India / Central Pollution Control Board / State Government /. Chhattisgarh Environment Conservation Board from time to time. Industry shall abide by the decisions taken by the Ministry of Environment, Forest & Climate Charge, Government of India / Central Pollution Control Board / State Government /. Chhattisgarh Environment Conservation Board from time to time regarding use of fly ash/bottom ash.	Is being complied with. 100% utilization of fly ash for manufacturing of bricks to fly ash brick manufacturers for free of cost. Financial year 2023-24 Yearly report is attached as **Annexure-V.**
7	Industry shall submit characterization report of all the waste generated. As per characterization report, if any waste comes under the purview of Hazardous and Other Wastes (Management and Trans Boundary Movement) Rules, 2016. Industry shall obtain Letter of Authorization under Hazardous and Other Wastes (Management and Trans Boundary Movement) Rules, 2016 from the Board.	Authorization vide Boards letter No.3641/HSMD/HO/CECB/2020 dated 21.07.2020 under Hazardous Waste Management, Handling & Transboundary Movement Rules, 2008 and amendment has been obtained for the following wastes : 1. Used / Spent oil (5.1) 2. Spent ion exchange resin containing toxic metals (34.2) 3. Empty Barrels/containers/liners

		contaminated with hazardous chemicals/wastes.
8	Garland drains with appropriate check dams shall be provided all along the Iron Ore/Fines, Coal/Char-Dolochar Storage areas and Solid Wastes temporary storage area to avoid any possibility of erosion during rain Garland drain (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains. The surface run-off shall be de-silted through a serious of check dams and drains. Storm water flowing over Plant premises shall not be allowed to join nearby Nallah of any river. The treated storm water shall be used either in process of for land application.	No wastewater is being discharged outside factory premises. Waste water generated from softener backwash, cooling water blowdown and DM Plant reject etc is being used for sprinkling on the road, raw material handling area and ash conditioning. Hence, Zero liquid discharge condition is maintained.
9	Industry shall adopt rainwater-harvesting technique in Factory premises for recharge of ground water. Industry shall obtain necessary permission from Central Ground Water Authority for drawl of under-ground water (if required).	Rainwater harvesting pits has been constructed for recharging of groundwater and No Objection Certificate has been obtained from Central Ground Water Authority for extraction of groundwater is attached as **Annexure-VI.**
10	Industry shall install Fly Ash Brick Plant of at least 20,000 Nos. of Bricks per day on or before July 2018.	We had installed fly ash brick plant in factory premises with capacity of 50,000 bricks per day. But after shutdown of our captive power plant it was closed. Nowadays, 100 % Fly ash is given to brick manufacturers for manufacturing of bricks.

		Ash compliance report 2023-24 audited by NIT Uttarakhand is attached as **Annexure- VII**
11	Industry shall ensure transportation of raw material like Coal, Iron Ore etc. In mechanically covered vehicles on before 10.09.2018.	All the vehicles are being transported in covered vehicles only. Photographs of covered trucks are attached as **Annexure-VIII**.
12	Industry shall comply the provisions stipulated in Notification No.S.O. 3305(E) dated 07.12.2015 issued by the Ministry of Environment, Forest and Climate Change for Power Plant.	Being Complied.
13	Extensive Tree Plantation with Local Broad Leaf Plant species at all around the Factory premises and in the open areas available within the Factory premises shall be carried out. Industry shall abide by the decisions taken by the Ministry of Environment, Forest and Climate Change, Government of India / Central Pollution Control Board / State Government / Chhattisgarh Environment Conversation Board from time to time in this regard.	As we are following CEPI Guidelines as per Head Office CECB vide Order No. 8175/HO/CECB/2019 Nava Raipur, Atal Nagar dated 17/12/2019 and action plan with respect to mitigation measures for CPA is attached as **Annexure-I.** Till date we have planted trees as below:- Inside Plantation= 17253 No. (in 14.65 Acres) Outside Plantation=3165 No. (in 3.28 Acres) Total Plantation=20,418 No. We would like to inform you that we have achieved the target of more than 40% greenbelt. We are increasing the density of existing plantation inside

		the plant premises Greenbelt Length towards the west side is ranging from 40m to 160m (including tall trees and good canopy).Damaged plants are being replaced with new plants every year.
14	Industry shall use Fly Ash brick, fly ash block and fly ash based products in the construction/repairing activities. Industry shall also use fly ash for filling low-lying areas within the Plant premises.	Complied.
15	Industry shall establish an Environmental Management Cell to carry out function relating to environment management under the supervision of Senior Executive, who is directly reporting to the Head of the Organization. Industry shall set up Laboratory facility for collection and analysis of environmental samples under the supervision of the Competent Technical personnel.	Agreed and Complied.
16	Necessary fund shall be provided for implementation of the above conditions of the Board and for environmental safeguards. The funds earmarked for environmental protection measures shall be kept in separate account and not diverted for any other purpose.	Agreed and Complied.
17	Industry shall obtain statutory clearances/licenses from the concerned Central Government/State Government Departments, Board, Bodies and Corporations etc. Industry shall follow direction issued by the Central Government/State Government, Central Pollution Control Board / Chhattisgarh Environment Conservation Board from time to time regarding control of Water and Air Pollution and for Environmental Conservation.	Complied
18	The issuance of this 'Consent to Operate' of Board does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State or Local Laws or Regulations.	Complied

19	Any change in product, production capacity, process, raw materials used, project profile etc. shall be intimated to the Board and prior permission of the Board shall be obtained for the same.	Complied
20	The Board reserves the right to amend/cancel any of the above conditions, stringent the emission/effluent limits stipulated above and add new conditions as and when deemed necessary in the interest of environmental protection, change in the project profile or non-satisfactory implementation of the stipulated conditions etc.	Agreed
21	This Renewal of Consent being issued under the "Scheme of Auto-Renewal of Consent" of the Board issued vide Office Order No.5734 dated 24.02.2016 as per Self Certificate submitted by the Authorized Signatory, Shri D.P. Singh, Executive Director of M/s. Hira Power and Steels Limited Unit-II, Urla Industrial Area, Urla, Raipur (C.G.).	We are regularly submitting third party audited consent compliance report to the board.
22	The Chhattisgarh Environment Conservation Board reserves the right to revoke the Consent at any time for any violation/non-compliance.	Agreed
23	In case, if the capital investment is increased by such amount that the total investment exceeds the range for which renewal fees has been paid, the Industry shall have to pay the differential amount of renewal fees for the corresponding block years.	Agreed
24	In case, the prescribed fee payable is amended in future, the Industry shall be liable to pay the differential amount for corresponding block years.	Complied

Consent of the board under Section 21 of the Air (Prevention and Control of Pollution) Act 1981

S. No.	Terms & Conditions	Compliance
01.	Industry shall install appropriate air pollution control Equipments to control emission of air pollutants at all points of emission. Industry shall effectively operate and regularly maintain the existing pollution control systems to achieve particulate matter emission less than 50 mg/Nm^3 all the time. The particulate matter emission from CLU Converter shall not exceed 40 mg/Nm^3/ The particulate matter emission from other units shall not exceed 50 mg/Nm^3 at any point of time under any circumstance. Effective steps shall be taken to control fugitive emission inside the factory premises. Industry shall maintain the ambient air quality within the factory premises within the prescribed limit. All the air pollution control system shall be kept in good running condition all the time and failure (if any) shall be immediately rectified without delay; otherwise similar alternative arrangement shall be made. Chhattisgarh Environment Conversation Board may further stipulate stringent particulate matter emission limit depending upon environmental conditions.	Appropriate air pollution control systems are being operated and maintained to ensure the particulate matter. Emission from point sources below 25 mg/Nm^3. All the effective steps to control the fugitive emission inside our factory premises. Fogging system has been provided to conveying system and all the transfer points. Photographs of Pollution Measure Equipments, Pollution Control Equipments & Fugitive Control Measures are attached as **Annexure-IX.**

02.	Industry shall install and operate appropriate air pollution control Equipments regularly to control the dust emission from Coal Crusher, product house, all transfer points / junction points, stock house, cooler discharge, coal injection, raw material handling, fuel/chair/dolochar handling and solid waste handling areas etc.	Water sprinkling system, fogging system, covered shed and mist canon system have been provided to control the dust emission in the plant premises. Photographs of Pollution Measure Equipments, Pollution Control Equipments & Fugitive Control Measures are attached as **Annexure-IX.**
03.	All Conveyor system all transfer points, all junction points etc. shall be covered to avoid fugitive emission. Industry shall install appropriate dust suppression system at coal, iron, ore, fly/bottom ash and char/dolochar unloading/loading and conveying system etc.	All transfer points and junctions are covered. Fogging system and mist canon system is also installed along with the water sprinkling arrangements. Photographs of Pollution Measure Equipments, Pollution Control Equipments & Fugitive Control Measures are attached as **Annexure-IX.**
04.	The height of stack attached to existing units shall not be less than as published in the Gazette Notification GSR 414(E) dated 30.05.2008 or Notification/Guidelines of Central Pollution Control Board or based on H=14(Q)0.3 (where "Q" is emission rate of SO_2 in Kg./Hr. and "H" is Stack height in meters). Adequate arrangement for stack emission monitoring shall be provided with the stack. Minimum height of stack shall not be less than 30 Metres.	The height of stacks attached to existing units has been provided as per prescribed norms. All the stacks are connected to CPCB/CECB Server. Adequate arrangements for stack emission monitoring have been provided with the stack. Online Continuous emission monitoring system is installed and connected to CECB & CPCB Server in all the stacks of Ferro Alloys, CLU Converter and 20 MW Captive power plant. Latest Monitoring report of all the stacks is attached as **Annexure-X.**
05.	The ambient air quality within the factory premises shall not exceed the standards prescribed by the Board.	1 No of Continuous Ambient air quality monitoring system is installed and connected with CECB server. Ambient air quality monitoring report is attached as **Annexure-XI.**
06.	Industry shall install separate electric metering arrangement with time totalizer for the running of pollution control device(s). This arrangement shall be made in such a fashion that any non-functioning of pollution control devices shall immediately stop the production and shall remain tripped till the pollution control device/devices are made functional again/rectified to achieve the desired efficiency. The record of power and	Separate electric metering arrangements for the running of pollution control devices have been provided. The record of power consumption and chemical consumption for running of pollution control equipment is being maintained. Power consumption report for F.Y. 2023-2024 for running the pollution control Equipments is attached as **Annexure-III.**

	chemical consumption for running the pollution control Equipments shall be submitted to Board every month. A separate logbook shall be maintained for the same.	
07.	All internal roads shall be black topped. Good housekeeping practice shall be adopted by the Industry.	All the internal roads are cement concreted. Good housekeeping practices have been adopted. Regular sprinkling of water and road cleaning is being done with the help of pneumatic sweeping machine. Photographs of Concrete road, water sprinkler tank, good housekeeping and Pneumatic sweeping machine etc are attached as **Annexure-IV.**
08.	Industry shall take effective steps for safe disposal of solid wastes and sludge. Oily sludge shall be sold to authorized recyclers / re-processors for proper disposal through incineration., All other solid waste including broken refractory mass shall be properly dispose off in an environment.-friendly manner.	Is being complied with. Collection, storage, handling, transportation and disposal are being done scientifically. Fe-Mn slag is being used as raw material for the production of Si-Mn and Si-Mn slag is used as aggregate for civil works & filling of low lying area.
09.	Industry shall follow the guidelines, notification etc. for utilization of fly ash / bottom ash issued by the Ministry of Environment, Forest & Climate Charge, Government of India / Central Pollution Control Board / State Government /. Chhattisgarh Environment Conservation Board from time to time. Industry shall abide by the decisions taken by the Ministry of Environment, Forest & Climate Charge, Government of India / Central Pollution Control Board / State Government /. Chhattisgarh Environment Conservation Board from time to time regarding use of fly ash/bottom ash.	Is being complied with. 100% utilization of fly ash for manufacturing of bricks to fly ash brick manufacturers for free of cost. Please find the attached 2023-24 Yearly report as **Annexure-V.**
10.	Industry shall ensure transportation of raw material like Coal, Iron Ore etc. In mechanically covered vehicles on before 10.09.2018.	Fully covered mechanical vehicles are presently not available in the market. Manual Tarpaulin covered trucks are used whose photos are attached as **Annexure-VIII.**
11.	Industry shall install Fly Ash Brick Plant of at least 20,000 Nos. of Bricks per day on or before	We had installed fly ash brick plant in factory premises with capacity of 50,000 bricks per

	July 2018.	day. But after shutdown of our captive power plant it was closed. Nowadays, 100 % Fly ash is given to brick manufacturers for manufacturing of bricks. Copy of Ash compliance report by NIT Uttarakhand is attached as **Annexure-VII.**
12.	Industry shall comply the provisions stipulated in Notification No. S.O. 3305(E) dated.07.12.2015 issued by the Ministry of Environment, Forest and Climate Change for Power Plant.	Complied
13.	Industry shall submit characterization report of all the waste generated. As per characterization report, if any waste comes under the purview of Hazardous and Other Wastes (Management and Trans Boundary Movement) Rules, 2016. Industry shall obtain Letter of Authorization under Hazardous and Other Wastes (Management and Trans Boundary Movement) Rules, 2016 from the Board.	Authorization vide Boards letter No.3641/HSMD/HO/CECB/2020 dated 21.07.2020 under Hazardous Waste Management, Handling & Transboundary Movement Rules, 2008 and amendment has been obtained for the following wastes : 1. Used / Spent oil (5.1) 2. Spent ion exchange resin containing toxic metals (34.2) 3. Empty Barrels/containers/liners contaminated with hazardous chemicals/wastes.
14.	Industry shall provide proper arrangement to control the noise pollution. Industry shall install appropriate noise barriers/control measures including acoustic hoods, silences, enclosures etc. on all sources of noise generation to control the noise. The noise level shall not exceed the limit 75 dB(A) during the day time and 70 dB(A) during the night time within the plant premises. Adequate measures shall be taken for control of noise levels below 85 dB(A) in the work environment.	Complied. Latest noise monitoring report is attached as **Annexure-XII.**
15.	Industry shall install continuous online stack emission monitoring system (opacity meter) with calibration facility in all the stack(s) and online ambient air quality monitoring stations (continuous ambient air quality monitoring stations). Adequate number of permanent online ambient air quality monitoring stations (at-least four) shall be setup in the downwind direction as well as where maximum ground level concentration of SPM, RPM (PM10 and PM2.5), NOX, CO and SO2 are anticipated in consultation	As we are following CEPI Guidelines as per Head Office CECB vide Order No. 8175/HO/CECB/2019 Nava Raipur, Atal Nagar dated 17/12/2019 and action plan with respect to mitigation measures for CPA is attached as **Annexure-I**. Continuous online stack emission monitoring system (Opacity meter) have been provided to

	with the Board. Monitoring network shall be designed taking into account the land use pattern, location of the stacks, meteorological conditions and topographic features including existing ambient air quality data. Data on ambient air quality and stack emission shall be submitted to the Board every month.	the common stack attached to 3.0 & 3.6 MVA furnaces, stack attached to 6.0 MVA furnace, Common stack attached to 2 x 5.5 MVA furnaces, stack attached to CLU converter and Stack attached to 20 MW Captive Power Plant which is connected to CECB & CPCB Servers. & 1 No of Continuous Ambient air quality monitoring system is installed and connected with CECB server. Data on and stack emission and ambient air quality is being submitted to the Board every month. Stack monitoring report and Ambient monitoring report is attached as **Annexure- X & XI.**
16.	Extensive Tree Plantation with Local Broad Leaf Plant species at all around the Factory premises and in the open areas available within the Factory premises shall be carried out. Industry shall abide by the decisions taken by the Ministry of Environment, Forest and Climate Change, Government of India / Central Pollution Control Board/State Government/Chhattisgarh Environment Conversation Board from time to time in this regard.	Till date we have planted trees as below:- Inside Plantation= 17253 No. (in 14.65 Acres) Outside Plantation=3165 No. (in 3.28 Acres) Total Plantation=20,418 No. We would like to inform you that we have achieved the target of more than 40% greenbelt. We are increasing the density of existing plantation inside the plant premises Greenbelt Length towards the west side is ranging from 40m to 160m (including tall trees and good canopy).Damaged plants are being replaced with new plants every year.
17.	Industry shall use Fly Ash brick, fly ash block and fly ash based products in the construction/repairing activities. Industry shall also use fly ash for filling low-lying areas within the plant premises.	Complied

18.	Industry shall establish an Environmental Management Cell to carry out function relating to environment management under the supervision of Senior Executive, who is directly reporting to the Head of the Organization. Industry shall set up Laboratory facility for collection and analysis of environmental samples under the supervision of the Competent Technical personnel.	Complied
19.	Necessary fund shall be provided for implementation of the above conditions of the Board and for environmental safeguards. The funds earmarked for environmental protection measures shall be kept in separate account and not diverted for any other purpose.	Complied
20.	Industry shall obtain statutory clearances/licenses from the concerned Central Government/State Government Departments, Board, Bodies and Corporations etc. Industry shall follow direction issued by the Central Government/State Government, Central Pollution Control Board / Chhattisgarh Environment Conservation Board from time to time regarding control of Water and Air Pollution and for Environmental Conservation.	Complied
21.	The issuance of this 'Consent to Operate' of Board does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State or Local Laws or Regulations.	Complied
22.	Any change in product, production capacity, process, raw materials used, project profile etc. shall be intimated to the Board and prior permission of the Board shall be obtained for the same.	Complied
23.	The Board reserves the right to amend/cancel any of the above conditions, stringent the emission/effluent limits stipulated above and add new conditions as and when deemed necessary in the interest of environmental protection, change in the project profile or non-satisfactory	Agreed

	implementation of the stipulated conditions etc.	
24.	This Renewal of Consent being issued under the "Scheme of Auto-Renewal of Consent" of the Board issued vide Office Order No.5734 dated 24.02.2016 as per Self Certificate submitted by the Authorized Signatory, Shri D.P. Singh, Executive Director of M/s. Hira Power and Steels Limited Unit-II, Urla Industrial Area, Urla, Raipur (C.G.).	We are regularly submitting third party audited consent compliance report to the board.
25	The Chhattisgarh Environment Conservation Board reserves the right to revoke the Consent at any time for any violation/non-compliance.	Agreed
26	In case, if the capital investment is increased by such amount that the total investment exceeds the range for which renewal fees has been paid, the Industry shall have to pay the differential amount of renewal fees for the corresponding block years.	Agreed
27	In case, the prescribed fee payable is amended in future, the Industry shall be liable to pay the differential amount for corresponding block years.	Agreed

Compliance report of the conditions stipulated in the consent of the board issued under section 25/26 of the of the Water (Prevention and Control of Pollution) Act 1974 and under Section 21 of the Air (Prevention and Control of Pollution) Act 1981 vide letter no. 968/TS/CECB/2023 Nava Raipur, Atal Nagar, Dated 16/05/2023 for production of Ferro Alloys (Including low/medium Carbon Ferro Alloys and Alumino Thermic process- 600 MT/Annum for production of Low/Medium Carbon Ferro Manganese (Ferro Alloy)) 18,000 Tonnes per Annum and Ferro Alloys – 30,000 MT/Annum or Pig Iron from 2 X 5.5 MVA Submerged arc furnaces - 56,000 MT per Annum and 20 MW Captive Power Plant

Consent of the board under Section 25/26 of the Water (Prevention and Control of Pollution) Act 1974

S.No	Additional Conditions	Compliance
1.	Production capacity of Ferro Alloys (including Low / Medium Ferro Alloys) shall not be enhanced from 18,000 Metric Tonnes Per Annum under any	We agree. Production capacity of Ferro Alloys will not be enhanced in any circumstances from the granted

<table>
<tr><td></td><td>circum-stances after installation of Alumino Thermic Process - 600 Metric Tonnes/Annum for production of Low / Medium Carbon Ferro Manganese (Ferro Alloy), failing which, this consent shall be treated as null & void. The products / total production capacity shall not exceed the capacity for which consent has previously been issued.</td><td>permission by the board i.e. 48000 TPA Ferro Alloys including 18000 TPA Low/Medium Carbon Ferro Alloys as per our Amalgamated consent vide letter no 208/TS/CECB/2018 dated 03.04.2018. Last five years data of the production quantity is mentioned below:-
<table>
<tr><td>Ferro alloys Production</td><td>Year</td></tr>
<tr><td>45359.06 MT</td><td>2019-20</td></tr>
<tr><td>40006.52 MT</td><td>2020-21</td></tr>
<tr><td>47934.43 MT</td><td>2021-22</td></tr>
<tr><td>47850.16 MT</td><td>2022-23</td></tr>
<tr><td>63982.21 MT</td><td>2023-24</td></tr>
</table></td></tr>
<tr><td>2.</td><td>Industry shall submit the bank guarantee of amount (increase gross block) within one month.</td><td>We have Submitted the bank guarantee vide letter 2063/HPSL/2022-2023/2063 dated 13.06.2023 and our Bank Guarantee is released vide letter No. 8785/H.O./TECH/CECB/2025 Nava Raipur, Atal Nagar dated 01/01/2025.</td></tr>
<tr><td>3.</td><td>Industry shall ensure proper treatment of industrial and domestic effluent. Industry shall ensure treated effluent quality within the standards prescribed by Board published in Gazette Notification dated 25.03.88. The treated effluent shall be utilized in plantation, dust suppression, sprinkling on roads or other useful purposes within premises. Industry shall not discharge any liquid effluent what so ever generated in to the river or any surface water bodies. No effluent shall be discharged outside of the premises in any circumstance. Hence, zero discharge condition shall be maintained all the time.</td><td>We Comply Zero liquid discharge is maintained. Latest Monitoring report of effluent water is attached in Annexure II.

We are following CEPI Guidelines as per Head Office CECB vide Order No. 8175/HO/CECB/2019 Nava Raipur, Atal Nagar dated 17/12/2019 and action plan with respect to mitigation measures for CPA is attached as Annexure-I.</td></tr>
<tr><td>4.</td><td>Industry shall follow the standards prescribed by Ministry of Environment, Forest and Climate Change, Government of India regarding specific water consumption</td><td>We Comply.</td></tr>
<tr><td>5.</td><td>Industry shall submit monitoring report of effluent regularly</td><td>We comply (Latest Monitoring report of effluent water is attached in Annexure II.)</td></tr>
</table>

6.	Industry shall adopt dry ash extraction and dry ash disposal system. Industry shall incorporate total ash utilization as integral part of the project. Ash generated from plant shall not be stored on land in open areas in any circumstances. The ash generated shall be stored in closed silos only. The ash generated shall be collected in dry form in storage silos as temporary storage and it shall be utilized 100% for other beneficial uses such as brick making, road construction, cement making, filling in low-lying areas and abandoned mines etc. Industry shall provide ash storage silos of sufficient capacity. If at any point oftime all the storage silos completely filled with ash, then in that case industry shall shut down the plant till such time the ash disposed to other beneficial uses. Industry shall also reclaim the ash dumping area with a cover of soil and plantation without delay. Industry shall ensure transportation of fly ash/bottom ash for back filling / beneficial uses by covered vehicles to prevent emission during transportation.	Yes, we have complied. Our fly ash utilization is 100%. It is stored in closed Silo of capacity 550 MT. From silo fly ash is sent in closed tippers to fly ash brick manufacturers for making fly ash bricks. Financial year 2023-24 Yearly report is attached as **Annexure-V.**
7.	Industry shall ensure the fly ash utilization as per the notification of Ministry of Environment, Forest and Climate Change, Government of India vide letter dated 31/12/2021 and amendment dated 30/12/2022.	100 % Utilization of Fly Ash and Fly Ash audit report from National Institute of Technology, Uttarakhand is attached as **Annexure-VII**
8.	All fuel shall be stored above ground level in pucca platform in covered shed. Industry shall provide safe and scientific arrangement for collection, storage, transportation and disposal of all solid wastes such as fly ash, bottom ash, slag etc. generated. Solid wastes (Slag) shall be stored above ground level in pucca platform in covered area for few days only and not for longer period. Slag generated shall be utilized as raw material for production of Silico Manganese. Industry shall obtain letter of authorization under Hazardous and Other Wastes (Management and Trans Boundary Movement) Rules, 2016 (as amended) from the Board and comply with the rule.	All fuel & solid waste is stored above ground level in Concrete platform. Solid waste is being effectively complied with collection, storage, handling, transportation and disposal are being done scientifically. Fe-Mn slag is being used as raw material for the production of Si-Mn and Si-Mn slag is used as aggregate for civil works & filling of low-lying area.
9.	Industry shall ensure transportation of raw materials / slag / waste by properly covered vehicles. Vehicles used for transporting the wastes /	Fully covered mechanical vehicles are presently not available in the market. Manual Tarpaulin covered trucks are used

	sludge shall be covered with tarpaulins and optimally loaded. Vehicular emissions shall be kept under control and regularly monitored. Industry shall also ensure use of mechanically covered vehicles for transportation of raw materials, fuel, dust generating products on or before 12/07/2023.	whose photos are attached as **Annexure-VIII.**
10.	All internal roads shall be maintained pucca. Industry shall adopt good housing keeping practice.	All the internal roads are cement concreted. Good housekeeping practices have been adopted. Regular sprinkling of water and road cleaning is being done with the help of pneumatic sweeping machine. Photographs of Concrete road, water sprinkler tank, good housekeeping and Pneumatic sweeping machine etc are attached as **Annexure-IV.**
11.	Industry shall use fly ash brick, fly ash blocks or fly ash basedproducts in their construction / repairing activities.	Complied.
12.	Industry shall submit performance test of all pollution control equipments report carried out by NIT, IIT, (IoR) every year.	Complied. Performance evaluation report of pollution control Equipment is attached as **Annexure-XIII.**
13	Industry shall submit report of compliance of the consent conditions every year to the Board prepared by third party every year.	Complied. We are regularly submitting Consent Compliance report.
14	Industry shall enhance the capacity of rainwater harvesting systems to increase the ground water recharge within three months.	Complied, Rain water harvesting report is attached as **Annexure-XIV.**
15	Wide green belt of broad leaf local species shall be maintained all along the plant premises. As far as possible maximum area of open spaces shall be utilized for plantation purposes. Industry shall maintain green belt within and around the plant premises in at-least 33% area of total project area.	Till date we have planted trees as below:- Inside Plantation= 17253 No. (in 14.65 Acres) Outside Plantation=3165 No. (in 3.28 Acres) Total Plantation=20,418 No. We would like to inform you that we have achieved the target of more than 40% greenbelt. We are increasing the density of existing plantation inside the plant premises . Greenbelt Length towards the west side is ranging from 40m to 160m (including tall

		trees and good canopy).Damaged plants are being replaced with new plants every year. We are following CEPI Guidelines as per Head Office CECB vide Order No. 8175/HO/CECB/2019 Nava Raipur, Atal Nagar dated 17/12/2019 and action plan with respect to mitigation measures for CPA is attached as **Annexure-I**.
16	Industry shall submit Environment Statement to this Board as per provision of Environment (Protection) amendment Rule, 1993 for the previous year ending 31st March on or before 30th September every year.	We have complied with condition. We are regularly submitting Environmental Statement to the Board. Copy of last submitted Environment Statement is attached as **Annexure-XV**
17	This renewal of consent is being issued under the "Scheme of Auto-Renewal of Consent" of the Board issued vide office order no. 5937 dated 29/01/2018 as per self-certificate submitted by authorized signatory Mr. D.P. Singh,Executive Director of M/s Hira Power andSteels Limited, Unit-II, Urla Industrial Area, District - Raipur (C.G.).	We are regularly submitting third party audited consent compliance report to the board.
18	Chhattisgarh Environment Conservation Board reserves the rights to revoke the consent / renewal of consent at any time for any violation/non-compliance.	We Comply.
19	If industry fails to comply any of the above condition(s), the bank guarantee submitted by industry may be forfeited and this renewal of consent in consent may be cancelled without further notice.	We Accept.

Consent of the board under Section 21 of the Air (Prevention and Control of Pollution) Act 1981

S.No	Additional Conditions	Compliance
1	Production capacity of Ferro Alloys (including Low / Medium Ferro Alloys) shall not be enhanced from 18,000 Metric Tonnes/Annum under any circumstances after installation of Alumino Thermic Process – 600 Metric Tonnes/Annum or production of Low /	We agree. Production capacity of Ferro Alloys will not be enhanced in any circumstances from the granted permission by the board i.e. 48000 TPA Ferro Alloys including 18000 TPA Low/Medium Carbon Ferro Alloys as per our Amalgamated consent vide letter no

<table>
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<td>Medium Carbon Ferro Manganese (Ferro Alloy), failing which, this consent shall be treated as null & void. The products / total production capacity shall not exceed the capacity for which consent has previously been issued.</td>
<td>208/TS/CECB/2018 dated 03.04.2018. Last five years data of the production quantity is mentioned below:-
<table>
<tr><th>Ferro alloys Production</th><th>Year</th></tr>
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<tr><td>63982.21 MT</td><td>2023-24</td></tr>
</table>
</td>
</tr>
<tr>
<td>2</td>
<td>Industry shall submit the bank guarantee of amount (increase gross block) within one month.</td>
<td>We have Submitted the bank guarantee vide letter 2063/HPSL/2022-2023/2063 dated 13.06.2023 and our Bank Guarantee is released vide letter No. 8785/H.O./TECH/CECB/2025 Nava Raipur, Atal Nagar dated 01/01/2025.</td>
</tr>
<tr>
<td>3</td>
<td>Industry shall operate and maintain the existing air pollution control systems effectively and regularly to ensure the particulate matter emission from any point source below 40 mg/Nm3 all the time. Industry shall provide appropriate dust suppression/dust extraction system with bag filters at all fugitive dust emission sources such as material / wastes loading, unloading, handling, conveying system, transfer points/junction points, stock house etc. Good housekeeping practices shall be adopted by the industry. Industry shall also maintain the ambient air quality within the factory premises within prescribed limits. Chhattisgarh Environment Conservation Board may further stipulate stringent particulate matter emission limit depending upon environmental conditions.</td>
<td>Agreed. All the air pollution control systems are being operated and maintained to ensure the particulate matter Emission from point sources below 25 mg/NM3. Online Continuous emission monitoring system is installed and connected to CECB & CPCB Server in all the stacks of Ferro Alloys furnaces, CLU Converter and 20 MW Captive power plant & 1 No of Continuous Ambient air quality monitoring system is installed and connected with CECB server.

All the effective steps to control the fugitive emission inside our factory premises are executed. Fogging system has been provided to conveying system and all the transfer points. Photographs of Pollution Measure Equipments, Pollution Control Equipments & Fugitive Control Measures are attached as Annexure-IX.

We are following CEPI Guidelines as per Head Office CECB vide Order No. 8175/HO/CECB/2019 Nava Raipur, Atal Nagar dated 17/12/2019 and action plan with respect to mitigation measures for CPA is attached as Annexure-I.</td>
</tr>
</table>

4	Industry shall follow the standards prescribed by Ministry of Environment, Forest and Climate Change, Government of India regarding gaseous emission.	We comply.
5	Calibration and validation of data shall be carried out of all (power plant & ferro alloys) CEMS and industry shall ensure availability of real time data in CECB / CPCB server. Industry shall submit stack and ambient air quality monitoring reports to the Board regularly.	Continuous online stack emission monitoring system (Opacity meter) have been provided to the common stack attached to 3.0 & 3.6 MVA furnaces, stack attached to 6.0 MVA furnace, Common stack attached to 2 x 5.5 MVA furnaces, stack attached to CLU converter and Stack attached to 20 MW Captive Power Plant which is connected to CECB & CPCB Servers & 1 No of Continuous Ambient air quality monitoring system is installed and connected with CECB server. Data on and stack emission and ambient air quality is being submitted to the Board every month. Stack monitoring report and Ambient monitoring report is attached as **Annexure- X & XI.**
6	Industry shall adopt dry ash extraction and dry ash disposal system.Industry shall incorporate total ash utilization as integral part of the project. Ash generated from plant shall not be stored on land in open areas in any circumstances. The ash generated shall be stored in closed silos only. The ash generated shall be collected in dry form in storage silos as temporary storage and it shall be utilized 100% for other beneficial uses such as brick making, road construction, cement making, filling in low-lying areas and abandoned mines etc. Industry shall provide ash storage silos of sufficient capacity. If at any point of time all the storage silos completely filled with ash, then in that case industry shall shut down the plant till such time the ash disposed to other beneficial uses. Industry shall also reclaim the ash dumping area with a cover of soil and plantation without delay. Industry shall ensure transportation of fly ash/bottom ash for back filling / beneficial uses by covered vehicles to prevent emission during transportation.	Yes, we have complied. Our fly ash utilization is 100%. It is stored in closed Silo of capacity 550 MT. From silo fly ash is sent in closed tippers to fly ash brick manufacturers for making fly ash bricks. Financial year 2023-24 Yearly report is attached as **Annexure-V.**

7	Industry shall ensure the fly ash utilization as per the notification of Ministry of Environment, Forest and Climate Change, Government of India vide letter dated 31/12/2021 and amendment dated 30/12/2022.	100 % Utilization of Fly Ash and Fly Ash audit report from National Institute of Technology, Uttarakhand is attached as **Annexure-VII**.
8	All fuel shall be stored above ground level in pucca platform in covered shed. Industry shall provide safe and scientific arrangement for collection, storage, transportation and disposal of all solid wastes such as fly ash, bottom ash, slag etc. generated. Solid wastes (Slag) shall be stored above ground level in pucca platform in covered area for few days only and not for longer period. Slag generated shall be utilized as raw material for production of Silico Manganese. Industry shall obtain letter of authorization under Hazardous and Other Wastes (Management and Trans Boundary Movement)Rules, 2016 (as amended) from the Board and comply with the rule.	All fuel & solid waste is stored above ground level in Concrete platform. Solid waste is being effectively complied with collection, storage, handling, transportation and disposal are being done scientifically. Fe-Mn slag is being used as raw material for the production of Si-Mn and Si-Mn slag is used as aggregate for civil works & filling of low-lying area.
9	Industry shall ensure transportation of raw materials / slag / waste by properly covered vehicles. Vehicles used for transporting the wastes / sludge shall be covered with tarpaulins and optimally loaded. Vehicular emissions shall be kept under control and regularly monitored. Industry shall also ensure use of mechanically covered vehicles for transportation of raw materials, fuel,dust generating products on or before 12/07/2023.	Fully covered mechanical vehicles are presently not available in the market. Manual Tarpaulin covered trucks are used whose photos are attached as **Annexure-VIII.**
10	All internal roads shall be maintained pucca. Industry shall adopt good housing keeping practice	All the internal roads are cement concreted. Good housekeeping practices have been adopted. Regular sprinkling of water and road cleaning is being done with the help of pneumatic sweeping machine. Photographs of Concrete road, water sprinkler tank, good housekeeping and Pneumatic sweeping machine etc are attached as **Annexure-IV.**
11	Industry shall use fly ash brick, fly ash blocks or fly ash based productsin their construction / repairing activities.	Complied.

12	Industry shall submit performance test of all pollution control equipments report carried out by NIT, IIT, (IoR) every year.	Complied. Performance evaluation report of pollution control Equipment is attached as **Annexure-XIII.**
13	Industry shall submit report of compliance of the consent conditions every year to the Board prepared by third party every year.	Complied.
14	Industry shall submit Environment Statement to this Board as per provision of Environment (Protection) amendment Rule, 1993 for the previous year ending 31st March on or before 30th September every year.	We have complied with condition. We are regularly submitting Environmental Statement to the Board. Copy of last submitted Environment Statement is attached as **Annexure-XV**
15	This renewal of consent is being issued under the "Scheme of Auto-Renewal of Consent" of the Board issued vide office order no. 5937 dated 29/01/2018 as per self-certificate submitted by authorized signatory Mr. D.P. Singh, Executive Director of M/s Hira Power and Steels Limited, Unit-II, Urla Industrial Area, District - Raipur (C.G.).	We are regularly submitting third party audited consent compliance report to the board.
16	Chhattisgarh Environment Conservation Board reserves the rights to revoke the consent / renewal of consent at any time for any violation/non-compliance	We Comply.
17	If industry fails to comply any of the above condition(s), the bank guarantee submitted by industry may be forfeited and this renewal of consent in consent may be cancelled without further notice.	We Accept.

"Permission to Establish" cum amendment in consent of the Board issued under section 25 of the Water (Prevention and Control of Pollution) Act,1974 and under section 21 of the Air (Prevention and Control of Pollution)Act, 1981 for expansion in Ferro Alloys Plant – 48,000 Metric Tonnes Per Annum to 64,000 Metric Tonnes Per Annum [Including Low / Medium Carbon Ferro Alloys 48,000 Tonnes Per Annum] granted by Chhattisgarh Environment Conservation Board vide letter No. 10518 /TS/CECB/2024 Nava Raipur Atal Nagar, Dated 28 /03/ 2024.

<u>Additional Conditions</u>

A. Water consent as per the Water (Prevention and Control of Pollution) Act, 1974

S.NO.	Compliance Conditions	Status
(1)	Industry shall achieve increase in production of Ferro Alloys by improvement in efficiency and using better quality of raw materials without any change in plant and machinery. Industry shall ensure that after operation of expansion activity including existing Ferro Alloys, pollution load shall not exceed the existing load for which consent to operate had already been granted.	Agreed, we are increasing production only by improvement in efficiency and using better quality of raw materials without any change in plant and machinery.
(2)	Industry shall ensure completion of mitigation measures prescribed by CECB and adhere to the stipulations incorporated in the order issued by the Chhattisgarh Environment Conservation Board vide letter no. 8175/TS/CECB/2019 Nava Raipur Atal Nagar, dated: 17/12/2019 within the stipulated time schedule.	Agreed and is being followed.
(3)	Industry shall not use coal, pet-coke, furnace oil, LSHS as a fuel etc. (solid or liquid) as fuel under any circumstances. Industry shall not increase the quantity of coal in the power plant.	Agreed and shall be followed.
(4)	Industry shall provide adequate effluent treatment system for treatment of industrial and domestic effluent. Industry shall operate and maintain the effluent treatment system regularly. Industry shall ensure treated effluent quality within the standards prescribed by Board published in Gazette Notification dated 25.03.88. Treated effluent shall be used in process or in beneficial uses within plant premises. Industry shall not discharge any treated / untreated effluent in to the river or any surface water bodies. No effluent shall be discharged outside of the factory premises in any circumstances; hence zero discharge condition shall be maintained at all the time.	Agreed and being followed. We are not discharging any effluent outside of our plant premises. Zero discharge condition is maintained all the time.

	Chhattisgarh Environment Conservation Board may further stipulate stringent limit depending upon environmental conditions.	
(5)	Water shall be sourced from CSIDC limited. No ground water shall be used for industrial activities. Industry shall make arrangements like installation of digital water meter separately for underground as well as surface water, reuse of non potable water etc. as per NGT order dated 15/11/2022 on OA no. 392/2022 for use of water.	Agreed. Water is being sourced from CSIDC Under agreement. Digital water meters are installed separately.
(6)	Closed cycle cooling system shall be provided. Minimum water for makeup purposes shall be ensured. Industry shall provide adequate measuring arrangements for the measurement of water utilized in different categories and effluent generated before commissioning of the expansion activity. Industry shall only use treated effluent for preparation of lime / neutralization slurry / other slurry for use in ETP. No fresh water shall be utilized for such purposes. Industry shall use treated effluent for make-up of cooling water / process water as maximum as possible. Industry shall ensure no change in water consumption, sewage and industrial effluent generation.	Agreed and is being followed.
(7)	Industry shall install continuous monitoring of effluent quality / quantity as per CPCB guidelines for relevant parameters (like pH, Flow, Temperature, TOC/COD etc.) without delay and shall be connected to CECB / CPCB server. Industry shall also provide flow meter. Industry shall submit monitoring report of effluent regularly. Calibration and validation of data shall be carried out of all CWQMS and industry shall ensure availability of real time data in CECB / CPCB server.	Agreed and shall be followed.

(8)	Industry shall use fly ash brick, fly ash block and fly ash based products in the construction/repairing activities. Industry shall also use fly ash for filling low-lying areas within plant premises.	Agreed and is being followed**.**
(9)	All raw materials/ finished products shall be stored above ground level with pucca platform in covered area. Industry shall provide safe and scientific arrangement for handling, storage and disposal of all solid wastes such as; slag and dust collected in air pollution control devices etc. Ferro silicon slag shall be provided to cast iron foundries for further utilization. Slag produced in Ferro Manganese (Fe –Mn) production, shall be used in manufacturing silico manganese (Si – Mn). All other solid wastes including broken refractory mass shall be properly disposed off in environment friendly manner. Oily waste shall be provided to authorized recyclers /re-processors. Industry shall obtain authorization from Board for management and handling of hazardous materials as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (as amended) and comply with the rule. Industry shall strictly comply with all the measures specified in guidelines for spent solvent management, spent acid management, and other guidelines / directions published from time to time by CECB / CPCB / MoEF&CC. Industry shall ensure transportation of Hazardous Wastes through GPS mounted vehicles.	Agreed and is being followed, All fuel & solid waste is stored under shed and above ground level in pucca platform with proper arrangement of water sprinkling and dust suppression systems. Solid waste is being effectively complied with collection, storage, handling, transportation and disposal are being done scientifically. Fe-Mn slag is being used as raw material for the production of Si-Mn and Si-Mn slag is used as aggregate for civil works & filling of low-lying area. We are also selling used oil to authorized recyclers/re-processors. We have obtained hazardous waste authorization vide letter No. 3641/HSMD/HO/CECB/2020 Raipur dated 21.07.2020 We are selling hazardous waste i.e used oil to Authorized recyclers which transports hazardous waste through small vehicles.

(10)	Industry shall ensure transportation of raw materials, fuel, dust generating products by properly covered vehicles. Industry shall also ensure use of mechanically covered vehicles for transportation of raw materials, fuel, dust generating products on or before 12/07/2024.	Agreed and being followed. We are transporting all the raw materials, fuel and dust generating products through tarpaulin covered trucks. Copy of SOP submitted to Regional office Chhattisgarh Environment Conservation Board vide letter No. 2070/HPSL/2024-25/2070 dated 03.08.2024 is enclosed as **Annexure-XVI.**
(11)	All internal roads shall be maintained pucca. Industry shall adopt good housing keeping practice. Vehicle movement areas / roads within premises shall be maintained pucca from drain to drain to avoid dusting without delay.	Agreed and being followed.All the internal roads are corrected (pucca). Good housekeeping practices have been adopted. Regular sprinkling of water and road cleaning is being done with the help of pneumatic sweeping machine.
(12)	Industry shall enhance the capacity of rainwater-harvesting structures in the project area and residential area (if any) for recharge of ground water. Industry shall develop rainwater-harvesting structures and reservoirs / ponds to harvest the rainwater for utilization in the lean season as well as to recharge the ground water table. Industry shall ensure recharging of ground water by rainwater harvesting of at-least double the quantity of water use by them in expansion activities, which shall be done within or outside the premises.	Agreed and being followed. We have already enhanced capacity of Rain water harvesting structures and also informed to Head office and Regional office of Chhattisgarh Environment Conservation Board vide letter No. 2237/HPSL/2023-24/2237 Dated 05.01.2024.
(13)	Wide green belt of broad leaf local species shall be developed along the plant premises. As far as possible maximum area of open spaces shall be utilized for plantation purposes. Green belt/ plantation shall be developed within the plant premises in at-least 40% area of total plant area. Development of green belt/plantation outside project premises in adjacent areas such as avenue plantation, plantation in vacant areas, social forestry, etc. shall also be ensured.	Agreed and being followed. Till date we have planted trees as below:- Inside Plantation= 17253 No.(in 14.65 Acres), Outside Plantation=3165 No. (in 3.28 Acres) Total Plantation=20,418 No., We would like to inform you that we have achieved the target of more than 40% greenbelt. We are increasing the density of existing plantation inside

		the plant premises.
(14)	Industry shall submit performance test report pollution control equipments conducted by IoR (IIT/NIT/NABL Accredited) etc. every year.	Agreed and is being followed. Performance Test Report is enclosed as **Annexure – XIII.**
(15)	Industry shall submit third party verification report of CTE/CTO condition every year.	Agreed and is being followed.
(16)	Industry shall submit certificate regarding adequacy of roads based on carrying capacity of transportation of roads from concerned government authority within one month.	Agreed and being followed.
(17)	Industry shall ensure compliance of mitigation measures and stipulation of conditions issued by Ministry of Environment, Forest and Climate Change, Government of India (MoEF&CC) / Central Pollution Control Board (CPCB) from time to time regarding environmental management of critically polluted areas.	Agreed and being followed.
(18)	If industry fails to comply any of the above condition(s), the bank guarantee submitted by industry may be forfeited and this amendment in consent may be cancelled without further notice.	Agreed.

B. Air Consent as per the Air (Prevention and Control of Pollution) Act, 1981

(1)	Industry shall achieve increase in production of Ferro Alloys by improvement in efficiency and using better quality of raw materials without any change in plant and machinery. Industry shall ensure that after operation of expansion activity including existing Ferro Alloys, pollution load shall not exceed the existing load for which consent to operate had already been granted.	Agreed, we are increasing production only by improvement in efficiency and using better quality of raw materials without any change in plant and machinery.

(2)	Industry shall ensure completion of mitigation measures prescribed by CECB and adhere to the stipulations incorporated in the order issued by the Chhattisgarh Environment Conservation Board vide letter no. 8175/TS/CECB/2019 Nava Raipur Atal Nagar, dated: 17/12/2019 within the stipulated time schedule.	Agreed and is being followed.
(3)	Industry shall not use coal, pet-coke, furnace oil, LSHS as a fuel etc. (solid or liquid) as fuel under any circumstances. Industry shall not increase the quantity of coal in the power plant.	Agreed and shall be followed.
(4)	Industry shall install appropriate air pollution control systems to ensure the particulate matter emission from any point source below 25 mg/Nm3 all the time. Industry shall provide appropriate dust suppression/dust extraction system with bag filters at all fugitive dust emission sources such as material / wastes loading, unloading, handling, conveying system, transfer points/junction points, stock house etc. Good housekeeping practices shall be adopted by the industry. Industry shall also maintain the ambient air quality within the factory premises within prescribed limits. Chhattisgarh Environment Conservation Board may further stipulate stringent particulate matter emission limit depending upon environmental conditions.	Agreed and is being followed. We are following the prescribed norms and shall adhere to any changes by CECB/MoEFCC.
(5)	The minimum height of stack(s) shall be based on H=14(Q)0.3 (where Q is emission rate of SO2 in Kg/Hr. and H is Stack height in meters) or as per guidelines of Ministry of Environment, Forest and Climate Change, Government of India/Central Pollution Control Board or 30 meters (whichever is higher).	Agreed and being followed.
(6)	Industry shall provide appropriate dust suppression / dust extraction system at all fugitive dust emission sources such as raw material handling, product and wastes handling section, conveying system, transfer	Agreed and is being followed, all the raw materials is stored under shed with proper arrangement of water sprinkling and dust suppression systems. We have covered all the

	points/junction points, stock house etc. All conveyor belt, all transfer points, all junction points etc. shall be completely closed to avoid fugitive emission. All transfer points / junction points shall be fitted with dust suppression system followed by bag filter. Industry shall also install water sprinkler system for dust suppression at all vulnerable points / areas to control fugitive dust emission.	conveyor belts and have installed fogging system on all conveyor belts and transfer points. All the roads within premises are being made from concrete from drain to drain.
(7)	Industry shall adhere to sector specific guidelines / SOP published by CPCB from time to time for effective fugitive emission control. Industry shall maintain fugitive dust emissions to the minimum level in the areas of road transportation routes of raw materials and wastes to ensure Ambient Air Quality within latest prescribed standard. Black topping/ asphalting /concreting and maintenance with requisite water sprinkling arrangements shall be ensured.	Agreed and is being followed, all the raw materials is stored under shed with proper arrangement of water sprinkling and dust suppression systems. We have covered all the conveyor belts and have installed fogging system on all conveyor belts and transfer points. All the roads within premises are being made from concrete from drain to drain.
(8)	Industry shall ensure regular running of Continuous Emission Monitoring System - CEMS (as per CPCB guidelines for relevant parameters) in all the stack(s) of existing and shall be connected with CECB/CPCB server. Calibration and validation of data shall be carried out of all CEMS / CAAQMS and industry shall ensure availability of real time data in CECB / CPCB server.	Agreed and being followed. We have installed CEMS on stacks of all furnaces and CCS Unit and have connected it to the CECB/CPCB Server. We have also installed CAAQMS for Ambient Air monitoring.
(9)	Industry shall use fly ash brick, fly ash block and fly ash based products in the construction/ repairing activities. Industry shall also use fly ash for filling low-lying areas within plant premises.	Agreed and is being followed.
(10)	All raw materials/ finished products shall be stored above ground level with pucca platform in covered area. Industry shall provide safe and scientific arrangement for handling, storage and disposal of all solid wastes such as; slag and dust collected in air pollution control devices etc.	Agreed and is being followed, All fuel & solid waste is stored under shed and above ground level in pucca platform with proper arrangement of water sprinkling and dust suppression systems. Solid waste is

	Ferro silicon slag shall be provided to cast iron foundries for further utilization. Slag produced in Ferro Manganese (Fe –Mn) production, shall be used in manufacturing silico manganese (Si – Mn). All other solid wastes including broken refractory mass shall be properly disposed off in environment friendly manner. Oily waste shall be provided to authorized recyclers /re-processors. Industry shall obtain authorization from Board for management and handling of hazardous materials as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (as amended). Industry shall strictly comply with all the measures specified in guidelines for spent solvent management, spent acid management, and other guidelines / directions published from time to time by CECB / CPCB / MoEF&CC. Industry shall ensure transportation of Hazardous Wastes through GPS mounted vehicles.	being effectively complied with collection, storage, handling, transportation and disposal are being done scientifically. Fe-Mn slag is being used as raw material for the production of Si-Mn and Si-Mn slag is used as aggregate for civil works & filling of low-lying area. We are also selling used oil to authorized recyclers/re-processors. We have obtained hazardous waste authorization vide letter No. 3641/HSMD/HO/CECB/2020 Raipur dated 21.07.2020 We are selling hazardous waste like used oil to Authorized recyclers which transports hazardous waste through small vehicles.
(11)	Industry shall ensure transportation of raw materials, fuel, dust generating products by properly covered vehicles. Industry shall also ensure use of mechanically covered vehicles for transportation of raw materials, fuel, dust generating products on or before 12/07/2024.	Agreed and being followed. We are transporting all the raw materials, fuel and dust generating products through tarpaulin covered trucks. Copy of SOP submitted to Regional office Chhattisgarh Environment Conservation Board vide letter No. 2070/HPSL/2024-25/2070 dated 03.08.2024 is enclosed as **Annexure-XVI.**
(12)	All internal roads shall be maintained pucca. Industry shall adopt good housing keeping practice. Vehicle movement areas / roads within premises shall be maintained pucca from drain to drain to avoid dusting without delay.	Agreed and being followed. All the internal roads are corrected (pucca). Good housekeeping practices have been adopted. Regular sprinkling of water and road cleaning is being done with the help of pneumatic sweeping machine
(13)	Wide green belt of broad leaf local species shall be developed along the plant premises. As far as possible maximum area of open spaces shall be	Agreed and being followed. Till date we have planted trees as below:-

	utilized for plantation purposes. Green belt / plantation shall be developed within the plant premises in at-least 40% area of total plant area. Development of green belt / plantation outside project premises in adjacent areas such as avenue plantation, plantation in vacant areas, social forestry, etc. shall also be ensured.	Inside Plantation= 17253 No. (in 14.65 Acres) Outside Plantation=3165 No. (in 3.28 Acres) Total Plantation=20,418 No. We would like to inform you that we have achieved the target of more than 40% greenbelt. We are increasing the density of existing plantation inside the plant premises .
(14)	Industry shall submit performance test report pollution control equipments conducted by IoR (IIT/NIT/NABL Accredited) etc. every year.	Agreed and is being followed. Performance Test Report is enclosed as **Annexure – XIII.**
(15)	Industry shall submit third party verification report of CTE/CTO condition every year.	Agreed and is being followed.
(16)	Industry shall submit certificate regarding adequacy of roads based on carrying capacity of transportation of roads from concerned government authority within one month.	Agreed and being followed.
(17)	Industry shall ensure compliance of mitigation measures and stipulation of conditions issued by Ministry of Environment, Forest and Climate Change, Government of India (MoEF&CC) / Central Pollution Control Board (CPCB) from time to time regarding environmental management of critically polluted areas.	Agreed and being followed. Status of Compliance of Environment Clearance granted by Ministry of Environment, Forest and Climate Change, Government of India (MoEF&CC) is enclosed as **Annex-XVII.**
(18)	If industry fails to comply any of the above condition(s), the bank guarantee submitted by industry may be forfeited and this amendment in consent may be cancelled without further notice.	Agreed.

S.NO.	General Compliances	
	Compliances of other Miscellaneous Activities	
(i)	Chhattisgarh Vision 2047	Letter submitted for Chhattisgarh Vision 2047 is enclosed as **Annexure-XVIII**
(ii)	Plantation work under campaign “EK PED MAA KA NAAM’’	Photographs of Plantation work under campaign “ EK PED MAA KE NAAM” is attached as **Annexure-XIX**

Annexure-I

ACTION PLAN WITH RESPECT TO MITIGATION MEASURES FOR CPA

Compliance Report with respect to mitigation measures for CPA/SPA mention in the Ministry's OM dated 31.10.2019 & 24.10.2019 and CECB Office Memorandum No. 8175/HO/CECB/2019 Nawa Raipur Atal Nagar Dated 17/12/2019 are given below:-

Action Point	Compliance
Air Pollution Management	
Stack emission levels should be stringent than the existing standards in terms of the identified critical pollutants.	The primary emissions from the units will comprise particulate matter and gaseous substances. To mitigate these pollutants, high-efficiency bag filters and gas cleaning facilities have been installed. These systems are designed to effectively reduce both gas and dust emissions. The emissions from Submerged Arc Furnace will be sucked through hoods and will pass through a fume extraction system with Bag Filter and then resulting cleaned gas will be released into the atmosphere through chimney from effective dispersion of emissions from furnaces. Online Continuous Emission Monitoring system (OCEMS) has already been installed to Submerged Arc furnace and connected to CPCB server. Stack emission from all the stacks is being maintained within 25 mg/Nm3. Ferro Alloy Plant: Bag Filter (5 no). Power Plant: ESP (Three fields ESP)
CEMS may be installed in all large/medium red category industries (air polluting) and connected to SPCB and CPCB server.	CEMS has already been installed with following stacks in the existing Plant and connected with SPCB and CPCB server. Ferro Alloy Plant: (4 No's) Stack connected with Bag filters Power Plant: (1 No.) Stack connected with ESP
Effective fugitive emission control measures should be imposed in the process, transportation, packing etc.	• All material transfer points are connected with Dust Extraction system attached with Bag filter. • Dust extraction measures with swivel hood, ID fan are provided at different loading, unloading and transfer points in the raw material handling section. • Fumes and gases in SAF and other sections are removed by Fume extraction system with bag house followed by stack. • Adequate dust suppression system in the form of water sprinklers (45 No.) are provided at raw material yard, solid waste dump site and along the vehicular roads. • All internal roads are of concrete and well maintained. Repairing work required, if any, is carried out immediately. No dust problem arises

Action Point	Compliance
	within the factory premises due to transportation. • Adequate spares of critical components of dust collection systems have been kept ensuring trouble free operations and continuous compliance to emission norms.
Transportation of materials by rail/ conveyor belt, wherever feasible	• Transportation of Raw materials, fuel and finished products, solid waste like Fly Ash etc. are being transported in covered vehicles by Roads/Rail (Covered with Tarpaulin). Dust extraction measures with swivel hood, ID fan are provided at different loading, unloading and transfer points in the raw material handling section. All the conveyor belts provided cover system to control fugitive emission.
Encourage use of cleaner fuels (pet coke/ furnace oil/ ISHS may be avoided).	Coal and coke is being used as fuels in the plant as these are basic raw materials to be used for Ferro alloys products.
Best Available Technology may be used. For example, usage of EAF/SAF/ IF in place of Cupola furnace. Usage of Supercritical technology in place of sub-critical technology.	• Submerged Arc Furnace is being used for Ferro Alloys production which is best available proven technology. • Polyester filter bags with high quality Polyester Needle Felted fabric filter bags. • Process with minimal emission • DCS Operated manufacturing plants
Increase of green belt cover by 40% of the total land area beyond the permissible requirement of 33%, wherever feasible.	Till date we have planted trees as below:- • Inside Plantation= 17253 No. (in 14.65 Acres) • Outside Plantation=3165 No. (in 3.28 Acres) • Total Plantation=20,418 No. • We would like to inform you that we have achieved the target of more than 40% greenbelt. We are increasing the density of existing plantation inside the plant premises • Greenbelt Length towards the west side is ranging from 40m to 160m (including tall trees and good canopy).Damaged plants are being replaced with new plants every year.
Stipulation of greenbelt outside the project premises such as avenue plantation, plantation in vacant areas, social forestry, etc.	• Hira Power and Steel Limited has also done the road side plantation of 3.5 Km on road side from gate of the plant to young India chowk, Police station,From Main Gate to Jai hind chowk . • Outside Plantation=3165 No. (in 3.28 Acres)

Action Point	Compliance
Assessment of carrying capacity of transportation load on roads inside the industrial premises. If the roads required to be widened, shall be prescribed as a condition.	Adequate Roads of proper width are available inside the plant premises. Already 9 meter wide road network is developed.
Water Pollution Management	
Reuse/recycle of treated wastewater, wherever feasible	Water is being used only for cooling purpose in re-circulating manner. No any treated / untreated effluent is being discharged outside the factory premises. Waste water after treatment is being used for plantation and dust suppression purposes. Cooling Tower discharge water is being used for dust suppression purpose, inside the plant premises. Domestic waste water after treatment will be used for plantation.
Continuous monitoring of effluent quality/quantity in large and medium Red Category Industries (water polluting).	The project is based on Zero Liquid Discharge. Continuous monitoring of effluent is/will be carried out to ensure 100 % recycle in own premises and no discharge outside the factory premises.
A detailed water harvesting plan may be submitted by the project proponent	Rain water harvesting pits and ground water recharge wells have been constructed in consultation with recognized agency to harvest the rainwater to improve water table. 08 number of rain water harvesting structures has been constructed in the plant premises.
Zero- liquid-discharge-wherever-techno economically feasible.	The project is based on Zero Liquid Discharge. Continuous monitoring of effluent will be carried out to ensure 100 % recycle in own premises and no discharge outside the factory premises.
In case, domestic wastewater generation is more than 10 KLD, the industry may install STP.	The domestic water will be treated in Sewage Treatment Plant and reused for green belt development and dust suppression.
Land Pollution Management	
Action Point	**Compliance**
Increase of green belt cover by 40% of the total land area beyond the permissible requirement of 33%, wherever, feasible for new projects	Till date we have planted trees as below:- • Inside Plantation= 17253 No. (in 14.65 Acres) • Outside Plantation=3165 No. (in 3.28 Acres) • Total Plantation=20,418 No. • We would like to inform you that we have achieved the target of more than 40% greenbelt. We are increasing the density of existing plantation inside the plant premises. • Greenbelt Length towards the west side is ranging from 40m to 160m (including tall trees and good canopy).Damaged plants are being replaced with new plants every year.

Action Point	Compliance
Stipulation of greenbelt outside the project premises such as avenue plantation, plantation in vacant areas, social forestry, etc.	• Hira Power and Steel Limited has also done the road side plantation of 3.5 Km on road side from gate of the plant to young India chowk, Police station,From Main Gate to Jai hind chowk . • Outside Plantation=3165 No. (in 3.28 Acres)
Dumping of waste (fly ash, slag, red mud, etc.) may be permitted only at designated locations approved by SPCBs/ PCCs.	• 51,200 TPA It is reused in Manufacturing of SiMn and presently sold to market • 2,640 TPA Bag Filter Dust will be Recycled/Reused in the Manufacturing process after briquetting. • 1,980 TPA Mn3O4 Dust will be Recycled/Reused in the Manufacturing process. • 8,315 TPA AOD slag is High MnO Slag used in manufacturing of Si-Mn, presently sold to market. • 90,000 TPA Fly Ash used for Brick/Block/Other products manufacturing.
More stringent norms for management of hazardous waste. The waste generated should be preferably utilized in co-Processing.	15KL/Annum of Waste Oil/Used Oil used for machinery lubrication and will be stored in covered HDPE Drums & will be given to CECB approved vendors/authorized recycler. 0.25 MT/Year Spent ion exchange resin is reused in process. Empty barrels/containers are sold to authorized recyclers (if generated)
Other Condition(additional)	
Monitoring of compliance of EC conditions may be submitted with third party audit every year.	EC Compliances are being sent to Regional office MOEF & CC, Head Office CECB & Regional Office CECB regularly.
The % of the CER may be at least 1.5 times the slabs given in the OM dated 01.05.2018 for SPA and 2 times for CPA in case of Environmental Clearance.	As per the Norms allocated value for CER is 10.0 Lakhs. We have spend Approx. Rs 13,06,800.00 for development of Public Bathroom and Toilets at Village Achholi Ward No.-08,Nagar Nigam Birgaon Raipur (C.G)

An ISO/IEC 17025:2017 NABL Accredited Testing Lab

RAL | RELIABLE ANALYTICAL LAB | Water & Waste Water, Industrial & Environment Pollution, Food & Agriculture Products Analytical Lab | TC - 11719

TEST- REPORT

Format No. RAL/F-40

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra, No. 511/1,512/2,Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/DEC/0133	24/12/2024

Sampling Done by	Date of Receipt	Sample Quantity	Batch No.	Packing
Client	21/12/2024	2.0 ltr.	NA	Plastic bottle
Sample Name	**Sample ID**	**Condition of Sample**		**Sealed/Unsealed**
Siltation Tank Water	RAL/2024/DEC/0133	Good		Unsealed
Analysis Start Date	21/12/2024	**Analysis End Date**		24/12/2024

Test Details:-

S. No.	Test Parameter	Unit	Inlet Water	Outlet Water	Limit as Per Consent	Method of Analysis
1.	pH @ 25 ^{0}C	--	7.32	7.18	5.5 to 9.0	IS 3025 (P-11) 2017
2.	Total Suspended Solid	mg/l	22.0	16.0	100	IS 3025 (P-17) 2017
3.	Oil & Grease	mg/l	Nil	Nil	10	IS 3025 (P-39) 2021
4.	Chemical Oxygen Demand	mg/l	64.28	20.36	250	IS 3025 (P-58) 2006
5.	Biological Oxygen Demand at 27^{0}C (3Days	mg/l	10.0	4.0	30	IS 3025 (P-44) 1993

Note:

1.The results are related only to the sample tested.
2.This report **shall** not be reproduced without the written approval of RAL.
3.Specification as per Party Consent.
4.The legal liabilities limited up to the analytical charges only.
5.This Report in full or in part shall not be used for advertising or as evidence in any court of Law
6.Statement or conformity to a specifications is given only on the requests of the customer

******

END OF REPORT

Checked by

RELIABLE ANALYTICAL LAB

Authorized Signatory

HIRA

HIRA POWER & STEELS

REPORT OF ENERGY METER ATTACHED TO AIR POLLUTION CONTROL DEVICE APRIL 2023- MARCH 2024

S.No	Month	Pollution Control Devices Attached to Unit	Power Consumption (KWH)	Remarks
1	April 2023	ID Fan, Cooling Water pump, Air Compressor, Dust Silo Unit, FD Cooler (Axial Flow Fan), Bagfilter Unit, Silo Ash Conditioner Pump.	428258.15	Energy meter, Model-EM6433 & Make-Conzerv
2	May 2023		847582.04	
3	June 2023		777179.65	
4	July 2023		822815.33	
5	August 2023		793194.65	
6	September 2023		965392.74	
7	October 2023		946759.84	
8	November 2023		967766.08	
9	December 2023		944087.67	
10	January 2024		898042.59	
11	February 2024		812851.40	
12	March 2024		856295.47	
TOTAL			10060225.61	

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

Photographs of Air Pollution Control Equipment

1. Fogging system on conveyor belts and transfer points






2. Covered shed for crusher



3. RCC Road, Pneumatic sweeping and water sprinkling



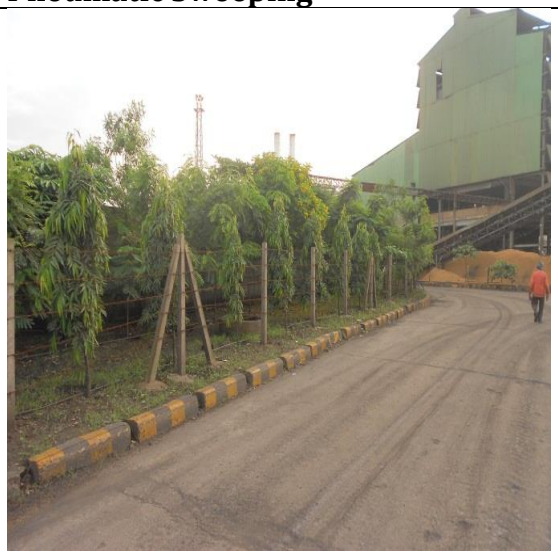
RCC Road



Pneumatic Sweeping



RCC Road



RCC Road

	
Static Sprinklers	**Mobile Sprinklers**

ESP attached with Chimney – Power Plant



Bag filters Attached with Chimney – Ferro Alloy Plant





Annexure-V

HIRA POWER & STEELS

क्रमांक : 2003/एचपीएसएल/2024-25/2003 **दिनांक 08.04.2024**

प्रति,
श्रीमान क्षेत्रीय अधिकारी,
छ.ग.पर्यावरण संरक्षण मण्डल,
न्यू ऑफिस बिल्डिंग, रिंग रोड नं.2,
टाटीबंध, रायपुर–492099 (छ.ग.)

विषयः वर्ष 2023-24(अप्रैल 2023 से मार्च 2024) तक की अवधि में ताप विद्युत से जनित फ्लाई ऐश युटिलाईजेशन की वार्षिक रिपोर्ट प्रेषित करने के संबंध में।

क्रमांक : आपका पत्र क्रमांकः 63/क्षेका/छ.ग.पं.सं.मं/2024 रायपुर दिनांक 03.04.2024

महोदय,

उपरोक्त विषयांतर्गत संदर्भित पत्र के अनुक्रम में लेख है कि **ताप विद्युत से जनित फ्लाई ऐश युटिलाईजेशन की वार्षिक रिपोर्ट (अप्रैल 2023 से मार्च 2024) तक** अवधि की जानकारी निर्धारित प्रपत्र में संलग्न कर सादर प्रेषित की जा रही है।

सधन्यवाद

भवदीय,
वास्ते, हीरा पॉवर एण्ड स्टील्स लिमिटेड, यूनिट–II

अधिकृत हस्ताक्षरकर्ता

संलग्नः उपरोक्तानुसार।

प्रतिलिपि : श्रीमान सदस्य सचिव, छ.ग.पर्यावरण संरक्षण मण्डल, पर्यावास भवन, नार्थ ब्लॉक, सेक्टर–19, नवा रायपुर अटलनगर, **रायपुर (छ.ग.)- 492002**

थर्मल पॉवर प्लांट उद्योगों से उत्पन्न फ्लाई ऐश की उपयोगिता की स्थिति के संबंध में जानकारी

(दिनांक 01.04.2023 से 31.03.2024 तक की अवधि का विवरण)

क्र0.	थर्मल पॉवर उद्योग का नाम एवं पता	क्षमता (मेगावॉट में)	उत्पन्न फ्लाई ऐश की मात्रा	सीमेंट प्लांट में प्रदाय/उपयोग	ईट निर्माण	भू–भराव	ऐश–डाईक हाईट/रैजिंग/निर्माण	कृषि कार्य हेतु	खदान में भराव	अन्य (जिस प्रयोजन में फ्लाई ऐश का उपयोग किया गया है, उसकी संक्षिप्त जानकारी दें)	कुल	प्रतिशत् उपयोग	फ्लाई ऐश का परिवहन किस माध्यम से किया जा रहा है, का विवरण (यथा क्लोज्ड बलकर्स तारपोलिन कव्हर्ड ट्रक्स इत्यादि।
1	2	3	4	5	6	7	8	9	10	11	12	13	14
01	हीरा पॉवर एण्ड स्टील्स् लिमिटेड, खसरा नं. 511/1, 512/2, उरला औद्योगिक क्षेत्र, रायपुर–492003(छ.ग.)	20 MW	50408.56	-	50408.56	-	-	-	-	-	50408.56	100%	Transportation o Fly Ash is done b us in Tarpaulin covered Trucks.

अधिष्ठाता/उद्योग प्रबंधक के हस्ताक्षर (मुद्रा सहित) –

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

अधिष्ठाता उद्योग प्रबंधक का नाम एवं पदनाम –श्री ओम प्रकाश गोयल, अधिशाषी निदेशक

मोबाईल नंबर एवं ई–मेल आई.डी. :मो. 99819.21136 एवं ई–मेल: om.goyal@hpslindia.com

Annexure-VI

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
केन्द्रीय भूमि जल प्राधिकरण
Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)
NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Project Name:	M/s Hira Power And Steels Limited Unit Ii		
Project Address:	Urla Industrial Area		
Town:	Birgaon (m)	Block:	Dharsiwa
District:	Raipur	State:	Chhattisgarh
Pin Code:			
Communication Address:	Hira Power And Steels Ltd. Unit Ii, Urla Industrial Area, K.h. No. 511/1, 512/2, Dharsiwa, Raipur, Chhattisgarh - 492003		
Address of CGWB Regional Office :	Central Ground Water Board North Central Chhattisgarh, 2nd Floor, Lk Corporate And Logistic Park, Dhamtari Road, Nh-30, Dumartarai, Raipur, Chhattisgarh - 492015		

1.	**NOC No.:**	CGWA/NOC/IND/REN/1/2024/9854	2.	**Date of Issuence**	13/08/2024
3.	Application No.:	21-4/1506/CT/IND/2018	4.	Category: (GWRE 2023)	Critical
5.	Project Status:	Existing Ground Water	6.	NOC Type:	Renewal
7.	**Valid from:**	10/06/2024	8.	**Valid up to:**	09/06/2027

9. Ground Water Abstraction Permitted:

Fresh Water		Saline Water		Dewatering		Total	
m³/day	m³/year	m³/day	m³/year	m³/day	m³/year	m³/day	m³/year
100.00	31820.00						

10. Details of ground water abstraction /Dewatering structures

	Total Existing No.:4						**Total Proposed No.:0**					
	DW	DCB	BW	TW	MP	MPu	DW	DCB	BW	TW	MP	MPu
Abstraction Structure*	0	0	4	0	0	0	0	0	0	0	0	0

*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit;MPu-Mine Pumps

11.	Ground Water Abstraction/Restoration Charges paid (Rs.):	230880.00
12.	Environment Compensation (if applicable) paid (Rs.):	0.00

13.	Number of Piezometers(Observation wells) to be constructed/ monitored & Monitoring mechanism.	No. of Piezometers	Monitoring Mechanism		
			Manual	DWLR**	DWLR With Telemetry
	**DWLR - Digital Water Level Recorder	1	0	1	0

CENTRAL GROUND WATER AUTHORITY

(Compliance Conditions given overleaf)

This is an auto generated document & need not to be signed.

CENTRAL GROUND WATER AUTHORITY

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011
Phone: (011) 23383561 Fax: 23382051, 23386743
Website: cgwa-noc.gov.in

Validity of this NOC shall be subject to compliance of the following conditions:

Mandatory conditions:

1) Installation of tamper proof digital water flow meter with telemetry on all the abstraction structure(s) shall be mandatory for all users seeking No Objection Certificate and intimation regarding their installation shall be communicated to the CGWA within 30 days of grant of No Objection Certificate.

2) Proponents shall mandatorily get water flow meter calibrated from an authorized agency once in a year.

3) Construction of purpose-built observation wells (piezometers) for ground water level monitoring shall be mandatory as per Section 14 of Guidelines. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in Annexure-II of the guidelines.

4) Proponents shall monitor quality of ground water from the abstraction structure(s) once in a year. Water samples from bore wells/ tube wells / dug wells shall be collected during April/May every year and analysed in NABL accredited laboratories for basic parameters (cations and anions), heavy metals, pesticides/ organic compounds etc. Water quality data shall be made available to CGWA through the web portal.

5) In case of mining projects, additional key wells shall be established in consultation with the Regional Director, CGWB for ground water level monitoring four (4) times a year (January, May, August and November) in core as well as buffer zones of the mine.

6) In case of mining project the firm shall submit water quality report of mine discharge/ seepage from Govt. approved/ NABL accredited lab.

7) The firm shall report compliance of the NOC conditions online in the website (www.cgwa-noc.gov.in) within one year from the date of issue of this NOC.

8) Industries abstracting ground water in excess of 100 m 3 /d shall undertake annual water audit through certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means.

9) Application for renewal can be submitted online from 90 days before the expiry of NOC. Ground water withdrawal, if any, after expiry of NOC shall be illegal & liable for legal action as per provisions of Environment (Protection) Act, 1986.

10) This NOC is subject to prevailing Central/State Government rules/laws/norms or Court orders related to construction of tube well/ground water abstraction structure / recharge or conservation structure/discharge of effluents or any such matter as applicable.

General conditions:

11) No additional ground water abstraction and/or de-watering structures shall be constructed for this purpose without prior approval of the Central Ground Water Authority (CGWA).

12) The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction (more than that permitted in NOC for specific period).

13) Proponents shall install roof top rain water harvesting in the premise as per the existing building bye laws in the premise.

14) The project proponent shall take all necessary measures to prevent contamination of ground water in the premises failing which the firm shall be responsible for any consequences arising thereupon.

15) In case of industries that are likely to contaminate the ground water, no recharge measures shall be taken up by the firm inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm.

16) Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.

17) Wherever the NOC is for abstraction of saline water and the existing wells (s) is /are yielding fresh water, the same shall be sealed and new tubewell(s) tapping saline water zone shall be constructed within 3 months of the issuance of NOC. The firm shall also ensure safe disposal of saline residue, if any.

18) Unexpected variations in inflow of ground water into the mine pit, if any, shall be reported to the concerned Regional Director, Central Ground Water Board.

19) In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines.

20) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.

21) The issue of this NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and take decisions independently of the NOC.

22) In case of change of ownership, new owner of the industry will have to apply for incorporation of necessary changes in the No Objection Certificate with documentary proof within 60 days of taking over possession of the premises.

23) This NOC is being issued without any prejudice to the directions of the Hon'ble NGT/court orders in cases related to ground water or any other related matters.

24) Proponents, who have installed/constructed artificial recharge structures in compliance of the NOC granted to them previously and have availed rebate of upto 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, shall continue to regularly maintain artificial recharge structures.

25) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, pharmaceutical, other hazardous units etc. (as per CPCB list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution as per Annexure III of the guidelines.

26) In case of new infrastructure projects having ground water abstraction of more than 20 m3/day, the firm/entity shall ensure implementation of dual water supply system in the projects.

27) In case of infrastructure projects, paved/parking area must be covered with interlocking/perforated tiles or other suitable measures to ensure groundwater infiltration/harvesting.

28) In case of coal and other base metal mining projects, the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.

29) The NOC issued is conditional subject to the conditions mentioned in the Public notice dated 27.01.2021 failing which penalty/EC/cancellation of NOC shall be imposed as the case may be.
30) This NOC is issued subject to the clearance of Expert Appraisal Committee (EAC) (if applicable).
31) In the self-compliance report, the PP shall submit details of Drilling Agency/ Agencies, which has/ have constructed BW(s)/ TW(s) along with undertaking to the effect that all necessary measures have been taken as per directions of Hon'ble Supreme Court provided in Annexure-VII of guidelines dated 24.09.2020 in respect of abandoned/ failed BW(s)/ TW(s)/Piezometer(s), if any. The PP is advised to engage registered drilling agency/ agencies. In the event of any mishap/ unfortunate incident due to negligence in taking measures for prevention of accident due to falling in Bore Well, both PP and concerned drilling agency shall jointly be held responsible and penal action as per extant Government rules shall be taken.

(Non-compliance of the conditions mentioned above is likely to result in the cancellation of NOC and legal action against the proponent.)

CENTRAL GROUND WATER AUTHORITY

Dr. Shashi Narayan
Assistant Professor
Department of Civil Engineering
NIT Uttarakhand

राष्ट्रीय प्रौद्योगिकी संस्थान,
उत्तराखण्ड
National Institute of Technology,
Uttarakhand

Ash-Disposal Compliance Audit Report for HPSL, Raipur

Brief:

The **Power plant (AFBC Boiler), Hira Power and Steels Limited, Unit II**, Raipur, Chhattisgarh, was inspected and audited for fly ash disposal on 28/11/2024. The plant has a capacity of 20MW. The primary fuel source was Coal blended with Rice Husk. The fly ash generation for 2023-24 was 56,961.67 MT. The ash generated is collected from Economizer, Air preheater, and Electrostatic precipitators (ESP) to the dry silo. The installed capacity of dedicated silo for storage of dry fly ash is 550MT. This is sufficient for the fly-ash-generated for 3 days of operation at peak load.

The fly-ash from silo is disposed of using two methods: Dry-Ash disposal using bulkers and Wet-conditioned fly-ash disposal using dumper trucks. The silo contains two different hoppers to facilitate the above-mentioned methods of disposal. The water conditioning is done using pumps which were installed prior to one of the hoppers. Additionally, there are arrangements made to condition the dumper truck using water and then covering it. The loading, unloading, transport, storage, and disposal of ash is done in an environmentally sound manner and all precautions to prevent air and water pollution are taken.

Bottom-waste is collected directly through hoppers and transported to collection pit for segregation of bottom-ash and further to be disposed of using dumper trucks.

Profile of Company:

Hira Power and Steel Limited (HPSL) stands as industrial endeavor in Raipur, spearheaded by the Agrawal Family. Specializing in Manganese-based Ferro Alloys, crucial for steel and cast iron melting furnaces, the company was founded in 1986 by Mr. Om Prakash Agrawal. In a strategic move, within a year, the focus shifted from Calcium Carbide to Ferro Alloys production, setting the stage for a transformative journey. Rebranded as "HIRA POWER AND STEELS LIMITED" in 2007, the company's roots trace back to Mr. Agrawal's bold decision to adopt a 2.5 MVA furnace for Ferro Alloys, despite advisory resistance. The success of this venture led to the installation of four additional Ferro Alloys units. Presently, HPSL boasts a manufacturing capacity of 48,000 MT/year of Manganese-based Ferro Alloys and a 20 MW Captive Thermal Power Plant, catering to both domestic and international demands. Guided by Mr. Agrawal's leadership, Hira Power and Steel Limited stands resilient as a prominent force in the Ferro Alloys industry.

Dr. Shashi Narayan
Assistant Professor
Department of Civil Engineering
NIT Uttarakhand

राष्ट्रीय प्रौद्योगिकी संस्थान,
उत्तराखण्ड
National Institute of Technology,
Uttarakhand

Observations:

1. The records of Fuel consumption (Coal + Rice Husk) was checked from the record and found to be 1,14,888MT. The average ash content in the Fuel from the feed chemical analysis was 35%. Thus the flyash generated as per this data is verified with the data provided in the Fly-ash Annual utilization report for F.Y. 2023-24.
2. The fly ash generated was disposed of using dumper truck to Brick manufacturing industry on daily basis (permitted use). The fly ash utilization data was verified with the dispatch logs of dumper trucks against the data of fly ash generated and found correct.
3. There was no ash-ponds for this plant.

Suggestions:

It is suggested that since all the present utilization is to nearby brick manufacturing units, other avenues for utilization from permitted use /avenue may be explored like better utilization of ash for road works, land filling of abundant pits so that in a scenario for non-demand from brick manufacturing units for 3-4 days alternative source of supply can be switch over, to avoid in filling up of the dry-silos.

(Dr. Amardeep) (Dr. Bibhash Kumar) (Dr. Shashi Narayan)

Srinagar (Garhwal), Distt. Pauri, Uttarakhand-246174, Email: shashi@nituk.ac.in +91-9945670734

Annexure-VIII



Photographs of Air Pollution Control Equipment

1. Fogging system on conveyor belts and transfer points






2. Covered shed for crusher



3. RCC Road, Pneumatic sweeping and water sprinkling



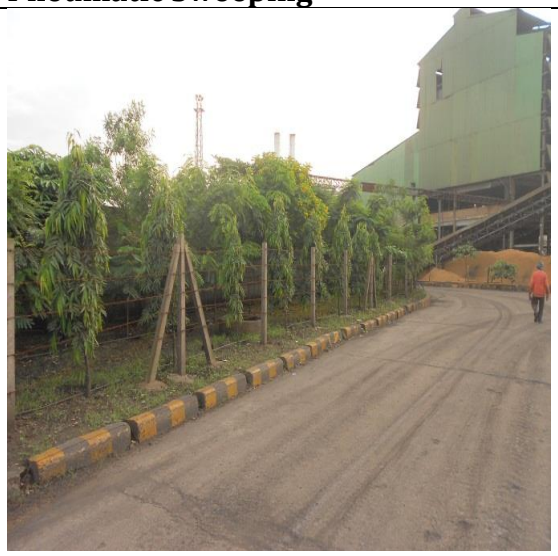
RCC Road



Pneumatic Sweeping



RCC Road



RCC Road

	
Static Sprinklers	**Mobile Sprinklers**

ESP attached with Chimney – Power Plant



Bag filters Attached with Chimney – Ferro Alloy Plant





An ISO/IEC 17025:2017 NABL Accredited Testing Lab

RAL | RELIABLE ANALYTICAL LAB | Water & Waste Water , Industrial & Environment Pollution, Food & Agriculture Products Analytical Lab | TC - 11719

TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/DEC/0129	24/12/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/DEC/0129	21/12/2024	Reliable Analytical Lab.	Good
Analysis Start Date	21/12/2024	**Analysis End Date**	24/12/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
19/12/2024	3.0 & 3.6 MVA Submerged ARC Furnace A& B Combine Stack	3.0 MVA 3.6 MVA	30 min.	10:30	30. meter	1.4 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 96^0 C**
Ambient Temperature : 25^0 C	**Flue Gas Velocity : 8.52M/Sec.**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	27.62	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

1.The results are related only to the sample tested.
2.This report **shall** not be reproduced without the written approval of RAL.
3.Specification as per consent.
4.The legal liabilities limited up to the analytical charges only.
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6.Statement or conformity to a specifications is given only on the requests of the customer

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TEST REPORT

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Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2 Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/DEC/0130	24/12/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/DEC/0130	21/12/2024	Reliable Analytical Lab.	Good
Analysis Start Date	21/12/2024	**Analysis End Date**	24/12/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
19/12/2024	5.5 MVA & 5.5 MVA Submerged ARC Furnace C & D	5.5 MVA & 5.5 MVA	30 min.	11:00	35 meter	1.4 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 92^0 C**
Ambient Temperature : 25^0 C	**Flue Gas Velocity : 8.16M/Sec.**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	25.64	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

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Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/DEC/0131	24/12/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/DEC/0131	21/12/2024	Reliable Analytical Lab.	Good
Analysis Start Date	21/12/2024	**Analysis End Date**	24/12/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
19/12/2024	6 MVA Submerged ARC Furnace E"	6.0 MVA	30 min.	11:30	40 meter	2.0
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 97^0 C**			
Ambient Temperature : 25^0 C			**Flue Gas Velocity : 9.42M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	23.68	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

1.The results are related only to the sample tested.
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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2 Urla Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/DEC/0132	24/12/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/DEC/0132	21/12/2024	Reliable Analytical Lab.	Good
Analysis Start Date	21/12/2024	**Analysis End Date**	24/12/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
19/12/2024	CLU Convertor and thermite and combine stack	650 KW	30 min.	12:00	35 meter	2.295

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 89^0 C**
Ambient Temperature : 25^0 C	**Flue Gas Velocity : 9.68M/Sec.**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	26.92	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

1.The results are related only to the sample tested.
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TEST- REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/DEC/0134	24/12/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/DEC/0134	21/12/2024	Reliable Analytical Lab.	Good
Analysis Start Date	21/12/2024	**Analysis End Date**	24/12/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
19/12/2024	Captive Power Plant Stack-20 MW	20 MW	30 min.	12:30	73 meter	2.83 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 92^0 C**
Ambient Temperature : 25 ^{0} C	**Flue Gas Velocity : 7.94M/Sec.**
Total Gas Quantity : 244682.84Nm3/hr	

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/Nm^3	32.68	Max.-50	IS 11255 (P-1)1985 RA 2003
2.	Sulphur Dioxide (Sox)	mg/Nm^3	234	Max-600	IS 11255 (P-2) 1985
3.	Oxides of Nitrogen (NOx)	mg/Nm^3	136	Max-300	IS 11255 (P-7) 2005
4.	Carbon Monoxide (CO)*	mg/Nm^3	3.0	-----	USEPA Method No.10
5.	Hg*	mg/Nm^3	N.D.	Max-0.03	AAS Method

Note:

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6.Statement or conformity to a specifications is given only on the requests of the customer
7.(*) This parameter not covered our NABL Scope

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TEST REPORT

Format No. RAL/F-40 A

Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/DEC/0127	24/12/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/DEC/0127	21/12/2024	Good

Analysis Start Date	21/12/2024	**Analysis End Date**	24/12/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
19/12/2024	Reliable Analytical Lab.	1.Near CHP Area 2. Beside Silo 3. Solar Panel Area 4. Near Main Gate	24 hrs

Ambient Temperature : 25^{0}C	**Wind Direction : from – West east**
Humidity : 45 %	**Cloud Condition : Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result				Specification	Test Method
			1.	2.	3.	4.		
1.	Particulate Matter (PM10)	µg/m^3	60.23	64.28	58.68	59.62	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	28.62	30.24	29.34	30.92	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	25.62	22.85	24.51	28.64	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	30.62	26.86	27.28	32.64	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)	mg/Nm^3	BDL(DL1.15)	BDLDL1.15)	BDL(DL1.15)	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

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RELIABLE ANALYTICAL LAB

Authorized Signatory

RAL | RELIABLE ANALYTICAL LAB
15, Paricharika Nagar, Indore - 452 001 (M.P.)
8103898979, 9907136827
ral2021indore@gmail.com
An ISO 9001:2015 CERTIFIED LAB

TEST REPORT

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/DEC/0128	24/12/2024

Name of Manufacturer	Mfg. License No.	Batch No.	Batch Size	Mfg. Date	Start Date & Time
NA	NA	NA	NA	NA	19/12/202410:20AM Day Time) Night Time 18:00 PM

Sample Name	Sample ID	Date of Receipt Data	Sample Quantity	Packing	Condition of Sample	Sealed/ Unsealed
Ambient Noise Monitoring	RAL/2024/DEC/0128	19/12/2024	NA	NA	NA	NA

Measurement Start Date	19/12/2024	Measurement End Date	19/12/2024

Test Details:-

Sr.	Characteristic /Location	Unit	Result Day Time	Result Night Time	Specification Day	Specification Night	Method of Test
1.	Near CHP Area	**dB**	62.8	54.9	75	70	IS 9989-1981
2.	Beside Silo	**dB**	59.6	55.2	75	70	IS 9989-1981
3.	Solar Panel Area	**dB**	58.7	52.1	75	70	IS 9989-1981
4.	Near Main Gate	**dB**	63.7	54.8	75	70	IS 9989-1981

Note:

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4. Day time shall mean from 06:00 AM to 18:00 & Night time shall mean from 18:00 to 6:00 AM.
5. Equipment ID No.RAL/EQ/ID-21,
6. The legal liabilities limited up to the analytical charges only.
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Conclusion: This report's result is under the specification; Ambient Noise is ok for human health

****

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/APR/101	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/APR/101	10/04/2024	Chemist	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	3.0 & 3.6 MVA Submerged ARC Furnace A& B Combine Stack	3.0 MVA 3.6 MVA	30 min.	12:00	30. meter	1.4 Meter
Stack Attached to		**Bag Filter**				
Fuel Used : Electricity			**Ambient Temperature : 40^0 C**			

Test Details: -

S.No.	Test Parameters	Unit	Result		Specification	Test Method
			A& B Inlet	A & b Outlet		
1.	Flue Gas Temperature of Stack	^{0}C	157.0	112.0	-	IS 11255 (P-1)1985 RA 2003
2.	Flue Gas Velocity	M/Sec	14.3	6.22	-	IS 11255 (P-1)1985 RA 2003
3.	Total gas Quantity	Nm3/h	55120.0	27380.2	-	IS 11255 (P-1)1985 RA 2003
4.	Total Particulate Matter (TPM)	mg/nm^3	785.0	22.54	Max.-30	IS 11255 (P-1)1985 RA 2003
Efficiency (%)			**98.74**			

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Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/APR/102	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/APR/102	10/04/2024	Chemist	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	5.5 MVA& 5.5 MVA Submerged ARC Furnace C & D	5.5 MVA& 5.5 MVA	30 min.	13.30	35 meter	1.4 Meter
Stack Attached to		**Bag Filter**				
Fuel Used : Electricity			**Ambient Temperature : 30^0 C**			

Test Details: -

S.No.	Test Parameters	Unit	Result			Specification	Test Method
			C Inlet	D Inlet	C&D Outlet (Combined Stack)		
1.	Flue Gas Temperature	^{0}C	264.0	254.0	135.0	-	IS 11255 (P-1)1985 RA 2003
2.	Flue Gas Velocity	M/Sec	9.52	11.8	8.01	-	IS 11255 (P-1)1985 RA 2003
3.	Total gas Quantity	Nm3/h	29483.62	33762.72	28647.23	-	IS 11255 (P-1)1985 RA 2003
4.	Total Particulate Matter (TPM)	mg/nm^3	813.0	855.0	27.8	Max.-30	IS 11255 (P-1)1985 RA 2003
Total (TPM)			1668.0		27.8		
Efficiency (%)					**97.94**		

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Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/APR/103	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/APR/103	10/04/2024	Chemist	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	6 MVA Submerged ARC Furnace E"	6.0 MVA	30 min.	10.50	40. meter	2.0 Meter
Stack Attached to		**Bag Filter**				
Fuel Used : Electricity		**Ambient Temperature : 30^0 C**				

Test Details: -

S.No.	Test Parameters	Unit	Result		Specification	Test Method
			E Inlet	E Outlet		
1.	Flue Gas Temperature	^{0}C	189	79.6	-	IS 11255 (P-1)1985 RA 2003
2.	Flue Gas Velocity	M/Sec	15.32	5.45	-	IS 11255 (P-1)1985 RA 2003
3.	Total gas Quantity	Nm3/h	112382.5	48431.2	-	IS 11255 (P-1)1985 RA 2003
4.	Total Particulate Matter (TPM)	mg/nm^3	402.5	26.2	Max.-30	IS 11255 (P-1)1985 RA 2003
Efficiency (%)			**98.77**			

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Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/APR/104	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/APR/104	10/04/2024	Chemist	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	CLU Convertor and thermite and combine stack	650 KW	30 min.	14:55	35 meter	2.295
Stack Attached to		**Bag Filter**				
Fuel Used : Electricity			**Ambient Temperature : 30^0 C**			

Test Details: -

S.No.	Test Parameters	Unit	Result		Specification	Test Method
			CLU Inlet	CLU Outlet		
1.	Flue Gas Temperature of Stack	^{0}C	287	96.0	-	IS 11255 (P-1)1985 RA 2003
2.	Flue Gas Velocity	M/Sec	10.55	21.32	-	IS 11255 (P-1)1985 RA 2003
3.	Total gas Quantity	Nm3/h	79721.8	256810.5	-	IS 11255 (P-1)1985 RA 2003
4.	Total Particulate Matter (TPM)	mg/nm^3	2850.1	23.4	Max.-30	IS 11255 (P-1)1985 RA 2003
Efficiency (%)			**98.56**			

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Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/APR/105	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/APR/105	10/04/2024	Chemist	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	Captive Power Plant Stack-20 MW	20 MW	30 min.	16:55	35 meter	2.83 Meter
Stack Attached to		**Bag Filter**				
Fuel Used : Coal & Coke		**Ambient Temperature : 30^0 C**				

Test Details: -

S.No.	Test Parameters	Unit	Result		Specification	Test Method
			20 MW Inlet	20 MW Outlet		
1.	Flue Gas Temperature of Stack	^{0}C	146	117.0	-	IS 11255 (P-1)1985 RA 2003
2.	Flue Gas Velocity	M/Sec	18.37	12.8	-	IS 11255 (P-1)1985 RA 2003
3.	Total gas Quantity	Nm3/h	798364.62	302749.27	-	IS 11255 (P-1)1985 RA 2003
4.	Total Particulate Matter (TPM)	mg/nm^3	745.0	32.93	Max.-50	IS 11255 (P-1)1985 RA 2003
Efficiency (%)			**98.99**			

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(राष्ट्रीय महत्व का संस्थान)

National Institute of Technology Raipur
(An Institution of National Importance)

Department of Civil Engineering

No. NITRR /Civil /Consultancy/ 2021/ ...197... Raipur, Dated: 11-11-2021

To,

HIRA Power & Steel Ltd., Unit II
Urla Industrial Complex
Raipur (Chhattisgarh) - 492003

Subject: Submission of Report "Planning and Designing for Rain Water Harvesting System in the Industry"

Reference: 1. Service Order No. No. 7200003266/P101; Dated 19.06.2021
2 Tax Invoice No. NITRR/Civil/1981; Dated 09.07.2021

****

Sir,

With reference the **planning and Designing for Rain Water Harvesting System in the premises of industry as mentioned above, 01 copy of the detailed report is hereby submitted, inclusive of following items:** :

1. Site visit & field observation details
2. Location map of site
3. Rainfall analysis
4. Runoff assessment
5. Adequacy of drainage provided
6. Rain water harvesting system and identification of artificial recharge zone for groundwater recharge
7. Recommendations

Prepared By:

10/11/2021

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10/11/2021

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Forwarded by:

11.11.21

Head, Civil Engg Dept.
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G.E. ROAD, RAIPUR (Chhattisgarh) 492 010
☎ : 0771-4270336; 2255920 (Dept); 🖷: 2255261; URL: www.nitrr.ac.in

REPORT

Planning And Designing for Rainwater Harvesting System in Hira Power & Steels Ltd., Unit-2, Urla (Raipur)

(Service Order No. 7200003266/P101; Dated 19.06.2021)

Submitted by:

Dr. Ishtiyaq Ahmad

Dr. Mani Kant Verma

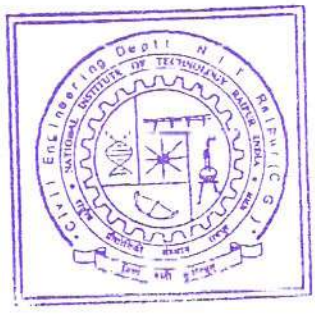
Dr. D. C. Jhariya

National Institute of Technology Raipur

Chhattisgarh – 492010

TABLE OF CONTENT

S.No.	PARTICULARS	Page No.
1.	SITE VISIT & FIELD OBSERVATIONS	3
2.	OBJECTIVE OF STUDY	5
3.	LOCATION OF SITE	5
4.	RAINFALL ANALYSIS	9
5.	RUNOFF ASSESSMENT	14
6.	ADEQUACY OF DRAIN PROVIDED	17
7.	RAIN WATER HARVESTING SYSTEM AND IDENTIFICATION OF ARTIFICIAL RECHARGE ZONE FOR GROUNDWATER RECHARGE	19
8.	RECOMMENDATIONS	51
9.	REFERENCES	52



1. SITE VISIT & FIELD OBSERVATIONS:

The site was visited by Dr. Ishtiyaq Ahmad, Dr. Mani Kant Verma [Asstt Prof., Dept. of Civil Engg. NIT Raipur] & Dr. D. C. Jhariya [Asstt Prof., Dept. of Applied Geology, NIT Raipur] along with HIRA Group Officials on **25th June 2021**. The observations and photographs of the important locations were taken during preliminary site visitfor necessary actions. After the preliminary site visit, topographic survey has been performed on the site for obtaining elevation and checking the suitability of the drainage structure provided. The topographic survey was performed using advanced surveying instruments like Differential Global Positioning System (DGPS) & Total Station. The field survey and hydrogeological survey was performed over the site to obtain necessary primary data for further advancement.



Fig. 1. Site visit by officials



Fig. 2. Survey performed on site with various instruments

Following dataset was provided by HIRA group after the visit:

1. Working/surface plan of HIRA Power & Steels Ltd.
2. Bore well detail.
3. Water logging points within the site.

2. OBJECTIVE OF STUDY:

The scope for scientific study on "Planning and Designing for Rainwater Harvesting System in Hira Power & Steels Ltd., Unit-2, Urla (Raipur)" are as follows:

1. Rainfall data assessment with its future trend.
2. Survey of the plant for existing drainage.
3. Survey of the plant for rooftop area estimation.
4. Survey for the slope identification/ flow path.
5. Identification of suitable site for ground water recharge.
6. Identification of rooftop slope/ drainage path draining to the existing drainage system and the section which is not draining to an existing system.
7. Hydrogeological study for identifying suitable site for ground water recharging.
8. Estimation of rainfall and runoff amount with various parts of the year.
9. Design and drawing of rainwater harvesting structures.
10. Feasibility study of rain water harvesting system.

3. LOCATION OF SITE:

The HIRA Power & Steels Ltd. is located in Urla Industrial Complex, Urla, District: Raipur of Chhattisgarh state between latitudes 21°18'52.9236"N to 21°19'18.3828"N and longitudes 81°37'0.2676"E to 81°37'19.4412"E. The location map is shown below as **Fig. 3.** The entire area within the plant has been categorized into various classes based on land use land cover as per the current condition and computed using Google Earth and GIS platform by taking the reference of plant layout provided in the form of AutoCAD drawing. Boundary map is shown in **Fig. 4** & details are given in **Table 1** and **2.**

Table 1. Categorized area within plant into various classes

S. No.	Description of area	Area (in hectares)	Area (%)
1	Roofs	6.21	35.29
2	Pavement (Concrete)	5.43	30.86
3	General unimproved lands	3.56	20.22
4	Parks	0.25	1.42
5	Woodlands with sandy soils	2.15	12.21
	Total =	17.60	100.00

Table 2. Land use around the proposed drainage network

S. No.	Description of area	Area (in hectares)	Area (%)
1	General unimproved lands	3.40	19.31
2	Pavement (Concrete)	1.18	6.70



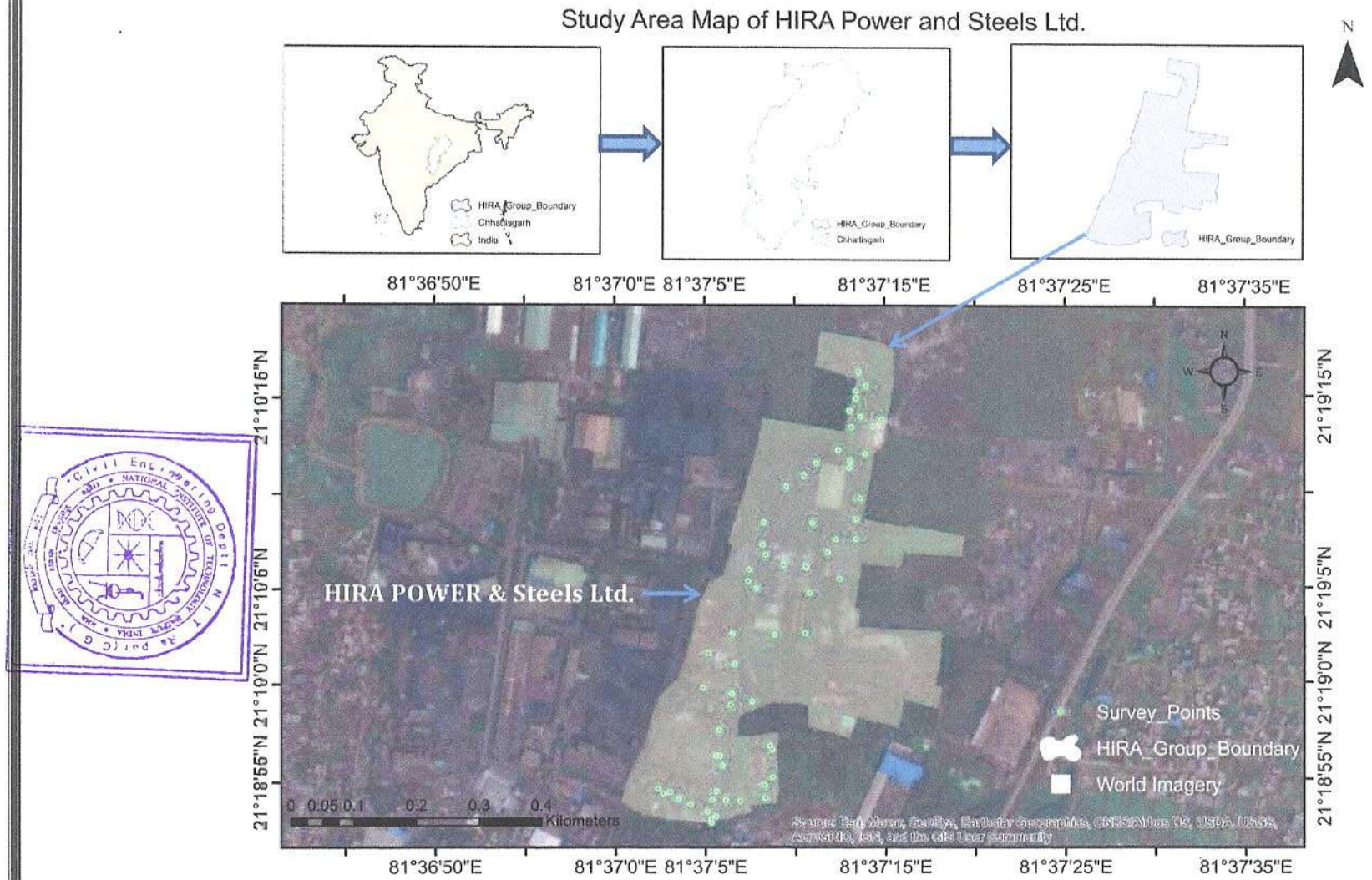


Fig. 3. Location of HIRA Power & Steels Ltd.



S. No.	Description of Area	Area (in hectares)	Area (%)
1	Roofs	6.21	33.16
2	Pavement (Concrete)	5.43	28.85
3	General unimproved lands	3.56	20.23
4	Parks	0.25	1.42
5	Woodlands with sandy soils	2.15	12.22
	Total	17.60	100.00

Fig. 4. Boundary map of HIRA Power & Steels Ltd

4. RAINFALL ANALYSIS:

The daily rainfall data was obtained from Indian Meteorological Department (IMD) gridded data for the period of 1901 to 2017. The monsoon sets in the month of June and continues till October. The graph in **Fig. 5** represents the plot of annual rainfall (mm) for last 117 years. The graph in **Fig.6** represents the plot of annual daily maximum rainfall (mm) for last 30 years. The graph in **Fig.7** represents the plot of annual 5-day maximum rainfall (mm) for last 30 years.The study area is receiving maximum rainfall during monsoon season with mean annual rainfall of **1385.83 mm**. **Fig. 8 and Fig. 9** are the drainage catchment area and contour map of the plant. **Fig. 10** represents proposed drainage network, proposed water treatment plant (WTP) location and proposed probable ground water recharging (GWR) locations.

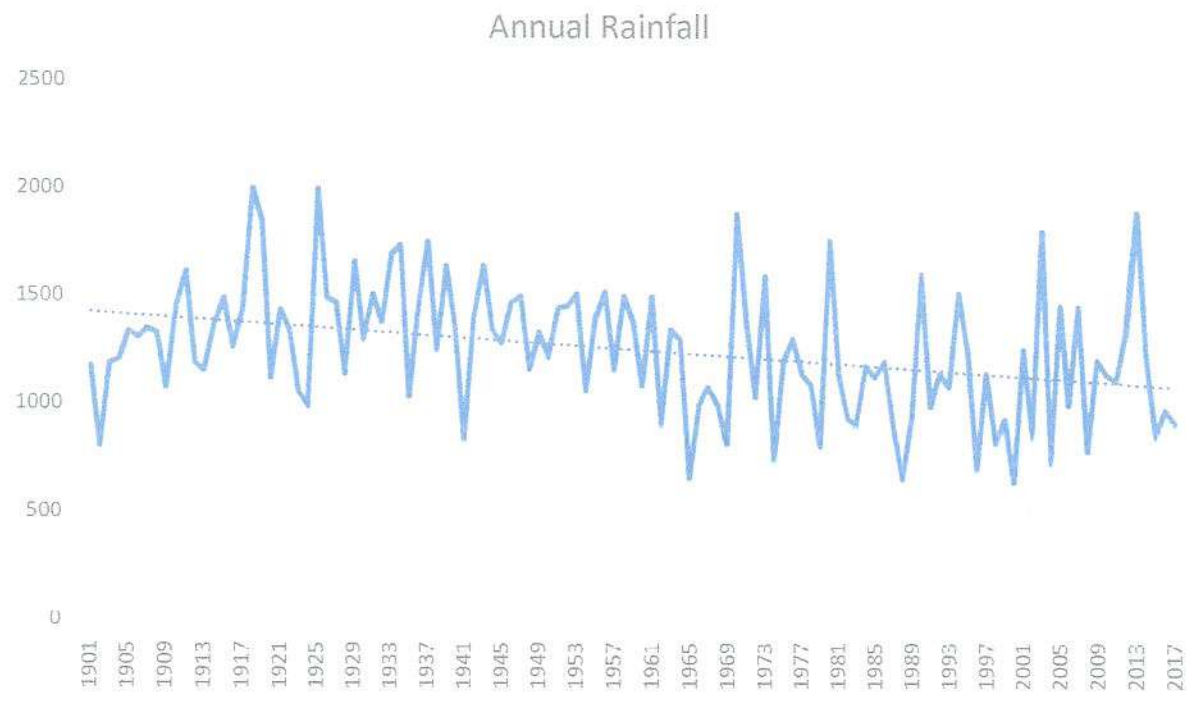


Fig. 5. Plot of Annual rainfall (mm) and Trend for last 117 years

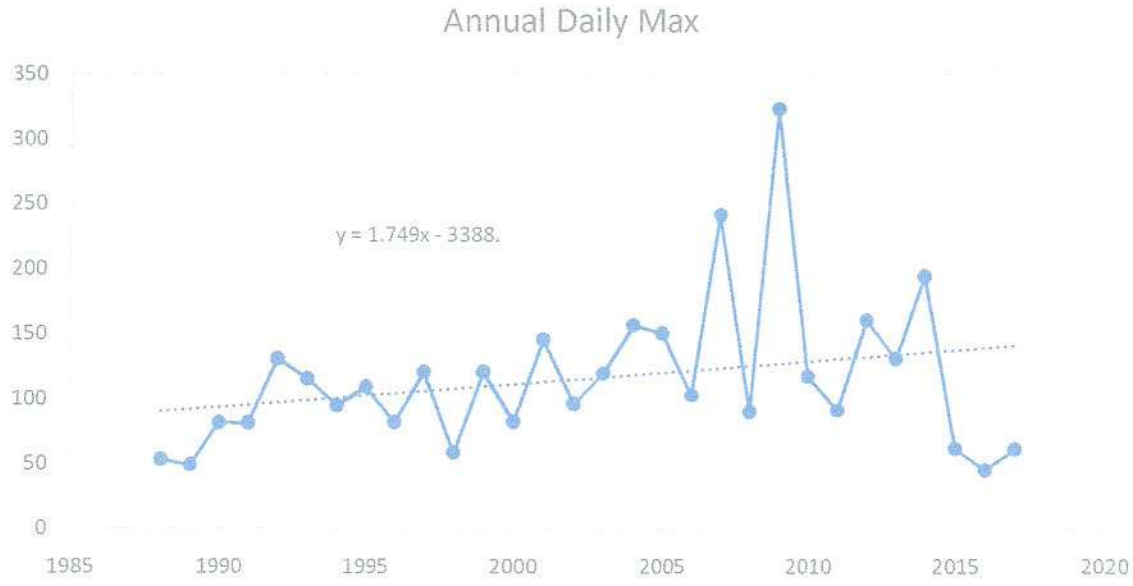


Fig.6. Plot of Annual daily maximum rainfall (mm) and Trend for last 30 years

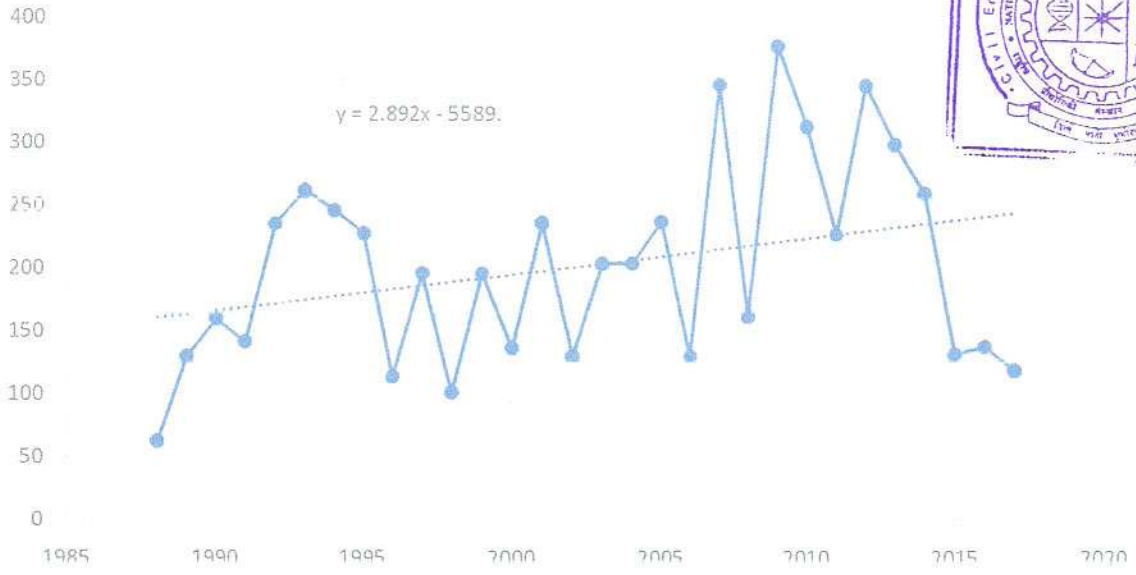


Fig.7. Plot of Annual 5-Day maximum rainfall (mm) and Trend for last 30 years

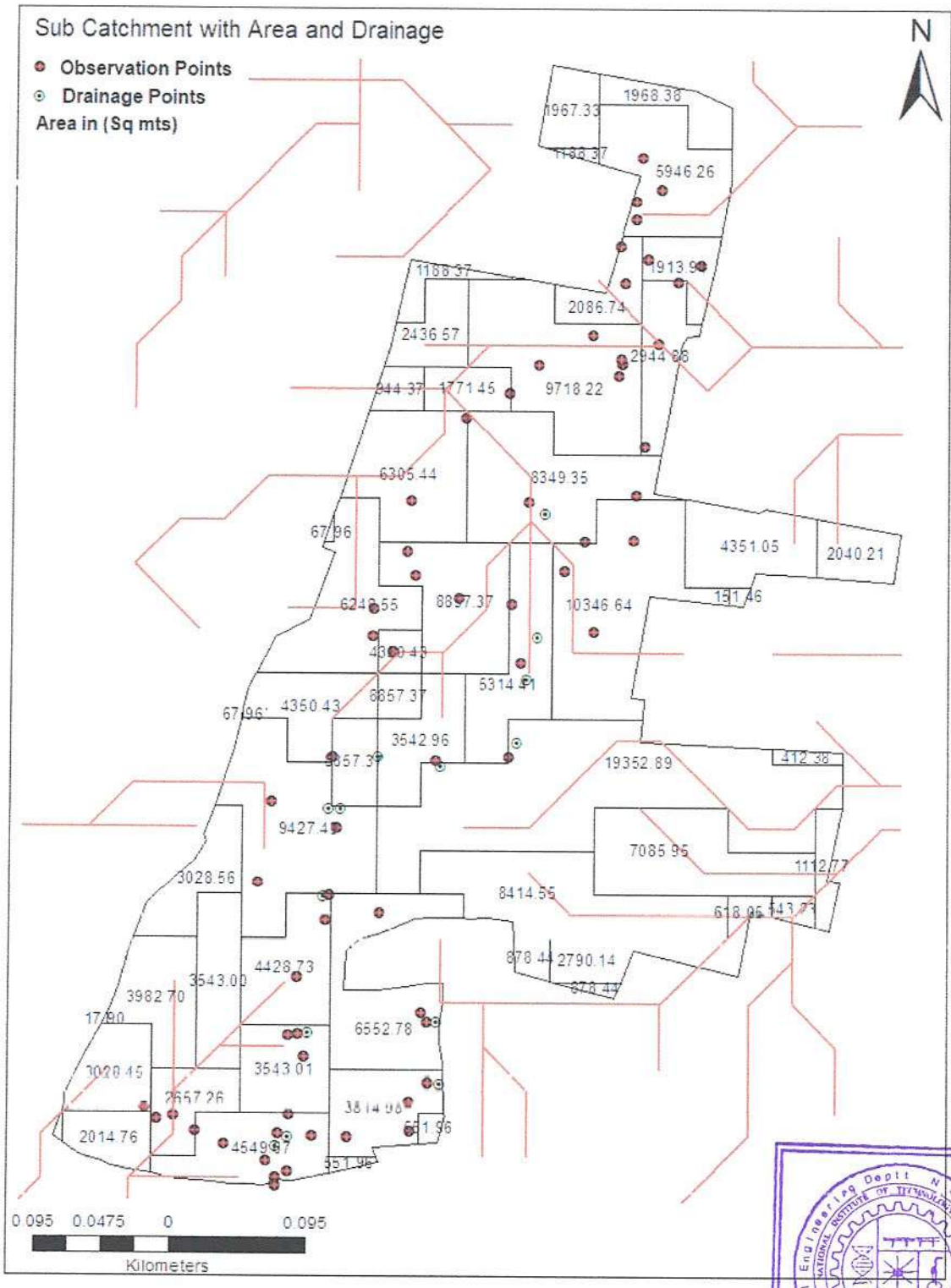


Fig. 8. Drainage catchment area

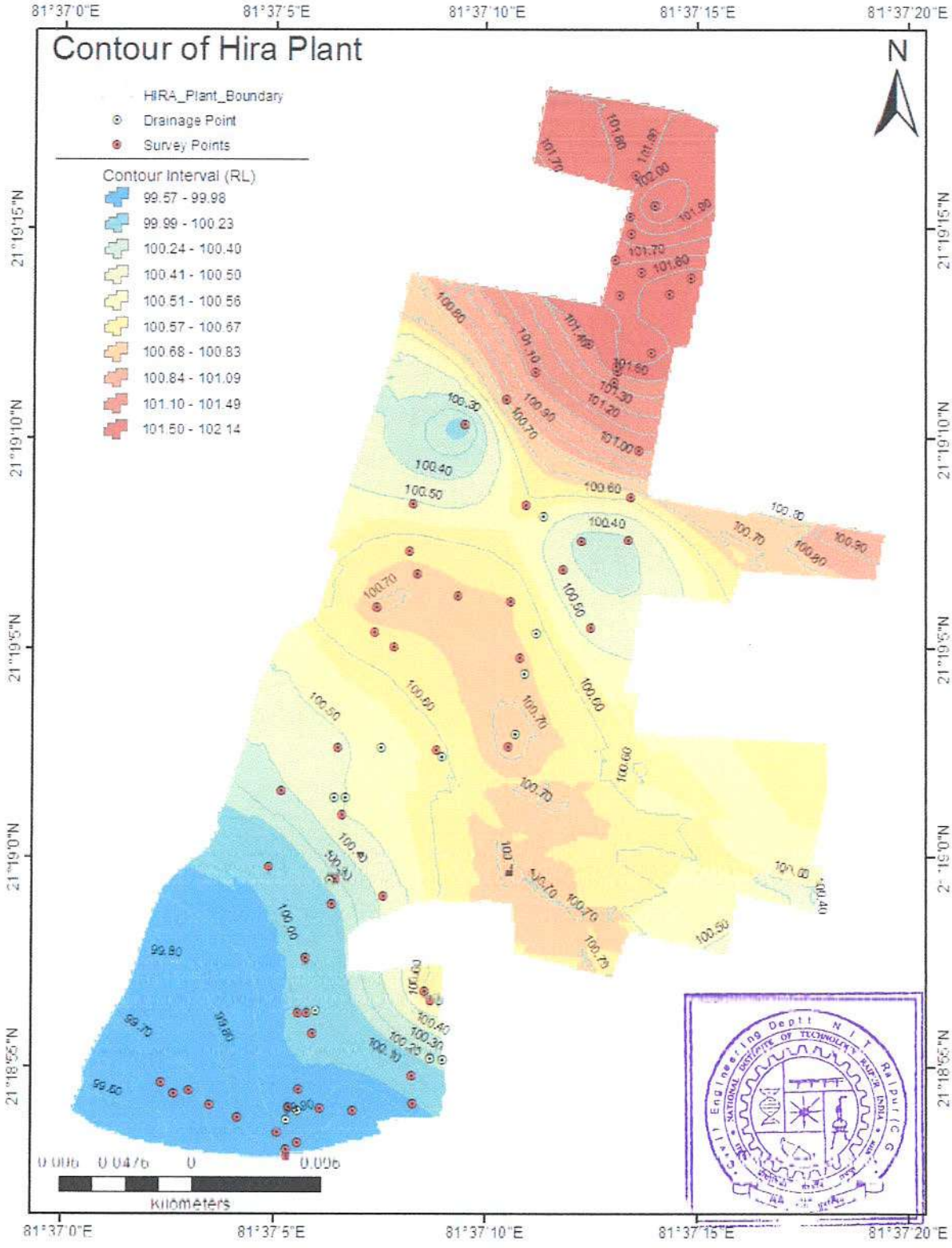


Fig.9. Contour map of Hira Plant

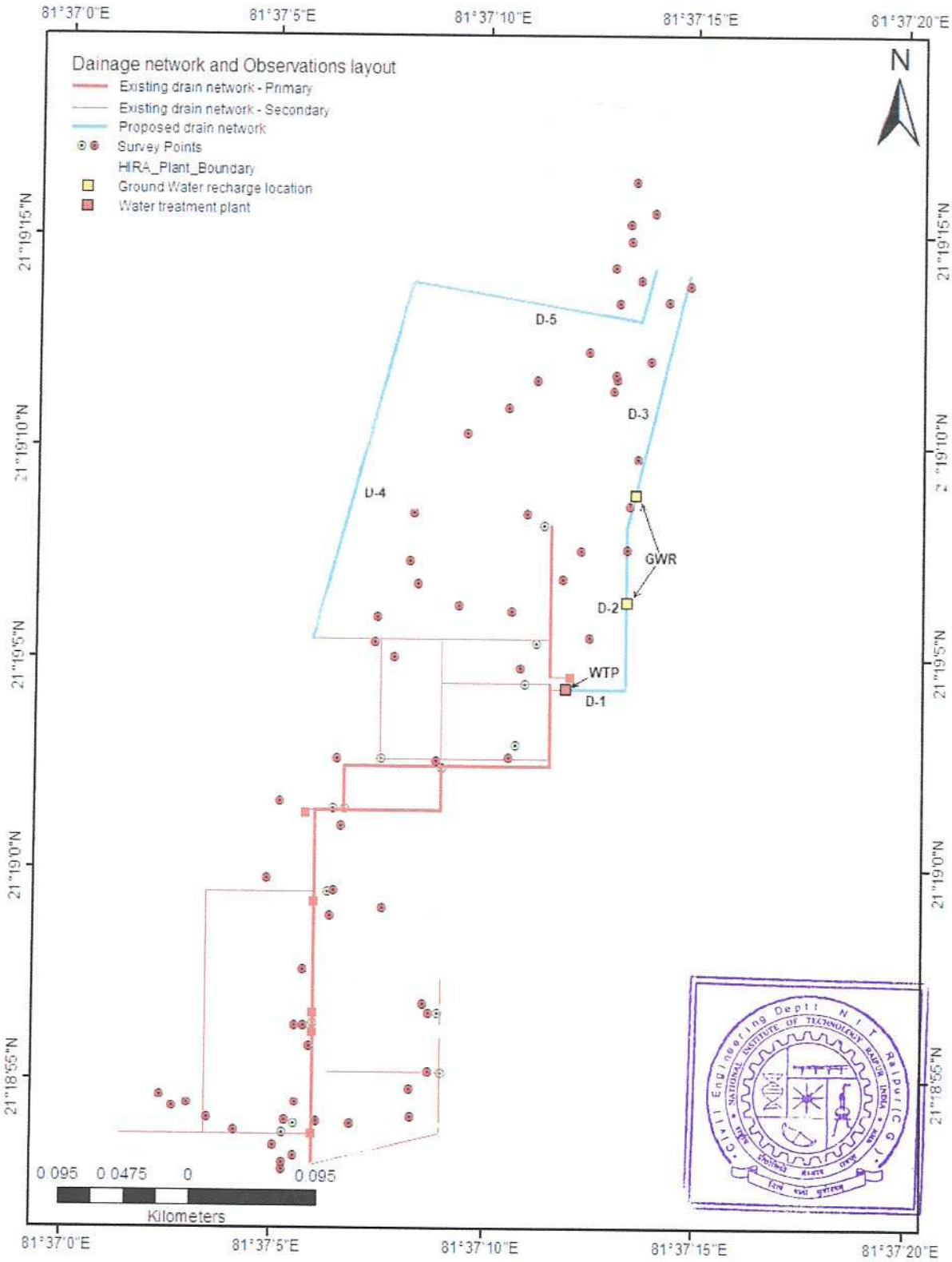


Fig. 10. Drainage network and observational layout diagram

5. RUNOFF ASSESSMENT:

Potential amount of runoff is computed by using rational formula. The runoff is computed using following equation

$$Q = 0.028 * P * A * I_c$$

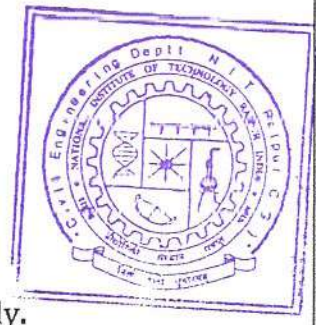
Where,

Q = max- runoff in m^3/s;
P = co-efficient of runoff for the catchment characteristics;
A = area of catchment in hectares;
I_c = critical intensity of rainfall in cm/hour.

The principal factors governing P are: (i) porosity of the soil, (ii) area, shape and size of the catchment, (iii) vegetation cover, (iv) surface storage viz. existence of lakes and marshes, and (v) initial state of wetness of the soil. Catchments vary so much with regard to these characteristics that it is evidently impossible to do more than generalize on the values of P. Judgment and experience must be used in fixing P.

Table 3: Maximum value of P in the formula $Q = 0.028 * P * A * I_c$

Steep, bare rock and also city pavements	0.90
Rock, steep but wooded	0.80
Plateaus, lightly covered	0.70
Clayey soils, stiff and bare	0.60
lightly covered	0.50
Loam, lightly cultivated or covered	0.40
largely cultivated	0.30
Sandy soil, light growth	0.20
covered, heavy brush	0.10



Based on the catchment characteristics, the value of P is taken respectively.

Table 4: Based on categorization of area within plant value of P is taken as shown

S. No.	Description of area	Value of P	Area (in hectares)	Area (%)
1	Roofs	0.95	6.21	35.29
2	Pavement (Concrete)	0.95	5.43	30.86
3	General unimproved lands	0.4	3.56	20.22
4	Parks	0.25	0.25	1.42
5	Woodlands with sandy soils	0.15	2.15	12.21
		Total =	17.60	100.00

Intensity of rainfall is determined using the equation,

$$i = \frac{KT^X}{(D+a)^n}$$

Where,

i = maximum intensity (cm/h);

T = return period (years);

D = duration (hours);

K, x, a and n are coefficients for the area represented by the station.

Rambabu et al. (1979) have analyzed the self-recording rain gauge rainfall records of 42 stations in the country and have obtained the values of coefficients K, x, a and n. For the central zone of India and with reference to nearest of study area the values are taken as:

K= 11.45, x= 0.156, a=1.25, n=1.032.

Hence the equation gets reduced to:

$$I = \frac{11.45 * T^{0.156}}{(D+1.25)^{1.032}}$$

Determining the critical rainfall intensity for 50 years return period and 24 hours duration using above equation:

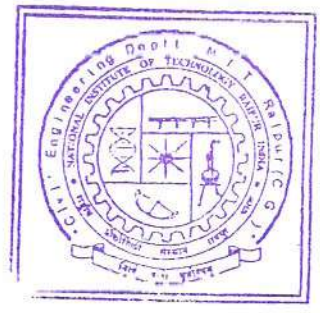
$$i = \frac{11.45 * 50^{0.156}}{(3 + 1.25)^{1.032}}$$
$$i = 4.74\ cm/h$$

Taking factor of safety and peak flow conditions into consideration, the value for critical intensity of rainfall $\mathbf{i_c}$ is taken as **5 cm/h.** From IDF curve the maximum intensity of rainfall for 50 years return period is obtained as **6 cm/h.** Therefore, the maximum hourly rainfall is taken as **6 cm/h** and maxima daily rainfall from historical record length is taken as **180 mm/day** for the analysis in the present study.

Thus, runoff generated for different catchments are mentioned as below:

Table.5 Runoff generated for the area categorized within the plant for proposed drainage network

Proposed Drain	Drain Catchment Area (hectare)	Value of P	Intensity of rainfall (cm/h)	Runoff, Q (m^3/s)
D-1	0.2540	0.4	6	0.0170
D-2	0.7806	0.4	6	0.0527
D-3	0.4859	0.4	6	0.0326
D-4	1.8892	0.4	6	0.1269
D-5	1.1804	0.95	6	0.1884
			Total runoff generated=	**0.4176**



6. ADEQUACY OF DRAIN PROVIDED:

In order to cater the drainage of rain water or water accumulated in the site from this categorized area, a series of drains and settling pits have been provided in the plant.

The drain size and its capacity provided to carry out water from each categorized area are mentioned in **Fig.11** and **Table 6** as:

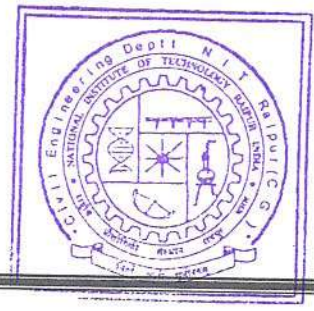
Table. 6 Runoff generated for each catchment

S. No.	Proposed Drain	Depth (m)	Width (m)	Slope	Area (sq. m.)	Perimeter (m)	Hydraulic Mean Depth (m)	Velocity (m/s)	Drain Capacity (m^3/s)
1.	D-1	1.0	0.50	1:944	0.5	2.5	0.2	0.3180	0.1590
2.	D-2	1.0	0.50	1:968	0.5	2.5	0.2	0.3140	0.1570
3.	D-3	1.0	0.50	1:1025	0.5	2.5	0.2	0.3052	0.1526
4.	D-4	1.0	0.50	1:540	0.5	2.5	0.2	0.4204	0.2102
5.	D-5	1.0	0.50	1:654	0.5	2.5	0.2	0.3821	0.1910

Now comparing the runoff generated for each catchment with respect to the drain capacity provided for conveying the water in the form of drain for each categorized area to check its adequacy in the **Table 7** below:

Table. 7 Adequacy of garland drain provided

Proposed Drain	Runoff Generated, Q (m^3/s)	Drain Capacity (m^3/s)	Check (Drain Capacity > Runoff generated)	Status of Garland Drain Provided
D-1	0.0170	0.1590	Yes	adequate
D-2	0.0527	0.1570	Yes	adequate
D-3	0.0326	0.1526	Yes	adequate
D-4	0.1269	0.2102	Yes	adequate
D-5	0.1884	0.1910	Yes	adequate



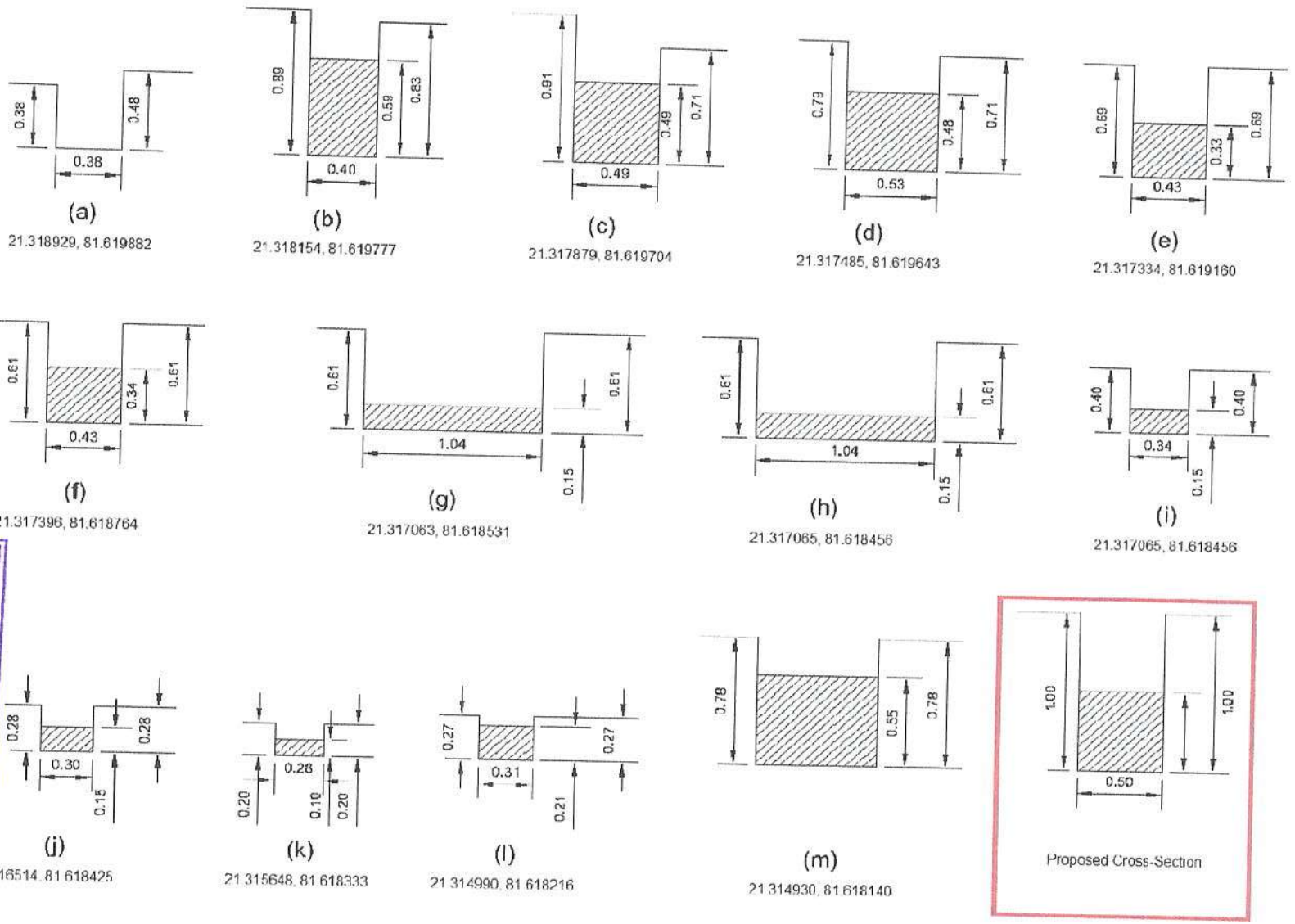


Fig.11. Cross-section of drain provided for each catchment to carry water

7. RAIN WATER HARVESTING SYSTEM AND IDENTIFICATION OF ARTIFICIAL RECHARGE ZONE FOR GROUNDWATER RECHARGE

The term artificial recharge refers to the transfer of surface water to the aquifer by human interference. Artificial recharge provides sustainability to groundwater by restoring supplies to aquifers depleted due to excessive draft and to enhance recharge to the aquifers lacking adequate natural recharge both in space and time. The natural process of recharging the aquifers is accelerated through percolation of stored or flowing surface water otherwise not percolating into the aquifers. Selection of cost-effective and efficient recharge techniques at suitable locations should be the main thrust along with the emphasis on optimum utilization of available hydrological resources in the area through multi-disciplinary scientific investigations.

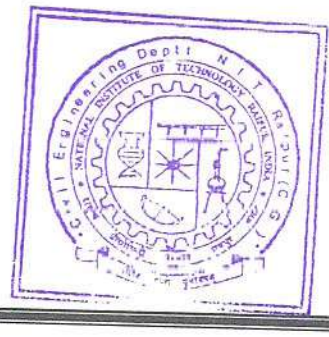
The continuous decline of groundwater level in the phreatic aquifers in urban areas is of greater concern. As a management measure, further construction of abstraction structures tapping phreatic aquifer should be discouraged and suitable measures should be taken to check the future decline of the water table by implementing suitable artificial recharge scheme on an extensive scale. Adoption of water conservation practices and designing of artificial recharge and rainwater harvesting structures requires enormous scientific inputs for providing an appropriate solution with suitably designed successful water conservation and recharge structures to have a sustainable water supply for future.

Study was undertaken to estimate the rainwater harvesting potential and to ascertain the feasibility of ground water recharge and identification of suitable recharge.

Purpose and Scope:

The Scope of the work included the following:

Feasibility study of groundwater harvesting system for of suitable rainwater harvesting and groundwater recharge system.



Geophysical Investigation:

Geophysical surveys are non-destructive methods that provide subsurface hydrogeological information beneath the earth surface to identify suitable location for deciding proper structure/ design for rainwater harvesting. The investigation was conducted. Total 7 Schlumberger Vertical Electrical Sounding (VES) were conducted at different locations in the premises of study area. Sounding locations are shown in figure.

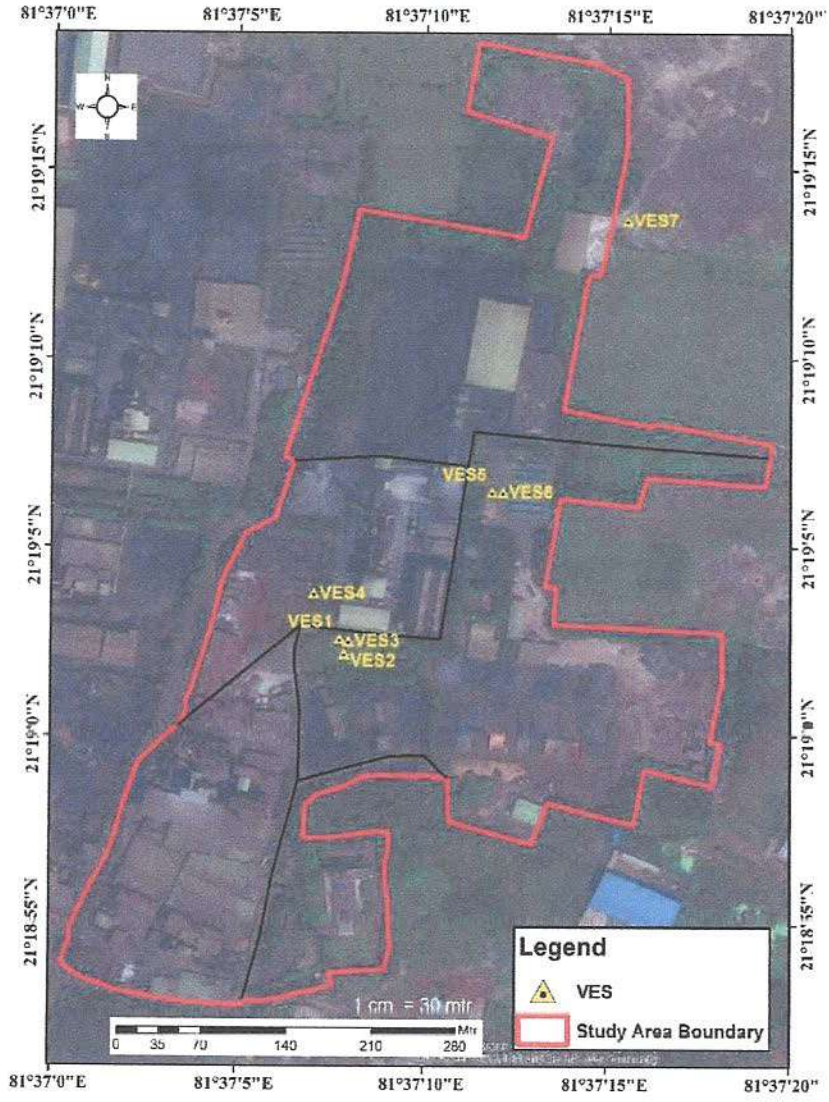


Fig.12.Sounding locations RS-1 to RS-7

Table 8: Survey point coordinates.

S. No.	Survey Traverse	Coordinates	
		Latitude	Longitude
1	VES1	21.317383	81.618811
2	VES2	21.317369	81.618816
3	VES3	21.317369	81.618876
4	VES4	21.317712	81.618718
5	VES5	21.318465	81.619957
6	VES6	21.318447	81.619971
7	VES7	21.32099	81.621713





Fig.13.Field work photo.

Electrical Resistivity Survey has been carried out at proper places in the study area using the Resistivity meter. Data sets were obtained with the use of the Resistivity meter and the values of the apparent resistivity and the current electrode spacing (AB/2), partial curve matching has been carried out using the standard and the auxiliary curves. The computer interpretation is also carried out on the obtained data using the IPI2WIN software. This software is helpful in interpretation of geophysical data to know the subsurface layer, thicknesses of each layer and the number of layers. In this study about 07 number of Vertical Electrical Sounding has been carried out at suitable places in the study area.

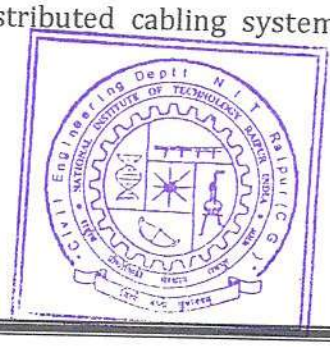
The electrical resistivity method is a useful geophysical tool provides information about the near-surface structures. The Electrical Resistivity method is used to provide reliable information about the subsurface layers. Electrical Profiling (PR) can also be used to determine the aquifer depth, aquifer geometry hydraulic conductivity, the water quality of the aquifer rock, and geological stratigraphy are reported by researchers (Chandra et al., 2008).

In this study, an attempt has been made to infer the fracture zone using the GD-10 Multi-Electrode Resistivity meter and CRM-500 resistivity meter.

Details of Instrumentation and surveying Method

GD-10 Multi-Electrode Resistivity Imaging System

GD-10 is developed based on the latest digital and analog circuitry technique, making it the world-leading multi-functional direct current (DC) method instrument. GD-10 Multi-Electrode Resistivity Imaging System is capable of conducting 2D/3D cross-section profiling of subsurface lithology. Through the array script management in Geomative Studio, we can predefine survey parameters before field surveys. GD-10 is equipped with both centralized cabling and a distributed cabling system to fulfill any complex field environment.



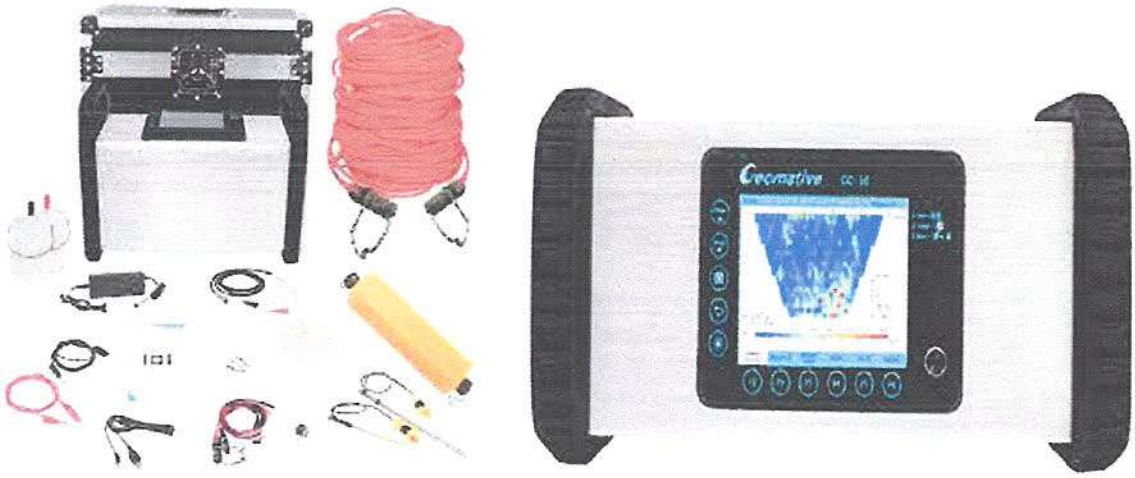


Fig 14.GD-10-multi-electrode resistivity imaging system.



Fig.15.Field survey photograph.

GD-10 generates a well-regulated current (I) to measure the resulting signals voltage ΔV between the two potential electrodes. It then calculates the apparent resistivity R= ΔV/I for the given spacing configuration. The resistivity obtained is the weighted average of all the formations' resistivity through which the current is passing. Apparent resistivity is expressed in Ohm-meter(Ω-m). The analysis of apparent resistivity variations as a function of current electrodes' spacing makes it possible to conclude subsurface geological conditions.

Results and discussions

In this study, four electrical resistivity imaging surveys PR1, PR2, PR3 and PR3 (**Tables10-13**) were carried out using GD-10 multi-Electrode resistivity imaging system to assess the subsurface geological conditions.

The location of survey points are given in **Fig. 15**and **Table 9**.

Table 9: Survey point coordinates.

S. No.	Survey Traverse	Coordinates	
		Latitude	Longitude
1	PR1	21.32099	81.621713
2	PR2	21.320995	81.621711
4	PR3	21.318863	81.621029
4	PR4	21.318447	81.619971



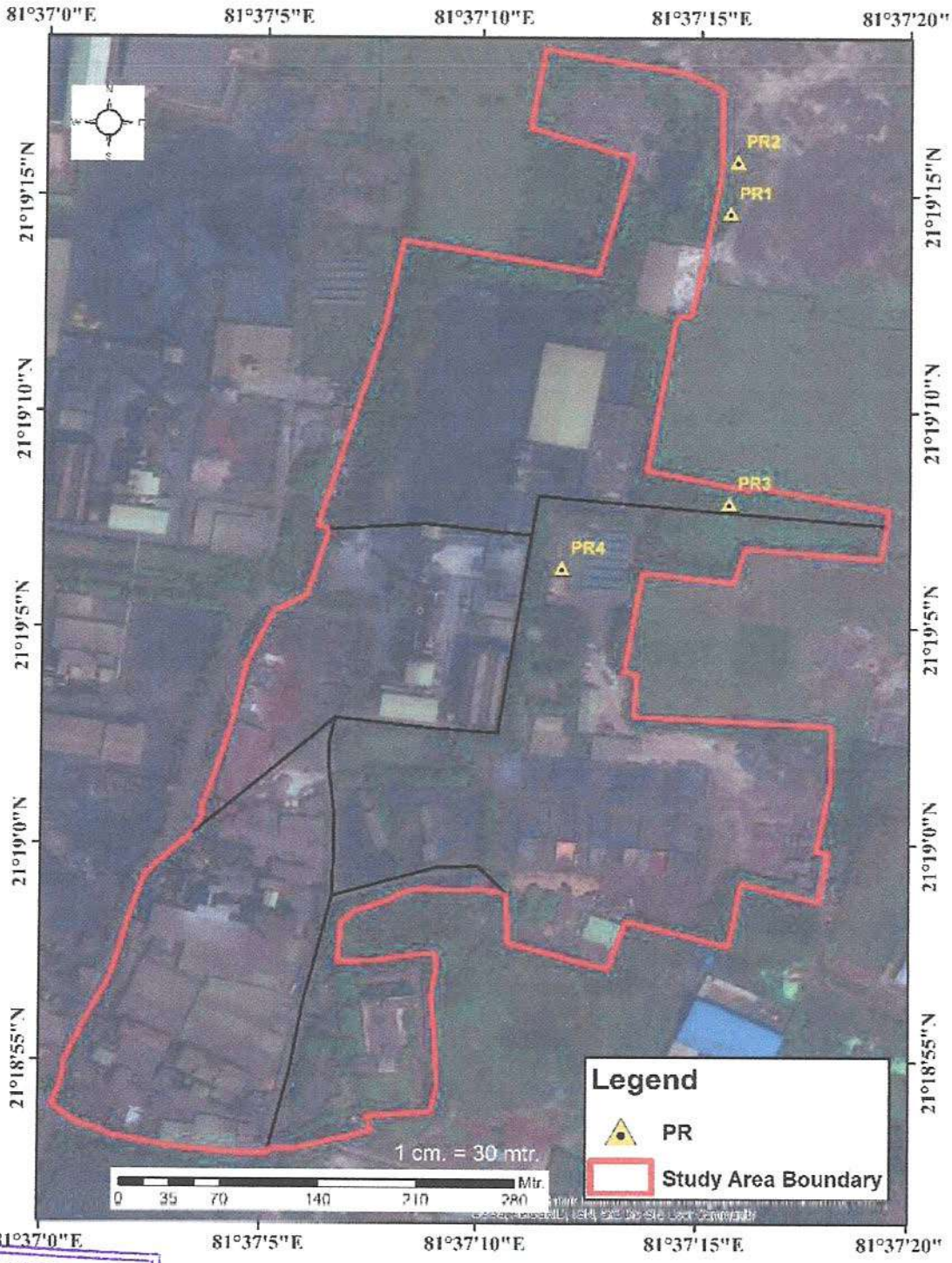
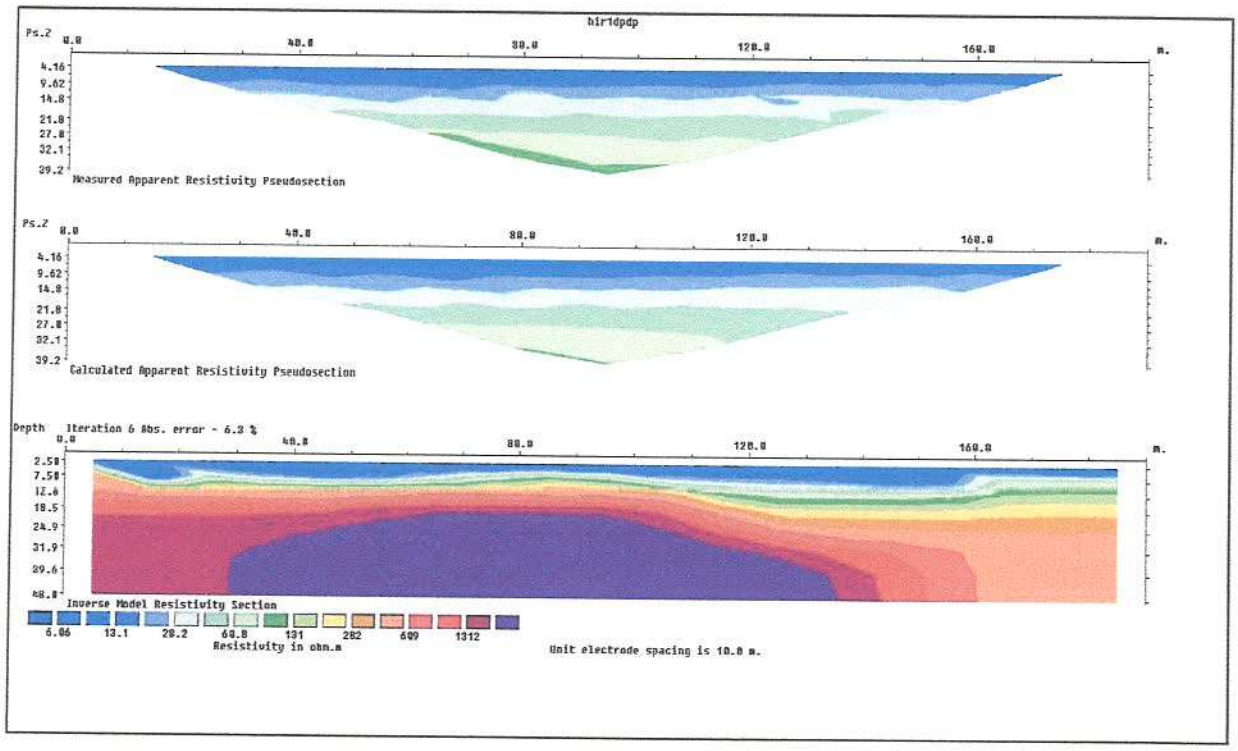


Fig 15.The location of survey points.

Profiling using the Wenner and Schlumberger method of maximum current electrodes spacing of 300 m.The layer parameters are obtained from the recorded field resistivity data using Res2DInv Aarhus GeoSoftware used to assess the subsurface geological heterogeneity are obtained from the recorded field resistivity data (PR). Results from **Figs. 16 - 19** suggest that there is an occurrence of hard rock. There is an occurrence of low resistive layers at the shallow depth and high in the deep.

There is an occurrence of very high resistive layers at a depth of 20 m and greater depth.



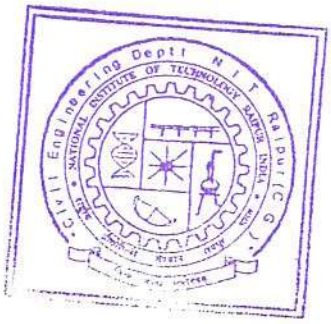


Fig 16.2D Subsurface heterogeneity.

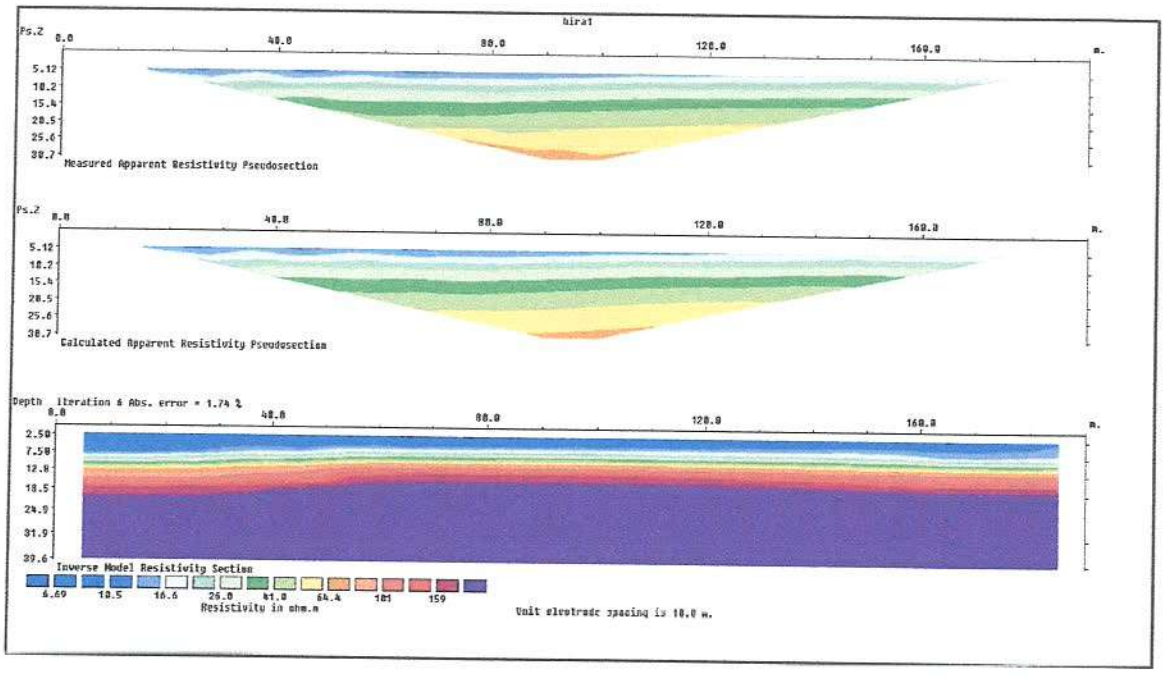
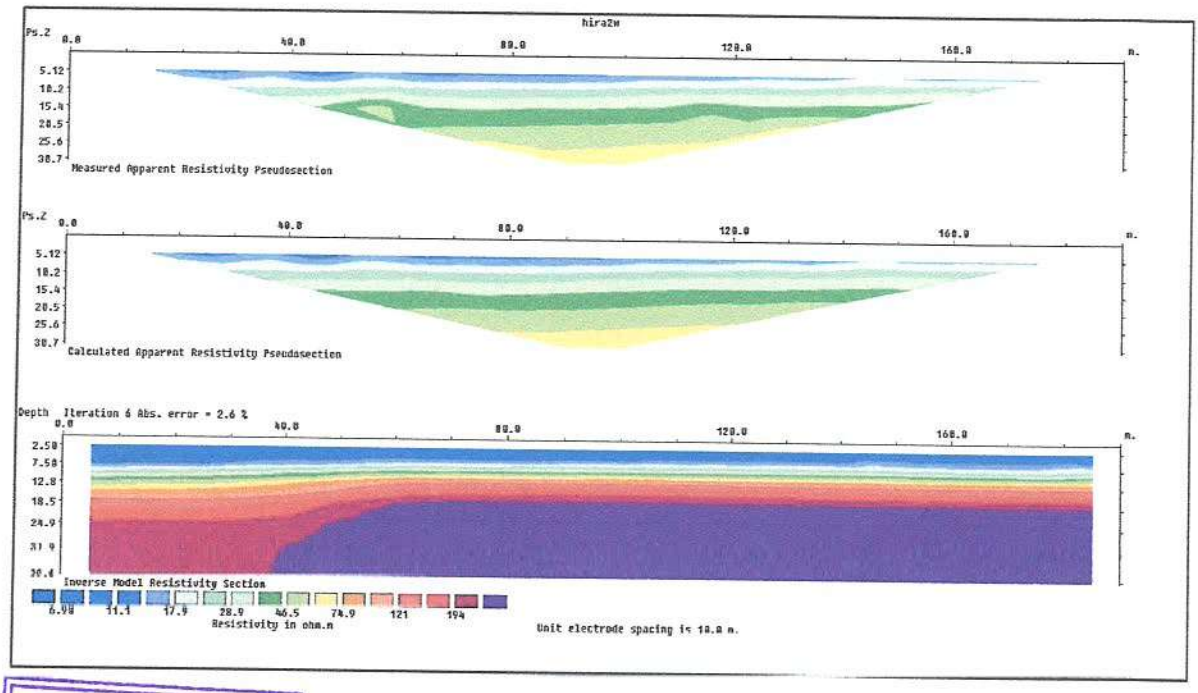


Fig 17.2D Subsurface heterogeneity.



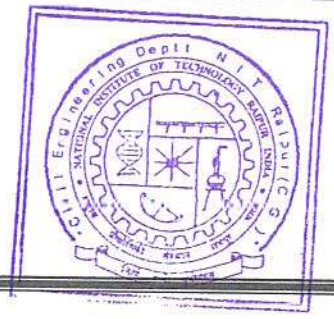


Fig 18. 2D Subsurface heterogeneity

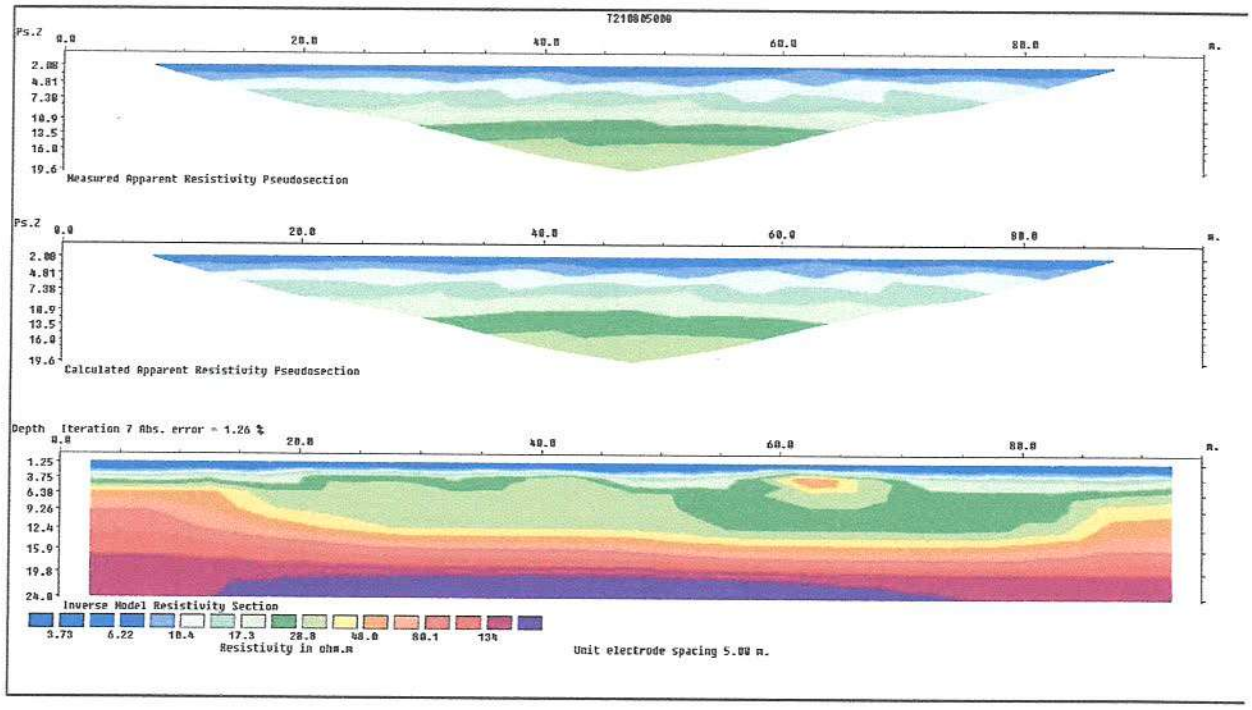


Fig 19. 2D Subsurface heterogeneity.

Table 10. Resistivity data PR-1

A(C1)	B(C2)	M(P1)	N(P2)	K	I(mA)	V(mV)	R(Ohm)	R0	SP
2	1	3	4	188.50	814.24	38.72	0.05	8.96	-416.13
2	1	4	5	753.98	785.02	18.95	0.02	18.20	284.08
2	1	5	6	1884.96	784.30	8.23	0.01	19.78	6.93
2	1	6	7	3769.91	783.37	5.30	0.01	25.50	-25.54
2	1	7	8	6597.34	782.71	4.73	0.01	39.86	140.34
2	1	8	9	10555.75	782.16	2.73	0.00	36.80	-85.04
3	1	10	12	5442.81	775.20	7.64	0.01	53.65	-241.70
3	1	12	14	10108.07	775.58	8.73	0.01	113.76	46.64
3	1	14	16	16846.79	775.68	5.34	0.01	115.96	-217.57
3	1	11	13	7539.82	775.84	6.10	0.01	59.27	-19.93
3	1	13	15	13194.69	776.05	6.27	0.01	106.69	-92.80
3	1	15	17	21111.50	776.08	5.02	0.01	136.51	-88.74
3	2	4	5	188.50	1039.25	68.72	0.07	12.47	282.77
3	2	5	6	753.98	1039.18	20.73	0.02	15.04	4.84
3	2	6	7	1884.96	1039.15	12.39	0.01	22.48	-22.52
3	2	7	8	3769.91	1039.13	6.98	0.01	25.32	132.15
3	2	8	9	6597.34	1039.13	5.00	0.00	31.73	-74.19
3	2	9	10	10555.75	1039.13	3.80	0.00	38.56	254.51
4	1	17	20	13795.08	410.34	2.98	0.01	100.20	-86.64
4	2	11	13	5442.81	548.61	5.24	0.01	51.94	-15.31
4	2	13	15	10108.07	558.12	3.66	0.01	66.30	-95.29
4	2	15	17	16846.79	550.85	2.60	0.00	79.43	-85.37
4	2	12	14	7539.82	548.52	4.04	0.01	55.52	36.49
4	2	14	16	13194.69	546.95	3.02	0.01	72.83	-212.23
4	2	16	18	21111.50	546.93	2.15	0.00	82.98	-93.87
4	3	5	6	188.50	589.80	26.67	0.05	8.53	3.07
4	3	6	7	753.98	590.37	11.77	0.02	15.03	-19.65
4	3	7	8	1884.96	589.70	5.84	0.01	18.66	124.62
4	3	8	9	3769.91	589.79	3.55	0.01	22.71	-63.91
4	3	9	10	6597.34	589.87	2.31	0.00	25.84	253.71
4	3	10	11	10555.75	590.22	1.81	0.00	32.34	-167.36
5	3	12	14	5442.81	1039.34	9.64	0.01	50.49	32.11
5	3	14	16	10108.07	1039.23	6.68	0.01	64.96	-210.44
5	3	16	18	16846.79	1039.20	4.99	0.00	80.84	-90.44
5	3	13	15	7539.82	1039.20	7.92	0.01	57.48	-96.60
5	3	15	17	13194.69	1039.21	5.85	0.01	74.32	-82.33
5	3	17	19	21111.50	1039.27	4.16	0.00	84.45	-66.68
5	4	6	7	188.50	581.62	32.97	0.06	10.69	-17.27

5	4	7	8	753.98	582.12	10.58	0.02	13.70	118.67
5	4	8	9	1884.96	581.67	5.76	0.01	18.66	-55.90
5	4	9	10	3769.91	581.74	3.90	0.01	25.28	252.76
5	4	10	11	6597.34	580.74	2.82	0.00	32.02	-170.16
5	4	11	12	10555.75	579.95	1.91	0.00	34.80	-63.95
6	4	13	15	5442.81	534.11	4.71	0.01	47.98	-96.94
6	4	15	17	10108.07	533.88	3.25	0.01	61.52	-81.06
6	4	17	19	16846.79	533.84	2.51	0.00	79.06	-65.18
6	4	14	16	7539.82	533.80	3.99	0.01	56.43	-209.11
6	4	16	18	13194.69	533.64	2.76	0.01	68.31	-85.33
6	4	18	20	21111.50	533.42	2.14	0.00	84.57	64.31
6	5	7	8	188.50	1039.19	42.45	0.04	7.70	113.72
6	5	8	9	753.98	1039.11	15.84	0.02	11.49	-48.84
6	5	9	10	1884.96	1039.09	8.91	0.01	16.16	251.84
6	5	10	11	3769.91	1039.09	5.94	0.01	21.54	-171.84
6	5	11	12	6597.34	1039.07	4.51	0.00	28.63	-60.30
6	5	12	13	10555.75	1039.07	3.24	0.00	32.96	53.36
7	5	14	16	5442.81	378.32	3.41	0.01	49.02	-208.76
7	5	16	18	10108.07	382.81	2.16	0.01	56.92	-82.41
7	5	18	20	16846.79	386.66	1.86	0.00	80.86	64.43
7	5	15	17	7539.82	389.04	2.94	0.01	56.96	-79.44
7	5	17	19	13194.69	391.50	1.99	0.01	66.92	-62.76
7	6	8	9	188.50	369.08	17.02	0.05	8.69	-43.84
7	6	9	10	753.98	370.87	6.68	0.02	13.59	250.87
7	6	10	11	1884.96	371.62	3.93	0.01	19.91	-172.63
7	6	11	12	3769.91	372.13	3.06	0.01	30.95	-58.00
7	6	12	13	6597.34	380.70	1.78	0.00	30.86	51.66
7	6	13	14	10555.75	383.86	1.40	0.00	38.47	-27.95
8	6	15	17	5442.81	762.86	7.01	0.01	50.02	-78.81
8	6	17	19	10108.07	764.15	4.75	0.01	62.85	-61.56
8	6	16	18	7539.82	764.71	5.74	0.01	56.57	-79.42
8	6	18	20	13194.69	765.19	3.82	0.00	65.79	64.49
8	7	9	10	188.50	289.84	12.47	0.04	8.11	250.43
8	7	10	11	753.98	292.67	5.12	0.02	13.20	-172.93
8	7	11	12	1884.96	293.48	2.86	0.01	18.36	-56.62
8	7	12	13	3769.91	295.34	1.93	0.01	24.64	50.63
8	7	13	14	6597.34	296.40	1.44	0.00	32.03	-27.85
8	7	14	15	10555.75	297.45	0.92	0.00	32.55	-69.21
9	7	16	18	5442.81	226.83	2.11	0.01	50.64	-77.23
9	7	18	20	10108.07	226.40	1.28	0.01	57.10	64.38
9	7	17	19	7539.82	226.13	1.51	0.01	50.35	-59.99

9	8	10	11	188.50	330.16	15.99	0.05	9.13	-173.05
9	8	11	12	753.98	330.49	6.59	0.02	15.03	-55.79
9	8	12	13	1884.96	330.44	3.46	0.01	19.72	49.92
9	8	13	14	3769.91	330.50	2.29	0.01	26.10	-27.79
9	8	14	15	6597.34	330.44	1.52	0.00	30.43	-69.41
9	8	15	16	10555.75	330.37	1.12	0.00	35.75	-140.34
10	8	17	19	5442.81	303.94	2.62	0.01	46.92	-59.26
10	8	18	20	7539.82	304.22	2.12	0.01	52.62	64.04
10	9	11	12	188.50	231.50	11.02	0.05	8.97	-55.02
10	9	12	13	753.98	231.57	4.27	0.02	13.91	49.24
10	9	13	14	1884.96	231.57	2.53	0.01	20.60	-27.58
10	9	14	15	3769.91	231.56	1.59	0.01	25.81	-69.72
10	9	15	16	6597.34	231.54	1.13	0.00	32.22	-140.48
10	9	16	17	10555.75	231.49	0.83	0.00	37.87	63.44
11	9	18	20	5442.81	389.40	3.07	0.01	42.85	64.12
11	10	12	13	188.50	352.97	16.51	0.05	8.82	48.83
11	10	13	14	753.98	353.36	6.85	0.02	14.61	-27.33
11	10	14	15	1884.96	353.32	3.59	0.01	19.16	-69.88
11	10	15	16	3769.91	353.62	2.64	0.01	28.11	-140.67
11	10	16	17	6597.34	353.72	1.47	0.00	27.40	64.03
11	10	17	18	10555.75	353.78	1.26	0.00	37.60	-136.64
12	11	13	14	188.50	199.80	11.18	0.06	10.54	-27.19
12	11	14	15	753.98	200.17	4.36	0.02	16.41	-70.05
12	11	15	16	1884.96	200.25	2.36	0.01	22.26	-140.84
12	11	16	17	3769.91	200.32	1.53	0.01	28.70	64.53
12	11	17	18	6597.34	200.38	0.91	0.00	30.02	-135.31
12	11	18	19	10555.75	200.41	0.93	0.00	48.79	78.81
13	12	14	15	188.50	146.38	8.39	0.06	10.80	-70.16
13	12	15	16	753.98	146.72	3.46	0.02	17.77	-140.94
13	12	16	17	1884.96	146.69	1.65	0.01	21.26	65.00
13	12	17	18	3769.91	146.83	1.09	0.01	27.97	-135.74
13	12	18	19	6597.34	146.86	0.65	0.00	29.38	78.68
13	12	19	20	10555.75	146.88	0.43	0.00	30.69	-15.03
14	13	15	16	188.50	291.88	19.83	0.07	12.81	-141.02
14	13	16	17	753.98	292.25	6.63	0.02	17.10	65.37
14	13	17	18	1884.96	292.33	3.72	0.01	23.97	-135.28
14	13	18	19	3769.91	292.35	2.10	0.01	27.13	78.68
14	13	19	20	6597.34	292.37	1.40	0.00	31.59	-15.02
15	14	16	17	188.50	447.27	26.22	0.06	11.05	65.80
15	14	17	18	753.98	448.62	10.00	0.02	16.81	-134.87
15	14	18	19	1884.96	448.68	5.31	0.01	22.29	78.65

15	14	19	20	3769.91	448.69	3.02	0.01	25.40	-15.27
16	15	17	18	188.50	769.12	49.96	0.06	12.24	-134.63
16	15	18	19	753.98	768.85	18.67	0.02	18.31	78.62
16	15	19	20	1884.96	769.07	9.35	0.01	22.93	-15.37
17	16	18	19	188.50	1039.50	67.39	0.06	12.22	78.68
17	16	19	20	753.98	1039.42	23.39	0.02	16.97	-15.45
18	17	19	20	188.50	1039.40	58.64	0.06	10.63	-15.48

Table 11: Resistivity data PR-2

A(C1)	B(C2)	M(P1)	N(P2)	K	I(mA)	V(mV)	R(Ohm)	R0	SP
1	4	2	3	62.83	409.26	97.74	0.24	15.01	41.82
1	7	3	5	125.66	280.58	52.59	0.19	23.55	-133.68
2	5	3	4	62.83	1039.62	206.22	0.20	12.46	-458.36
1	10	4	7	188.50	112.85	23.90	0.21	39.92	163.17
2	8	4	6	125.66	155.59	30.50	0.20	24.63	339.60
3	6	4	5	62.83	1039.56	255.13	0.25	15.42	166.77
1	13	5	9	251.33	139.18	24.62	0.18	44.45	193.07
2	11	5	8	188.50	134.29	25.37	0.19	35.61	55.95
3	9	5	7	125.66	174.75	35.05	0.20	25.21	124.76
4	7	5	6	62.83	236.69	45.74	0.19	12.14	37.92
1	16	6	11	314.16	775.86	162.10	0.21	65.64	-122.92
2	14	6	10	251.33	177.55	32.13	0.18	45.48	139.26
3	12	6	9	188.50	100.70	19.31	0.19	36.14	16.07
4	10	6	8	125.66	104.78	21.32	0.20	25.57	66.73
5	8	6	7	62.83	157.95	35.65	0.23	14.18	12.28
1	19	7	13	376.99	774.86	152.01	0.20	73.96	31.89
2	17	7	12	314.16	1039.56	183.68	0.18	55.51	-191.00
3	15	7	11	251.33	217.99	39.90	0.18	46.00	17.86
4	13	7	10	188.50	126.64	24.18	0.19	35.98	20.77
5	11	7	9	125.66	136.22	27.06	0.20	24.96	17.24
6	9	7	8	62.83	169.53	33.70	0.20	12.49	-39.02
2	20	8	14	376.99	1039.59	183.25	0.18	66.45	103.95
3	18	8	13	314.16	1039.62	191.48	0.18	57.86	78.55
4	16	8	12	251.33	611.69	116.87	0.19	48.02	-76.46
5	14	8	11	188.50	180.84	36.10	0.20	37.63	-82.00
6	12	8	10	125.66	98.98	19.42	0.20	24.66	82.36
7	10	8	9	62.83	93.50	19.70	0.21	13.24	-35.35
4	19	9	14	314.16	622.28	119.39	0.19	60.27	-117.04
5	17	9	13	251.33	1039.63	204.47	0.20	49.43	19.63

6	15	9	12	188.50	210.32	43.26	0.21	38.77	-233.65
7	13	9	11	125.66	110.06	22.50	0.20	25.69	0.35
8	11	9	10	62.83	74.68	15.56	0.21	13.09	17.92
5	20	10	15	314.16	1039.63	206.28	0.20	62.33	-302.53
6	18	10	14	251.33	1039.37	209.32	0.20	50.62	-15.85
7	16	10	13	188.50	381.69	80.10	0.21	39.56	-148.20
8	14	10	12	125.66	86.56	18.73	0.22	27.20	-178.42
9	12	10	11	62.83	65.18	14.32	0.22	13.80	-131.11
7	19	11	15	251.33	391.53	81.84	0.21	52.54	-54.43
8	17	11	14	188.50	158.61	34.66	0.22	41.19	-38.30
9	15	11	13	125.66	99.79	22.54	0.23	28.38	17.24
10	13	11	12	62.83	69.73	16.72	0.24	15.06	-223.24
8	20	12	16	251.33	158.98	33.88	0.21	53.57	-124.02
9	18	12	15	188.50	175.60	39.39	0.22	42.28	-90.68
10	16	12	14	125.66	123.22	28.12	0.23	28.68	180.35
11	14	12	13	62.83	79.78	19.53	0.24	15.38	59.62
10	19	13	16	188.50	123.56	28.34	0.23	43.24	-473.53
11	17	13	15	125.66	137.95	31.90	0.23	29.05	-104.96
12	15	13	14	62.83	70.22	18.32	0.26	16.39	-72.07
11	20	14	17	188.50	137.74	32.22	0.23	44.09	-244.71
12	18	14	16	125.66	100.85	24.01	0.24	29.92	-308.31
13	16	14	15	62.83	153.90	40.10	0.26	16.37	-240.28
13	19	15	17	125.66	154.51	37.78	0.24	30.72	15.77
14	17	15	16	62.83	183.60	51.61	0.28	17.66	-328.50
14	20	16	18	125.66	183.51	44.81	0.24	30.69	-113.85
15	18	16	17	62.83	220.00	60.29	0.27	17.22	53.69
16	19	17	18	62.83	1039.61	282.65	0.27	17.08	-571.86
17	20	18	19	62.83	1039.54	292.73	0.28	17.69	-247.40

Table 12: Resistivity data PR-3

A(C1)	B(C2)	M(P1)	N(P2)	K	I(mA)	V(mV)	R(Ohm)	R0	SP
1	4	2	3	62.83	408.53	97.63	0.24	15.01	162.60
1	7	3	5	125.66	288.80	54.61	0.19	23.76	-138.59
2	5	3	4	62.83	1039.23	206.14	0.20	12.46	-564.44
1	10	4	7	188.50	310.27	62.08	0.20	37.71	15.70
2	8	4	6	125.66	781.15	150.37	0.19	24.19	323.21
3	6	4	5	62.83	1039.15	255.04	0.25	15.42	219.25
1	13	5	9	251.33	299.30	53.49	0.18	44.01	135.39
2	11	5	8	188.50	832.66	226.41	0.27	51.25	180.44

3	9	5	7	125.66	454.21	90.99	0.20	25.17	-43.99
4	7	5	6	62.83	241.00	46.31	0.19	12.07	-176.47
1	16	6	11	314.16	780.15	155.98	0.20	62.81	329.64
2	14	6	10	251.33	754.03	139.58	0.19	46.52	442.49
3	12	6	9	188.50	209.39	41.53	0.20	37.39	171.73
4	10	6	8	125.66	256.53	53.02	0.21	25.97	289.08
5	8	6	7	62.83	808.20	195.33	0.24	15.19	-13.53
1	19	7	13	376.99	776.34	145.01	0.19	70.42	241.78
2	17	7	12	314.16	1039.24	183.65	0.18	55.52	108.77
3	15	7	11	251.33	734.92	136.76	0.19	46.77	275.36
4	13	7	10	188.50	248.76	48.16	0.19	36.50	339.41
5	11	7	9	125.66	1038.88	206.88	0.20	25.02	129.59
6	9	7	8	62.83	421.84	85.00	0.20	12.66	247.44
2	20	8	14	376.99	1039.26	183.17	0.18	66.44	-29.76
3	18	8	13	314.16	1039.30	190.48	0.18	57.58	-72.08
4	16	8	12	251.33	602.80	115.28	0.19	48.06	-123.04
5	14	8	11	188.50	807.63	164.42	0.20	38.37	5.18
6	12	8	10	125.66	202.58	40.70	0.20	25.25	111.51
7	10	8	9	62.83	204.33	43.00	0.21	13.22	-123.00
4	19	9	14	314.16	611.17	117.03	0.19	60.16	74.98
5	17	9	13	251.33	1039.38	204.65	0.20	49.48	74.21
6	15	9	12	188.50	654.11	133.12	0.20	38.36	-56.11
7	13	9	11	125.66	199.20	40.53	0.20	25.57	131.95
8	11	9	10	62.83	642.03	135.80	0.21	13.29	210.03
5	20	10	15	314.16	1039.37	205.51	0.20	62.12	-225.03
6	18	10	14	251.33	1039.12	209.76	0.20	50.73	-114.94
7	16	10	13	188.50	389.77	80.98	0.21	39.16	-167.32
8	14	10	12	125.66	488.31	105.59	0.22	27.17	-205.88
9	12	10	11	62.83	150.90	32.92	0.22	13.71	-97.06
7	19	11	15	251.33	394.29	81.67	0.21	52.06	-101.74
8	17	11	14	188.50	768.00	184.57	0.24	45.30	-32.44
9	15	11	13	125.66	307.06	69.57	0.23	28.47	-62.51
10	13	11	12	62.83	210.76	50.44	0.24	15.04	-178.92
8	20	12	16	251.33	796.69	200.68	0.25	63.31	-402.42
9	18	12	15	188.50	462.49	101.64	0.22	41.42	28.65
10	16	12	14	125.66	410.90	94.05	0.23	28.76	127.37
11	14	12	13	62.83	625.41	148.82	0.24	14.95	64.99
10	19	13	16	188.50	414.76	94.64	0.23	43.01	-711.70
11	17	13	15	125.66	1038.92	234.30	0.23	28.34	-37.00
12	15	13	14	62.83	171.77	45.66	0.27	16.70	24.57
11	20	14	17	188.50	1038.91	234.07	0.23	42.47	-535.79

12	18	14	16	125.66	212.53	50.96	0.24	30.13	-543.23
13	16	14	15	62.83	393.62	99.73	0.25	15.92	-103.83
13	19	15	17	125.66	397.38	97.82	0.25	30.93	-331.34
14	17	15	16	62.83	824.20	243.95	0.30	18.60	-647.55
14	20	16	18	125.66	770.11	212.04	0.28	34.60	-67.08
15	18	16	17	62.83	758.31	204.56	0.27	16.95	17.97
16	19	17	18	62.83	1039.41	285.46	0.27	17.26	-658.02
17	20	18	19	62.83	1039.38	290.18	0.28	17.54	-222.51

Table13: Resistivity data PR-4

A(C1)	B(C2)	M(P1)	N(P2)	K	I(mA)	V(mV)	R(Ohm)	R0	SP
2	1	3	4	94.25	1039.65	56.13	0.05	5.09	13.87
2	1	4	5	376.99	1039.53	23.81	0.02	8.64	-54.87
2	1	5	6	942.48	1039.48	11.38	0.01	10.32	-180.47
2	1	6	7	1884.96	1039.47	7.38	0.01	13.38	74.59
2	1	7	8	3298.67	1039.46	4.76	0.00	15.11	-86.59
2	1	8	9	5277.88	1039.45	3.27	0.00	16.62	84.61
3	1	10	12	2721.40	1039.50	7.92	0.01	20.75	311.64
3	1	12	14	5054.04	1039.50	5.29	0.01	25.72	-13.88
3	1	14	16	8423.39	1039.49	3.85	0.00	31.18	-12.82
3	1	11	13	3769.91	1039.49	6.25	0.01	22.66	92.53
3	1	13	15	6597.34	1039.51	4.58	0.00	29.09	-57.46
3	1	15	17	10555.75	1039.52	3.26	0.00	33.06	170.23
3	2	4	5	94.25	1039.57	66.20	0.06	6.00	-54.77
3	2	5	6	376.99	1039.50	23.11	0.02	8.38	-181.50
3	2	6	7	942.48	1039.48	12.98	0.01	11.77	75.50
3	2	7	8	1884.96	1039.48	7.46	0.01	13.52	-87.54
3	2	8	9	3298.67	1039.47	4.84	0.00	15.35	85.42
3	2	9	10	5277.88	1039.47	3.10	0.00	15.75	-246.65
4	1	17	20	6897.54	1039.48	5.61	0.01	37.24	-151.27
4	2	11	13	2721.40	1039.43	7.78	0.01	20.37	96.28
4	2	13	15	5054.04	1039.44	5.52	0.01	26.85	-59.69
4	2	15	17	8423.39	1039.44	3.65	0.00	29.59	171.25
4	2	12	14	3769.91	1039.46	6.53	0.01	23.68	-12.68
4	2	14	16	6597.34	1039.48	4.67	0.00	29.65	0.77
4	2	16	18	10555.75	1039.57	3.09	0.00	31.40	92.66
4	3	5	6	94.25	1039.55	58.82	0.06	5.33	-182.72
4	3	6	7	376.99	1039.52	25.06	0.02	9.09	76.40
4	3	7	8	942.48	1039.51	12.43	0.01	11.27	-88.44

4	3	8	9	1884.96	1039.51	7.27	0.01	13.17	86.10
4	3	9	10	3298.67	1039.51	4.41	0.00	14.01	-229.47
4	3	10	11	5277.88	1039.52	3.49	0.00	17.71	212.98
5	3	12	14	2721.40	1039.51	8.32	0.01	21.79	-12.06
5	3	14	16	5054.04	1039.51	5.80	0.01	28.20	7.51
5	3	16	18	8423.39	1039.51	3.90	0.00	31.64	87.58
5	3	13	15	3769.91	1039.54	6.83	0.01	24.76	-63.03
5	3	15	17	6597.34	1039.55	4.36	0.00	27.66	173.04
5	3	17	19	10555.75	1039.57	3.37	0.00	34.26	10.03
5	4	6	7	94.25	1039.53	72.12	0.07	6.54	76.96
5	4	7	8	376.99	1039.51	26.17	0.03	9.49	-88.96
5	4	8	9	942.48	1039.52	13.01	0.01	11.80	86.89
5	4	9	10	1884.96	1039.51	7.01	0.01	12.71	-215.73
5	4	10	11	3298.67	1039.53	5.35	0.01	16.98	195.75
5	4	11	12	5277.88	1039.52	3.22	0.00	16.86	52.34
6	4	13	15	2721.40	1039.47	8.44	0.01	22.10	-65.19
6	4	15	17	5054.04	1039.49	5.26	0.01	25.59	174.02
6	4	17	19	8423.39	1039.49	3.81	0.00	30.87	8.01
6	4	14	16	3769.91	1039.52	7.00	0.01	25.37	16.90
6	4	16	18	6597.34	1039.54	4.51	0.00	28.63	80.07
6	4	18	20	10555.75	1039.62	3.21	0.00	32.64	-58.86
6	5	7	8	94.25	1039.53	66.07	0.06	5.99	-89.91
6	5	8	9	376.99	1039.52	24.44	0.02	8.86	87.31
6	5	9	10	942.48	1039.51	11.25	0.01	10.20	-203.54
6	5	10	11	1884.96	1039.52	7.59	0.01	13.76	180.61
6	5	11	12	3298.67	1039.51	4.20	0.00	13.33	53.41
6	5	12	13	5277.88	1039.52	3.50	0.00	17.76	53.89
7	5	14	16	2721.40	1039.55	8.60	0.01	22.51	22.28
7	5	16	18	5054.04	1039.53	5.32	0.01	25.88	75.65
7	5	18	20	8423.39	1039.53	3.70	0.00	30.01	-55.42
7	5	15	17	3769.91	1039.57	6.24	0.01	22.64	175.37
7	5	17	19	6597.34	1039.57	4.46	0.00	28.31	5.18
7	6	8	9	94.25	1039.62	67.51	0.06	6.12	87.84
7	6	9	10	376.99	1039.56	23.05	0.02	8.36	-194.47
7	6	10	11	942.48	1039.52	13.27	0.01	12.03	169.18
7	6	11	12	1884.96	1039.52	6.67	0.01	12.10	54.25
7	6	12	13	3298.67	1039.51	5.15	0.00	16.35	55.75
7	6	13	14	5277.88	1039.52	3.35	0.00	16.99	-67.19
8	6	15	17	2721.40	1039.53	8.01	0.01	20.96	176.15
8	6	17	19	5054.04	1039.53	5.27	0.01	25.62	3.88
8	6	16	18	3769.91	1039.53	6.58	0.01	23.86	70.27

8	6	18	20	6597.34	1039.52	4.45	0.00	28.24	-51.14
8	7	9	10	94.25	1039.56	61.13	0.06	5.54	-187.17
8	7	10	11	376.99	1039.57	25.56	0.02	9.27	160.21
8	7	11	12	942.48	1039.63	10.91	0.01	9.89	55.06
8	7	12	13	1884.96	1039.56	7.49	0.01	13.57	57.41
8	7	13	14	3298.67	1039.55	4.54	0.00	14.39	-68.87
8	7	14	15	5277.88	1039.57	3.82	0.00	19.42	-3.57
9	7	16	18	2721.40	1039.54	7.86	0.01	20.57	67.05
9	7	18	20	5054.04	1039.54	5.20	0.01	25.30	-48.50
9	7	17	19	3769.91	1039.53	6.32	0.01	22.93	2.21
9	8	10	11	94.25	1039.54	69.88	0.07	6.34	153.44
9	8	11	12	376.99	1039.54	21.13	0.02	7.66	55.69
9	8	12	13	942.48	1039.54	12.38	0.01	11.22	58.73
9	8	13	14	1884.96	1039.56	6.69	0.01	12.14	-70.23
9	8	14	15	3298.67	1039.57	5.34	0.01	16.93	-3.89
9	8	15	16	5277.88	1039.67	3.17	0.00	16.12	40.40
10	8	17	19	2721.40	1039.64	7.35	0.01	19.24	1.35
10	8	18	20	3769.91	1039.62	5.85	0.01	21.21	-45.76
10	9	11	12	94.25	1039.62	50.74	0.05	4.60	56.17
10	9	12	13	376.99	1039.62	21.72	0.02	7.88	59.88
10	9	13	14	942.48	1039.62	10.10	0.01	9.16	-71.47
10	9	14	15	1884.96	1039.61	7.29	0.01	13.22	-4.10
10	9	15	16	3298.67	1039.62	4.02	0.00	12.74	43.33
10	9	16	17	5277.88	1039.63	2.97	0.00	15.07	134.50
11	9	18	20	2721.40	1039.60	7.25	0.01	18.99	-43.91
11	10	12	13	94.25	1039.65	68.09	0.07	6.17	60.68
11	10	13	14	376.99	1039.66	22.86	0.02	8.29	-72.39
11	10	14	15	942.48	1039.69	14.12	0.01	12.80	-4.23
11	10	15	16	1884.96	1039.67	7.08	0.01	12.83	46.17
11	10	16	17	3298.67	1039.65	4.79	0.00	15.19	132.17
11	10	17	18	5277.88	1039.66	3.27	0.00	16.60	-73.24
12	11	13	14	94.25	1039.62	55.71	0.05	5.05	-73.30
12	11	14	15	376.99	1039.61	25.58	0.02	9.28	-4.36
12	11	15	16	942.48	1039.60	10.85	0.01	9.84	48.12
12	11	16	17	1884.96	1039.61	6.58	0.01	11.93	130.57
12	11	17	18	3298.67	1039.60	4.11	0.00	13.04	-73.18
12	11	18	19	5277.88	1039.60	2.85	0.00	14.45	72.53
13	12	14	15	94.25	1039.67	84.74	0.08	7.68	-4.43
13	12	15	16	376.99	1039.67	26.52	0.03	9.62	50.04
13	12	16	17	942.48	1039.70	13.75	0.01	12.47	128.89
13	12	17	18	1884.96	1039.68	7.83	0.01	14.19	-73.16

13	12	18	19	3298.67	1039.67	4.87	0.00	15.45	72.01
13	12	19	20	5277.88	1039.66	3.24	0.00	16.43	-111.24
14	13	15	16	94.25	1039.55	59.12	0.06	5.36	51.89
14	13	16	17	376.99	1039.55	23.70	0.02	8.60	127.39
14	13	17	18	942.48	1039.55	11.86	0.01	10.76	-73.12
14	13	18	19	1884.96	1039.55	6.66	0.01	12.08	71.61
14	13	19	20	3298.67	1039.55	4.06	0.00	12.88	-109.77
15	14	16	17	94.25	1039.53	69.90	0.07	6.34	126.26
15	14	17	18	376.99	1039.55	26.46	0.03	9.60	-73.07
15	14	18	19	942.48	1039.55	12.79	0.01	11.59	71.31
15	14	19	20	1884.96	1039.63	7.12	0.01	12.90	-108.40
16	15	17	18	94.25	1039.53	61.03	0.06	5.53	-73.10
16	15	18	19	376.99	1039.52	21.89	0.02	7.94	71.01
16	15	19	20	942.48	1039.52	10.22	0.01	9.26	-107.56
17	16	18	19	94.25	1039.69	67.34	0.06	6.10	70.86
17	16	19	20	376.99	1039.68	22.66	0.02	8.22	-107.03
18	17	19	20	94.25	1039.73	60.76	0.06	5.51	-106.83

Vertical Electrical Sounding (VES)

Resistivity sounding is a process by which the depth investigation is made. In this, the center of configuration is kept fixed, and the measurements are made by successively increasing the electrode spacing. The apparent resistivity values obtained with increasing values of electrode separations are used to estimate the thickness and resistivities of the subsurface formations. In Schlumberger sounding arrangement, all the four electrodes are kept in a line symmetrically over a point `0; with inner (Potential) electrodes kept closer. For increasing the depth of investigation, the current electrodes, A and B are moved apart symmetrically about the center point `0' keeping the potential electrodes fixed. The separation between the Potential Electrodes is changed only when the potential between them drops to allow value during the course of sounding. The apparent resistivity for each electrode separation is calculated by multiplying the resistance `R' by Schlumberger configuration factor.

In Schlumberger arrangement, all the four electrodes are kept in a line symmetrically over a point `O' current is sent through outer electrodes are kept in a line symmetrically over a point `0'. Current is sent through outer electrodes AB and potential across MN is measured. The separation between the potential electrodes M & N is kept smaller compared to the current electrode distance AB. The geometric factor `K' for Schlumberger arrangement is given by

$$K = \pi \{(AB/2)^2 - (MN/2)^2\} / MN$$

Where,

AB is current Electrode spacing

MN is potential Electrode spacing

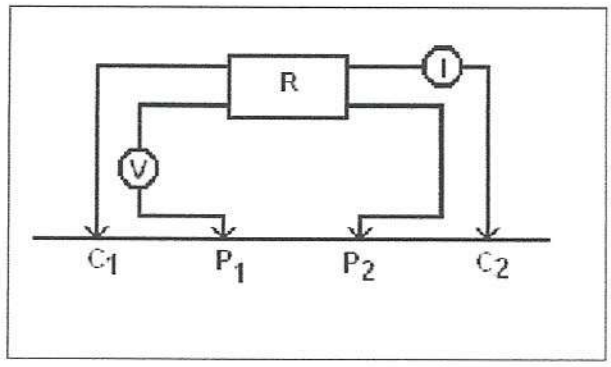


Fig. 20. Schlumberger electrode configuration

Equipment:

The equipment used in this investigation was CRM-500 resistivity meter. This digital resistivity meter has been designed for use in shallow as well as deep resistivity survey. The resistivity meter is powered by 40 V chargeable batteries. Voltage up to 220 volts can be applied and current up to 500 m amp can be sent depending on the ground conditions. The potential can be measured with resolution of up to 0.001 mV. By applying the current into the ground, the equipment provides the direct resistance for particular electrode separation.

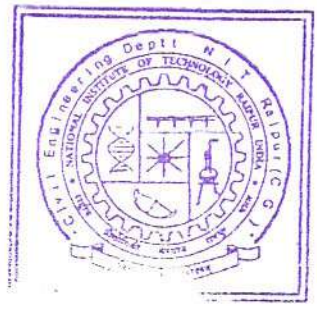




Fig.21: Resistivity meter.

Data Analysis and Interpretation

The observed resistance value from instrument was multiplied with geometric factor (K) to get the apparent resistivity values for each electrode spacing. The field apparent resistivity data were plotted on log-log paper against the half current electrode separation to get the VES curves. The apparent resistivity data for different potential dipole were brought to single common potential dipole. The smoothed/corrected apparent resistivity values for each electrode spacing are presented along with VES curves in running text. The VES curves were modeled through conventional curve matching techniques and computer software IPI2WIN. The location map of observed VESs, VES data and VES curves are presented below.

Table 14: Vertical Electrical Sounding (VES) Data

VES-1				
AB/2	App. Rest.		Factor	Remarks
2	96.90	0.00		Probable Fracture Zones in between 30-35m
3	72.90	96.90	0.75232	
4.5	59.20	169.80	0.34865	
6	52.70	229.00	0.23013	
8	49.70	281.70	0.17643	
10	50.10	331.40	0.15118	
12	51.10	381.50	0.13394	
15	54.20	432.60	0.12529	
20	59.80	486.80	0.12284	
25	64.70	546.60	0.11837	
30	71.50	611.30	0.11696	
35	79.70	682.80	0.11673	

Table 15: Vertical Electrical Sounding (VES) Data

VES-2				
AB/2	App. Rest.		Factor	Remarks
2	20.78	0.00		Probable Fracture Zones in~50m
3	21.40	20.78	1.02984	
4.5	23.86	42.18	0.56567	
6	26.60	66.04	0.40279	
8	30.55	92.64	0.32977	
10	33.73	123.19	0.27380	
12	37.23	156.92	0.23725	
15	42.34	194.15	0.21808	
20	47.93	236.49	0.20267	
25	54.20	284.42	0.19056	
30	59.83	338.62	0.17669	
35	64.12	398.45	0.16092	
40	69.39	462.57	0.15001	
45	72.91	531.96	0.13706	
50	76.60	604.87	0.12661	

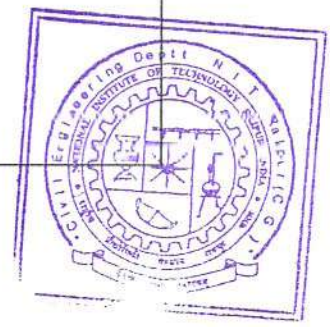


Table 16: Vertical Electrical Sounding (VES) Data

VES-3				
AB/2	App. Rest.		Factor	Remarks
2	70.60	0		Probable Fracture Zones in between 20-25m,
3	59.73	70.60	0.84606	
4.5	48.70	130.33	0.37363	
6	43.08	179.03	0.24066	
8	44.14	222.11	0.19873	
10	48.64	266.25	0.18267	
12	51.80	314.89	0.16449	
15	60.95	366.68	0.16623	
20	75.23	427.64	0.17593	
25	89.00	502.87	0.17699	
30	102.28	591.87	0.17201	
35	113.92	694.15	0.16412	
40	125.11	808.08	0.15483	

Table 17: Vertical Electrical Sounding (VES) Data

VES-4				
AB/2	App. Rest.		Factor	Remarks
2	6.07	0		Probable Fracture Zones in between 20-25m
3	6.22	6.07	1.02415	
4.5	7.34	12.29	0.59740	
6	8.45	19.63	0.43054	
8	10.03	28.08	0.35724	
10	12.31	38.11	0.32309	
12	13.83	50.42	0.27423	
15	16.52	64.24	0.25721	
20	20.65	80.77	0.25565	
25	25.97	101.42	0.25606	
30	30.38	127.39	0.23846	



Table 18: Vertical Electrical Sounding (VES) Data

VES-5				
AB/2	App. Rest.		Factor	Remarks
2	7.09	0		No Fracture Zones
3	6.81	7.09	0.96051	
4.5	7.32	13.90	0.52662	
6	8.24	21.22	0.38831	
8	9.28	29.46	0.31500	
10	10.60	38.74	0.27362	
12	12.40	49.34	0.25132	
15	14.90	61.74	0.24133	
20	19.50	76.64	0.25444	
25	23.60	96.14	0.24548	
30	26.66	119.74	0.22263	

Table 19: Vertical Electrical Sounding (VES) Data

VES-6				
AB/2	App. Rest.		Factor	Remarks
2	39.10	0		Probable Fracture Zones in between 12-15m
3	34.80	39.10	0.89003	
4.5	31.46	73.90	0.42571	
6	31.79	105.36	0.30173	
8	34.22	137.15	0.24951	
10	40.06	171.37	0.23376	
12	45.45	211.43	0.21496	
15	55.50	256.88	0.21605	
20	73.72	312.38	0.23599	
25	88.15	386.10	0.22831	
30	104.30	474.25	0.21993	



Table 20: Vertical Electrical Sounding (VES) Data

VES-7				
AB/2	App. Rest.		Factor	Remarks
2	33.35	0		No Fracture Zones
3	43.58	33.35	1.30675	
4.5	56.37	76.93	0.73279	
6	70.06	133.30	0.52560	
8	84.54	203.37	0.41568	
10	98.04	287.91	0.34054	
12	111.49	385.95	0.28886	
15	134.51	497.43	0.27041	
20	168.84	631.95	0.26717	
25	191.99	800.79	0.23975	
30	220.47	992.77	0.22208	

Discussion on Geophysical results:

Increasing demand of water for increased infrastructures in the area is resulting in decrease of groundwater resources. To explore the subsurface hydrogeological conditions beneath the area, spot electrical sounding was conducted at 11 locations in the premises of Industry. The current electrodes were spread between 30 m (AB/2) only. The VES curves obtained from the study area indicated the presence of different geoelectrical layers sequence within a maximum depth range of 50 m bgl in the premises. The occurrence of alternate `low' and `high' resistivity layers or vice versa, in the study area, indicates the presence of different geoelectrical layer sequences having varied lithological constituents. The moderate range of resistivity with respect to background resistivity may be representing the fracture/weaker zone forming the confined aquifer. The higher range of resistivity may be indicating the presence of hard and compact limestone. Due to limitation of techniques, sometimes the single geoelectrical layer may represent equivalent to more layers of similar electrical characteristics (resistivity and thickness of layers).

Knowledge of overburden thickness (weathered rock formation) is an important component for deciding the suitable location for roof top rainwater harvesting. In this regard, based on the geoelectrical parameter of VESs, it is observed that the overburden thickness in the area vary between 10 to 20 m bgl. The VES investigations could be able to

delineate different geoelectrical layers within the depth range of 50 m below ground level. In this study Some of the VES curves have indicated the presence of aquifer in the different depth ranges below ground level.

Rain Water Harvesting & Artificial Recharge

Artificial recharge systems are engineered systems where surface water is put on or in the ground for infiltration and subsequent movement to aquifers to augment groundwater resources. Other objectives of artificial recharge are to store water, to improve the quality of the water through soil-aquifer treatment or geo-purification, to use aquifers as water conveyance systems, and to make groundwater out of surface water where groundwater is traditionally preferred over surface water for drinking. Artificial recharge is expected to become increasingly necessary in the future as growing populations require more water, and as more storage of water is needed to save water in times of water surplus for use in times of water shortage.

Artificial recharge projects are site specific. The replication of the techniques from similar areas is to be based on the local hydrogeological and hydrological environs. The first step in planning the project is to demarcate the area of recharge. The scheme can be implemented systematically in case a hydrologic unit like watershed is taken for implementation. However, localized schemes are also can be taken to augment the ground water reservoir. Schemes are normally taken in the following areas.

- Areas where ground water levels are declining over a period of time.
- Areas where substantial amount of aquifer has already been desaturated.
- Areas where availability of ground water is in adequate in lean months and there is availability of surface water for recharge during rainy season.
- Areas where salinity ingress is taking place.
- Areas where there is quality problem in ground water

Roof top rain water harvesting can also be adopted to meet domestic water requirements. The roof top rain water can be stored in specifically constructed surface or sub-surface tanks. In these areas dependence on ground water has increased many folds and the natural recharge to ground water has decreased, due to urbanization, construction of buildings and paved area. In urban areas water

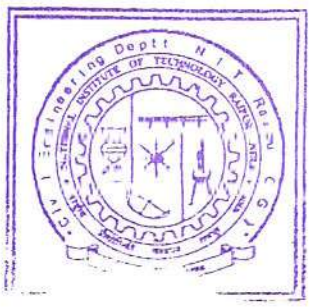
falling on roof tops can be collected and diverted to the open wells/ tubewells/ borewells by providing a filter bed.

Roof top rainwater harvesting, which involves the collection of rainwater from the roof of the buildings and its storage in surface tanks or recharge to sub-surface aquifer, can play an important role in conservation of water. Thus, the need for artificial recharge of groundwater is beyond doubt and is the most powerful management strategy available to face the challenge of fast depletion in groundwater storages.

The depth of recharge well may be as follows-

Table 21: Proposed Depth of recharge well.

S.No.	VES Number	Possible fracture zones	Proposed Depth of recharge well
1	RS1	Between 30-35m	35 m
2	RS2	~ 50m	~ 50m
3	RS3	between 20-25m,	25 m
4	RS4	between 20-25m	25 m
5	RS5	No fracture zone	None
6	RS6	between 12-15m	15 m
7	RS7	No fracture zone	None



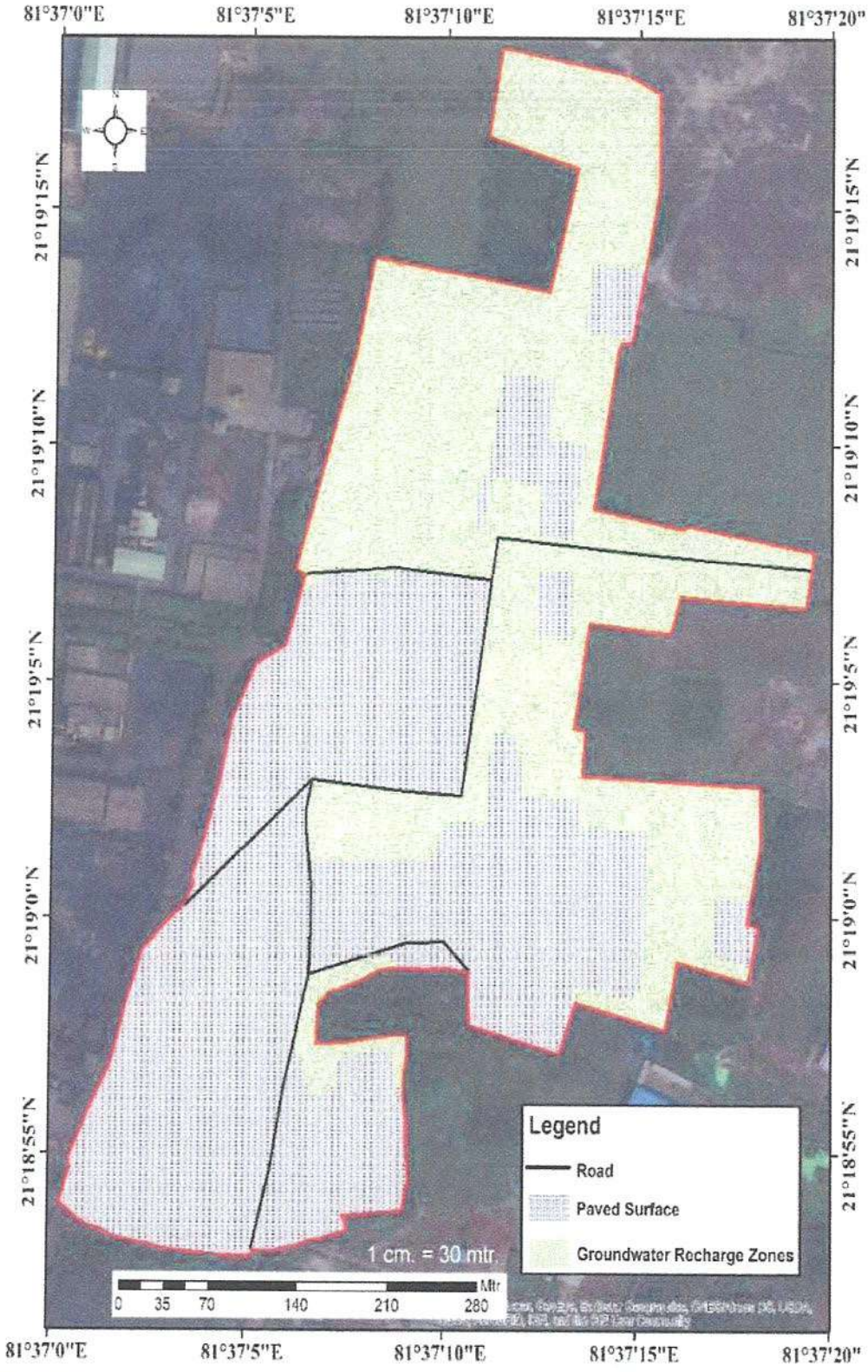
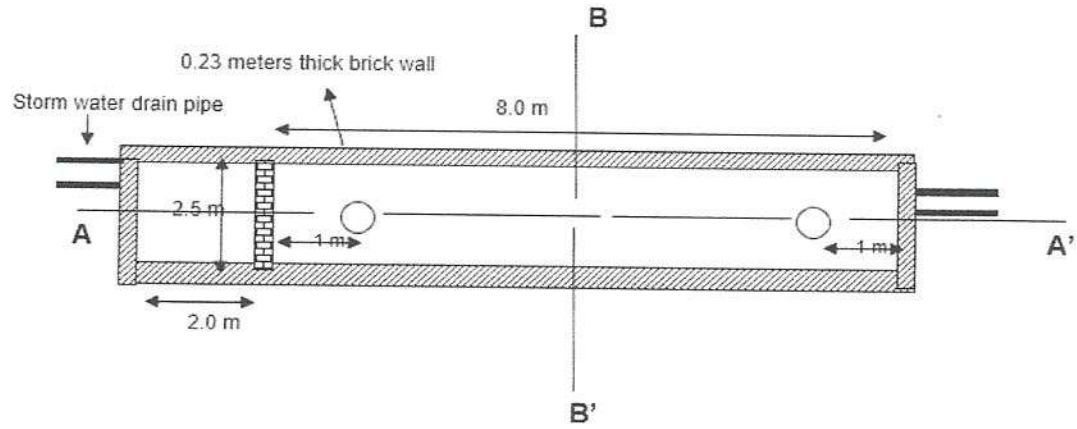


Fig.22: Groundwater Recharge Zone of Study Area

Proposed Plan for Recharge Trench Cum Twin Borewell with Desilting Chamber for the study area-

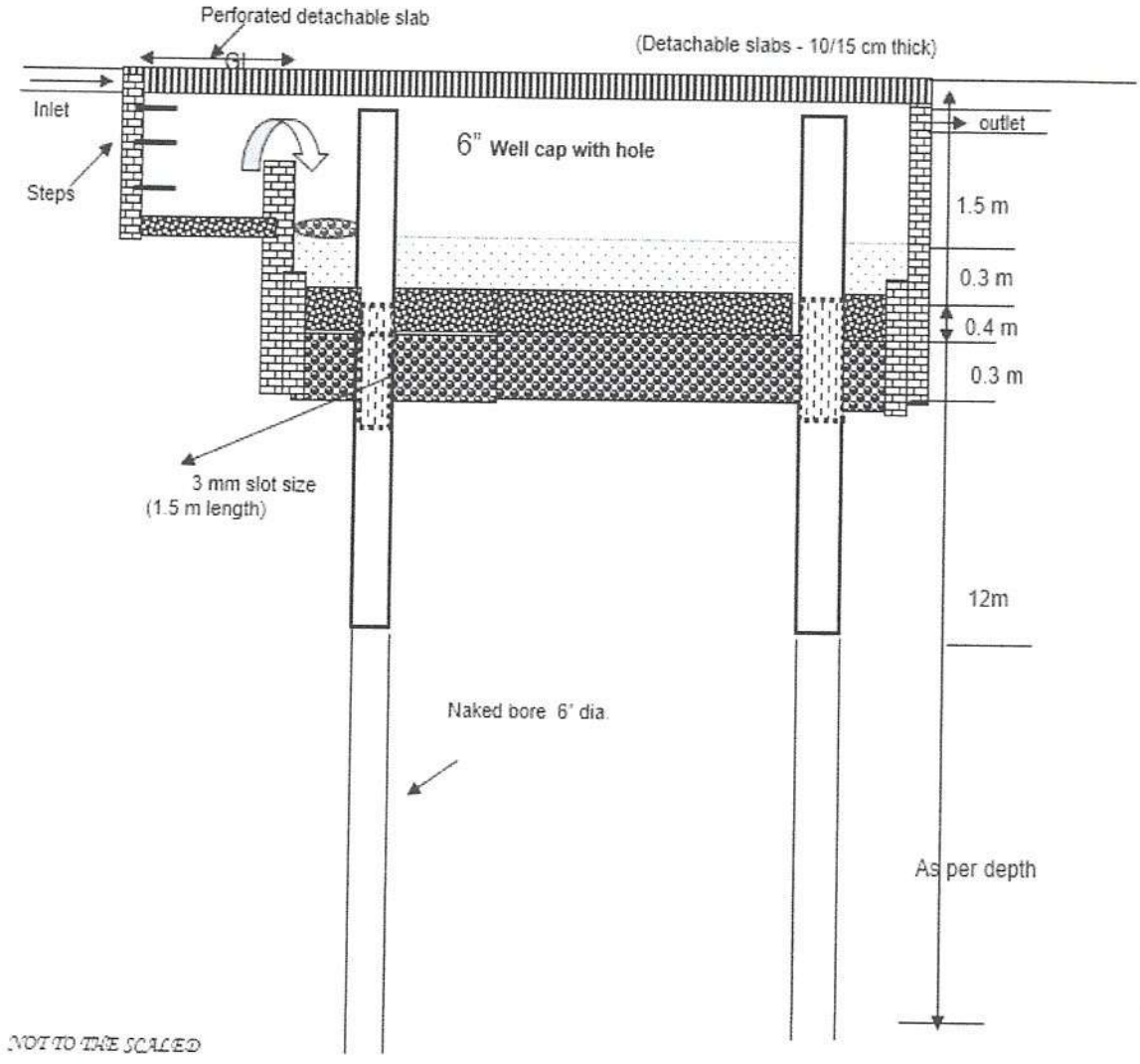
PLAN VIEW



NOT TO THE SCALED

Fig. 23 (a): Plan of proposed recharge structure (not to scale)

SECTION AA'



– Pea Gravel (3-6 mm) – Gravel (5 – 10 mm) = Boulder (5 – 15 cm)

Brick wall = Refer Brick Section.

RCC = Refer RCC Slab Design

Height of de silting wall = 1 m from top of the pea gravel

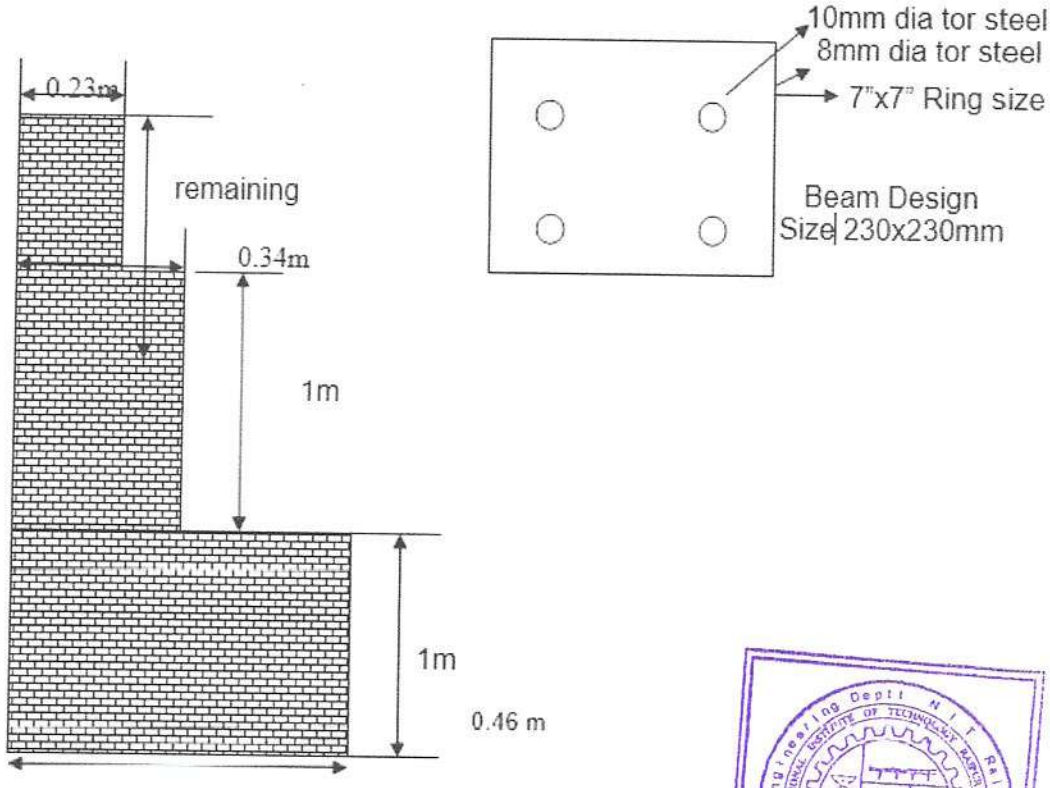
All the measurement dimensions are inner one

Fig. 23 (b): Proposed recharge structure Section A-A (not to scale)

PROPOSED RCC DESIGN & SPECIFICATION

RCC Slab Design

Main Bars: 10mm dia tor steel (cold twisted bars) placed @ 100mm c/c
Distribution Bars: 10mm dia tor steel (cold twisted bars) placed @ 100mm c/c



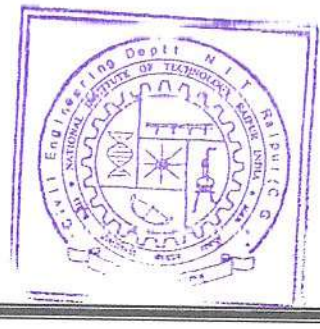
PROPOSED SECTION OF BRICK WORK

NOT TO THE SCALED

Fig. 23 (c): Proposed RCC Design & Specification (not to scale)

Points to be taken into Consideration for implementation of Artificial Recharge Structures

1. Proposed Structural drawing are shown in Fig. 23(a), (b) and (c)
2. Depth of the retaining capacity of the recharge trenches/ shafts (as per the enclosed designs) is below the existing inlet pipes. All the dimensions indicated in the designs are the inner dimension.
3. All the storm water drains/ catchment area are to be cleaned prior to monsoon. Necessary repair/maintenance needs to be carried out wherever required. Necessary diversions to be provided wherever required so as diverting the runoff to the structures.
4. Care must be taken so that no contaminated water is diverted into the recharge structures. No change in the existing flow path. Necessary peripheral drains may be constructed to divert the runoff to the recharge structures. Provision of oil/ grease separator to be made wherever necessary.
5. Before the onset of the monsoon all the catchment area considered for recharge is to be cleaned.
6. Necessary flow checks may be provided within the storm water drains for settling the silt, if required. A mesh may be provided on the mouth of the inlet to discard the debris entering into the recharge trenches. A sluice/ shutter may be provided to ensure that no water other than the rainwater is diverted to the recharge structures.
7. Depth and location of the recharge wells may vary as per the prevailing site conditions.
8. After the first rains the de-silting pit may be cleaned and subsequently on the onset of next monsoon. Sanitary and hygienic conditions in the study area are required after implementation of artificial recharge structures.
9. Necessary provision to prevent the diversion of the initial runoff to the recharge structures to avoid clogging of the recharge trench may be considered. The initial runoff having excessive silt may be diverted to the culverts and subsequently out of the study area to avoid any water logging.
10. Excess water not envisaged for recharge may be diverted to the pond.
11. Prior to monsoon season the top most layer in the pit may be scrapped and replaced with the fresh & cleaned one, if necessary.
12. On non-acceptance of water by the recharge well, the same may be cleaned using manual method / compressor development.



Step-wise approach for implementation of Artificial Recharge Structures

1. Construct the recharge wells at the pre-determined locations. Depth of the recharge wells may vary as per specific site conditions and depth is to be restricted upto the depth till the well starts giving discharge. This would ensure intake of runoff water.

2. Test all the constructed recharge wells by pouring water from tanker to ensure the intake capacity of each recharge wells. In this regard, slug test may be conducted.

3. The next step would be to go for excavation of recharge trench. If problem is encountered in respect of the specified depth, necessary modification may be made with respect to length and width of the recharge trench.

4. Subsequently PCC footing and rising of brick wall as per the proposed brick wall section may be taken up. If required, necessary weep holes may be provided.

5. In case of two double bore recharge wells in series, the de-silting chamber would be one only and necessary modification in respect of its dimension may be considered.

6. Provision for initial flush and tapping of clean rainfall runoff may be made by providing sluice and shutters in all the recharge structures.

7. Manhole is to be provided at the top of the de-silting chambers, recharge trenches and on the top of all the recharge wells in order to keep provision for maintenance.

8. The inlet and outlet pipes in all recharge structures should be placed so that the level of the bottom of inlet pipe would be the top level of the outlet pipe.



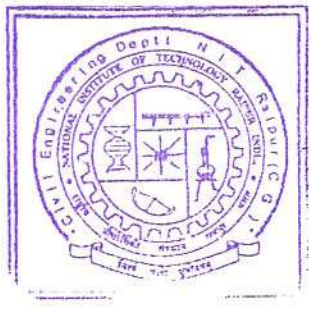
9. RECOMMENDATIONS:

During the site visit existing drainage location of drains, settling pits, type of strata in the area were observed. Surface plan & bore well details were collected. The data collected were also verified in the field to check its correctness and physical location as mentioned in layout etc. The expert team of NIT Raipur also interacted with the officials of HIRA group during the visit for understanding the future proposals of drainage system in the plant. As observed during site visit, there is proper plantation in & around the site. From the site observation, it is found that the drain provided in the plant area is inadequate and cannot sustain peak flow conditions with chances of overflow. It is also observed that the existing recharging structures are obsolete and not in working condition due to huge silt deposition. Based on the data analysis and site visit the following recommendations are made:

1. Without proper treatment, water coming as surface runoff within the industry premises must not be directly allowed for recharging the ground water.
2. A proper treatment unit as proposed in Fig. 10, is required after the sedimentation tank located near the solar plant in the industry premises to treat the surface runoff (contaminated with industrial waste) coming through the existing drainage.
3. The waste water/effluent coming from the adjacent industry must not be allowed within the plant premises. If not possible, then another treatment unit is required to treat the effluent before allowing it to drain inside the plant premises.
4. The treated water is allowed to drain through the proposed drain network towards the existing pond.
5. Regular cleaning of pond bed is required for the efficient natural ground water recharging through the pond bed.
6. The fresh water demand within the plant premises is 600 KLD (as per data provided). As per the observation, it is suggested that the treated water can also be utilized for fulfilling the fresh water demand approximately up to 40 % on yearly basis.
7. As per the hydrogeological study, probable suitable location for ground water recharge is given in **Fig. 10**. Also, the feasible zones for ground water recharge are provided in **Fig. 22** and proposed depth of recharging wells are provided in **Table 21**. It is recommended to provide the recharging structures along the proposed drainage network.
8. Before the onset of the monsoon all the catchment area considered for recharge is to be cleaned
9. The execution work may be undertaken by the specialized agencies so that the objective of rainwater harvesting / artificial recharge is implemented in true spirit and due benefits are accrued.

REFERENCES:

1. Development of a new high spatial resolution (0.25° X 0.25°) Long period (1901-2010) daily gridded rainfall data set over India and its comparison with existing data sets over the region; MAUSAM, 65, 1(January 2014), pp1-18.
2. NRCS, U., 2007. Chapter 10, part 630–hydrology. Estimation of direct runoff from storm rainfall. In 'National engineering handbook'. (Eds V Mockus, AT Hjelmfelt, HF Moody) pp. 1–79. US Department of Agriculture, Natural Resources Conservation Service: Washington, DC.
3. Subramanya, K., 2009. Flow in open channels. Tata McGraw-Hill Education.
4. Subramanya, K., 2013. Engineering Hydrology, 4e. Tata McGraw-Hill Education.
5. CGWB; 2006; Hydrogeology of Chhattisgarh-State Report (unpublished report); Central Ground Water Board, North Central Chhattisgarh Region, Raipur.
6. CGWB; 2007; Manual on Artificial Recharge of Ground Water, Govt. of India, Central Ground Water Board, Ministry of Water Resources, Govt. of India.



O/C Sent on Mail on 27/9/24

Annexure-XV

HIRA POWER & STEELS

Ref: 2109/HPSL/2024-25/2109 **Date: 27.09.2024**

To,
The Member Secretary,
Chhattisgarh Environment Conservation Board,
Paryavas Bhavan,
North Block , Sector - 19,
NAYA RAIPUR (C.G.) – 492002

C.E.C.B 03/10/2024

Sub: Submission of Environmental Statement (Form-V) for the Financial Year 2023-24.

Ref: 1. Consent of Board issued under Section 25/26 of the Water (Prevention & Control of Pollution) Act 1974 vide letter No.10518/TS/CECB/2024 Nava Raipur Atal Nagar, Dated 28 /03/ 2024

2. Consent of Board issued under Section 21 of the Air (Prevention & Control of Pollution) Act 1981 vide letter No. 10518/TS/CECB/2024 Nava Raipur Atal Nagar, Dated 28 /03/ 2024

COPY

Respected Sir,

With reference to the subject mentioned, please find enclosed herewith Environmental Statement in Form – V as prescribed under Rule 14 of the EPA Act, 1986 for the Financial Year 2023-24 of Hira Power & Steels Limited, Unit-II, Urla Industrial Complex, Raipur (C.G.)

Submitted for your kind information & record please.

Thanking You

Yours faithfully,
For, **HIRA POWER & STEELS LIMITED, UNIT–II**

H.O.C.G.E.Environment Conservation Board 3/10/24 Atal Nagar, Dist.-Raipur (C.G.)

AUTHORIZED SIGNATORY

Encl: A/a

CC to: The Regional Officer, Chhattisgarh Environment Conservation Board, New Office Building, Ring Road No. 2, Near CSEB Office, TATIBANDH, RAIPUR **(C.G.)–492099**

ENVIRONMENTAL STATEMENT

(FORM – V)

FOR THE FINANCIAL YEAR ENDING MARCH 31ST 2024 (2023-24)

HIRA POWER AND STEELS LIMITED

UNIT - II

URLA INDUSTRIAL COMPLEX

RAIPUR (C.G.) – 492 003

HIRA POWER & STEELS

Environmental Statement

(See Rule 14)

Environmental Statement for the financial year ending the 31st March 2024

Part – A

Name and address of the owner/ Occupier of the industry operation or process	Hira Power & Steels Limited, Unit – II, Urla Industrial Complex, District - Raipur (C.G.)– 492003	
Industry category Primary-(STC Code) Secondary- (STC Code)	Red	
Production Capacity- Units	1 X 3.0 MVA Submerged Arc Furnace 1 X 3.6 MVA Submerged Arc Furnace 2 X 5.5 MVA Submerged Arc Furnace 1 X 6.0 MVA Submerged Arc Furnace 12 MT/Heat CLU Converter	64,000 MTPA Ferro Alloys (including low / medium carbon ferro alloys) Or 56,000 MTPA Pig Iron
	Captive Power Plant	20 MW
Year of establishment	1 X 3.0 MVA Submerged Arc Furnace	02.02.1994
	1 X 3.6 MVA Submerged Arc Furnace	15.01.1996
	2 X 5.5 MVA Submerged Arc Furnace	19.05.2006
	1 X 6.0 MVA Submerged Arc Furnace	23.02.2010
	12 MT/Heat CLU Converter	24.09.2016
	Captive Power Plant	25.03.2006
Date of the last environmental statement submitted.	20.09.2023	

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

HIRA

HIRA POWER & STEELS

Part – B

Water and Raw Material Consumption

i. Water consumption in m^3/d

Process & Cooling	:	428.66 KLD
Domestic		84.81 KLD
Other	:	24.49 KLD

Name of the product	Process water consumption per unit of product	
	During the Previous Financial year (2022-2023)	During the current Financial Year(2023-24)
1. Ferro Alloys	Ferro Alloys (Including Low/Medium Carbon) – 2.73 KL/Tonne CPP – 0.339 KL/MWh	Ferro Alloys (Including Low/Medium Carbon)- 2.07 KL/Tonne CPP – 0.270 KL/MWh

ii. Raw material consumption

Name of the Raw Materials	Name of the Products	Consumption of raw material per unit of Output	
		During the Previous Financial year (2022-23)	During the Current financial year (2023-2024)
Ferro Alloys (including low / medium carbon ferro alloys)			
1 Manganese Ore	Ferro Alloys (including low / medium carbon ferro alloys)	2.593	2.385
2 Carbonaceous		0.728	0.670
3 Dolomite		0.016	0.046
4 Quartz		0.0004	0.0017
5 Iron Ore		0.0120	0.000
6. Mill scale		0.0093	0.0034
7 Carbon electrode paste		0.0139	0.0135
8 Ferro Silicon		0.0196	0.0170
9 Ferro Manganese		0.6689	0.5528
10. Silico Manganese		0.0987	0.0654
11 Calcined Dolomite		0.0669	0.0510
12. Calcined Lime		0.0714	0.0538
13. Fe-Mn Slag (Used in manufacturing of Si-Mn)		0.000	0.000
Pig Iron		Not Produced	Not Produced
1 Iron Ore	Pig Iron	NA	NA
2 Sinter		NA	NA
3 Coke		NA	NA
4 Limestone		NA	NA
Power Generation			
1 Coal & Dolochar	Captive power generation	1.303 MT/MW	1.010 MT/MW

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

HIRA

HIRA POWER & STEELS

*Industry may use codes if disclosing details of raw material would violate contractual obligations otherwise all industries have to name the raw materials used.

PART-C

Pollution discharged to environment/unit of output

(Parameter as specified in the consent issued)

Pollutants	Quantity of Pollutants discharged (mass/day)	Concentration of Pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with reasons
(a) Water	➢ Effluent generated from process, Softener backwash & CT Blow down water is being used for different purpose like sprinkling to control fugitive dust emission (Road, Unloading, All around stockpiles & raw materials etc.) after primary treatment. ➢ Domestic waste water is being treated through septic tank and followed by soak pit		
(b) Air	1. We have installed Bag Filters in all the furnaces to control Emission in Ferro Alloys Division. We have installed Electrostatic Precipitator in Captive Power Plant to control emission. Stack Emission Report of March 2024 is attached as **Annexure-I.**		
	2. Ambient Air Monitoring station is installed inside plant premises to have a regular check on the quality of Air as per the government norms. Ambient Air Monitoring Report is enclosed as **Annexure-II**		

PART – D

Hazardous Waste

(As specified under Hazardous waste, Management, Handling & Transboundary Movement Rules, 2008)

Authorization under Hazardous Waste (Management, Handling& Trans Boundary Movement) Rules, 2008 & as Amended Rules, 2010 has been granted (Authorization No. 340/HO/HSMD/CECB/ATAL NAGAR, RAIPUR) vide letter No 3641/HO/HSMD/CECB/2020 Dated: 21.07.2021.

	Total Quantity	
Hazardous Waste	**During the Previous Financial Year (2022-23)**	**During the Current Financial Year (2023-24)**
(a)From Process – **Used oil in Litres**	2400	3350
(b) From DM plant – **Resins in MT**	NIL	NIL

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

HIRA POWER & STEELS

Part – E
Solid Waste

Solid Waste		Total Quantity (MT)	
		During the Previous Financial year (2022-23)	During the Current financial year (2023-24)
(a)	From Process		
	i. Fe-Mn Slag	43791.839	51684.769
	ii. Fly Ash	58529.85	50408.56
	iii. Mn_3O_4	2049.564	1584.793
	iv. AOD Slag	9914.21	4613.69
(b)	From Pollution Control facilities	Bag Filter dust is recycled in the manufacturing process of Si-Mn & Fe-Mn	
	i. Bag filter dust	1483.7	2251.1
	ii. Fly Ash	58529.85	50408.56
(c)	i Qty recycled or reused within the unit.	Fe-Mn Slag is used as raw material for Si-Mn production	
	a. Bag filter dust	1335.33	0.00
	b. Mn_3O_4 Dust	2295.151	510.313
	ii. Sold		
	a. Fe-Mn Slag	44361.72	51187.55
	b. Mn_3O_4 Dust	150.00	1075
	c Fly Ash (At zero value)	58529.85	50408.56
	d AOD Slag	224.47	0.00
	iii Disposed	➢ Fly ash supplied to Bricks Manufacturers and used in environment friendly manner ➢ Si-Mn slag used as aggregate for civil work (sales) & filling of low lying area. ➢ 4613.69 MT Low Grade AOD Slag was dumped in low lying area presently which is not sellable.	
	a. Fly Ash	0.00	0.00
	b. AOD Slag	9914.21	4613.69

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

HIRA

HIRA POWER & STEELS

Part-F

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

Hazardous Waste: No hazardous waste is generated from process except used oil which is drained from machineries / equipment and resin from DM Plant which is re-used in the process.

Solid Waste:

- Fly ash supplied to Bricks Manufacturers and used in environment friendly manner.
- Bag filter dust is recycled in the manufacturing process of Si-Mn & Fe-Mn.
- Slag generated is non-hazardous in nature.
- Fe-Mn slag is used as raw material for Si-Mn production.
- Si-Mn slag is used as aggregate for civil work & filling of low lying area.

Part-G

Impact of the pollution control measures taken on conservation of natural resources and consequently on the cost of production.

1. Extensive tree plantation, development of green belt & lawns in the factory premises which control the impact of air pollution & optimize the Ambient temperature of surrounding
2. Blow down water is being used for different purpose like floor washing & sprinkling to control the fugitive dust emission (like road, unloading area, raw material yard etc.)
3. Domestic waste water is being treated through Sewage Treatment Plant.

Part-H

Additional measures/investment proposal for environmental protection including abatement of pollution.

1. For better control on fugitive emission pneumatic sweeping machine and water sprinkling on road.
2. Extensive plantation, development of green belt & lawns in plant premises
3. Adaptation of good housekeeping practices.
4. Rain water harvesting system for Surface rain water has been developed.
5. 100% internal roads are constructed by concrete.
6. More than 17000 trees have been planted in premises and around 3000 outside the factory premises
7. Online Continuous emission monitoring system have been installed in all stacks.
8. Continuous Ambient Air Quality Monitoring System has been installed inside plant premises
9. Raw material handling sections have been provided with dust suppression / dust collection system.
10. Acoustic hoods have been provided to most of the noise generating equipment & covered in closed structures, the noise transmitted outside would be still lower.
11. Plant operators working in high level noise zone have provided with ear plug / muff.

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

HIRA

HIRA POWER & STEELS

Part-I

MISCELLANEOUS:

Any other particulars in respect of environmental protection and abatement of pollution.

1 Training on EMS to all employees and contract labors to create awareness
2 Further gap filling is being done to improve the density of green belt.
3 Good housekeeping practices have been adopted.
4 Only PUC certified vehicles are allowed for transportation of Raw materials and Finished goods
5 Air, water, noise level and effluent monitoring is being done by NABL accredited lab
6 Celebration of environmental promotional activities (Environment Day).
7 Horticulture Department is taking care of tree plantation & green belt development.

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

Annexure-I

Ultimate
HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

To,	REPORT NO	UES/TR/23-24/08777
Hira Power and Steels Limited (Unit-II)	LAB REF NO	UES/23-24/ST/016915
Khasra No. 511/1, 511/2, 512/1, 512/2	DATE OF SAMPLING	15/03/2024
and Others	DATE OF RECEIPT	16/03/2024
Urla Industrial Area, Raipur (Chhattisgarh)	DATE OF REPORT	20/03/2024
	DATE OF ANALYSIS	Start.16/03/2024 End.20/03/2024

SAMPLE DETAILS

Monitoring For	Stack Emission Monitoring
Customer Ref. No. & Date	P.O. No. 7200004821/u102, dated 10/06/2023
Sampling Location	3.0 & 3.6 MVA Submerged Arc Furnace 'A &B' (Combine Stack)
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2 1985 Reaffirmed 2009, Part 3 2008 Part 7 2005 Reaffirmed 2012, IS 5182 (Part 10) 2003
Sample Quantity/Packing	Thimble 1 X 1 No., SO_2 30 ml X 1 No. PVC Bottle NO, 25 ml X 1 No PVC Bottle Rubber Bladder 1 X 1 No

TEST REPORT

Stack details

Stack Identity	3.0 & 3.6 MVA SUBMERGED ARC FURNACE 'A & B' (COMBINE STACK)
Stack Attached To	BAG FILTER
Material of Construction	MILD STEEL PLATE
Height of the stack from ground level (Meter)	30.0 MTR
Stack Diameter	1.4 MTR
Stack Shape At Top	CIRCULAR
Type of Fuel	ELECTRICITY
Total Electrical Load (KW)	3.0 MVA & 3.6 MVA

Parameter	Unit	Method Reference	Limit	Result
Flue Gas Temperature	°C	IS 11255 (Part 3) 2008	-	89.6
Flue Gas Velocity	M/s	IS 11255 (Part 3) 2008	-	10.45
Total Gas Quantity	Nm^3/h	IS 11255 (Part 3) 2008	-	47570.0
Total Particulate Matter (TPM)	mg/Nm^3	IS 11255 (Part 1) 1985	40	34.8

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- *The use of the report for publication, arbitration or as legal dispute is forbidden*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer*
- *This is for information as the party has asked for above tests only*

For ULTIMATE ENVIROLYTICAL SOLUTIONS

REVIEWED BY

AUTHORIZED SIGNATORY

End of the test report

Ultimate

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

To,	REPORT NO	UES/TR/23-24/08778	
Hira Power and Steels Limited (Unit-II)	LAB REF NO	UES/23-24/ST/016916	
Khasra No. 511/1, 511/2, 512/1, 512/2 and Others	DATE OF SAMPLING	15/03/2024	
Urla Industrial Area,	DATE OF RECEIPT	16/03/2024	
Raipur (Chhattisgarh)	DATE OF REPORT	20/03/2024	
	DATE OF ANALYSIS	Start.16/03/2024	End 20/03/2024

SAMPLE DETAILS

Monitoring For	Stack Emission Monitoring
Customer Ref. No. & Date	P.O. NO. 7200004006/U102, DATED 16/06/2022
Sampling Location	5.5 & 5.5 MVA Submerged Arc Furnace 'C&D' (Combine Stack)
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2:1985 Reaffirmed 2009; Part 3:2008, Part 7:2005 Reaffirmed 2012, IS 5182 (Part 10): 2003
Sample Quantity/Packing	Thimble 1 X 1 No., SO_2- 30 ml X 1 No. PVC Bottle, NO_x- 25 ml X 1 No. PVC Bottle Rubber Bladder 1 X 1 No.

TEST REPORT

Stack details

Stack Identity	5.5 & 5.5 MVA SUBMERGED ARC FURNACE 'C &D' (COMBINE STACK)
Stack Attached To	BAG FILTER
Material of Construction	MILD STEEL PLATE
Height of the stack from ground level (Meter)	35.0 MTR
Stack Diameter	1.4 MTR
Stack Shape At Top	CIRCULAR
Type of Fuel	ELECTRICITY
Total Electrical Load (KW)	5.5 & 5.5 MVA

Parameter	Unit	Method Reference	Limit	Result
Flue Gas Temperature	°C	IS 11255 (Part -3) 2008	-	111.5
Flue Gas Velocity	M/s	IS 11255 (Part -3) 2008		7.62
Total Gas Quantity	Nm^3/h	IS 11255 (Part 3) 2008	-	32711.7
Total Particulate Matter (TPM)	mg/Nm	IS 11255 (Part 1) 1985	40	33.6

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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- *This is for information as the party has asked for above test(s) only*

For ULTIMATE ENVIROLYTICAL SOLUTIONS

REVIEWED BY

AUTHORIZED SIGNATORY

End of the test report

Ultimate

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

To,
Hira Power and Steels Limited (Unit-II)
Khasra No. 511/1, 511/2, 512/1, 512/2 and Others
Urla Industrial Area,
Raipur (Chhattisgarh)

REPORT NO	UES/TR/23-24/08779	
LAB REF NO	UES/23-24/ST/016917	
DATE OF SAMPLING	15/03/2024	
DATE OF RECEIPT	16/03/2024	
DATE OF REPORT	20/03/2024	
DATE OF ANALYSIS	Start:16/03/2024	End 20/02/2024

SAMPLE DETAILS

Monitoring For	Stack Emission Monitoring
Customer Ref. No. & Date	P.O. NO 7200004006/U102, DATED: 16/06/2022
Sampling Location	6 MVA Submerged Arc Furnace 'E'
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2:1985 Reaffirmed 2009; Part 3:2008, Part 7:2005 Reaffirmed 2012, IS 5182 (Part 10): 2003
Sample Quantity/Packing	Thimble: 1 X 1 No., SO_2: 30 ml X 1 No. PVC Bottle, NO: 25 ml X 1 No. PVC Bottle, Rubber Bladder: 1 X 1 No.

TEST REPORT

Stack details

Stack Identity	6 MVA SUBMERGED ARC FURNACE 'E'
Stack Attached To	BAG FILTER
Material of Construction	MILD STEEL PLATE
Height of the stack from ground level (Meter)	40.0 MTR
Stack Diameter	2.0 MTR
Stack Shape At Top	CIRCULAR
Type of Fuel	ELECTRICITY
Total Electrical Load (KW)	6.0 MVA

Parameter	Unit	Method Reference	Limit	Result
Flue Gas Temperature	°C	IS 11255 (Part 3) 2008	-	134.5
Flue Gas Velocity	M/s	IS 11255 (Part 3) 2008	-	10.12
Total Gas Quantity	Nm³/h	IS 11255 (Part 3) 2008	-	83656.8
Total Particulate Matter (TPM)	mg/Nm³	IS 11255 (Part 1) 1985	40	35.0

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- *The use of the report for publication, arbitration or as legal dispute is forbidden*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer*
- *This is for information as the party has asked for above test(s) only*

For ULTIMATE ENVIROLYTICAL SOLUTIONS

REVIEWED BY

AUTHORIZED SIGNATORY

----------*End of the test report*----------

Ultimate

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Name & Address Of The Customer			
To, **Hira Power and Steels Limited (Unit-II)** **Khasra No. 511/1, 511/2, 512/1, 512/2 and Others** **Urla Industrial Area,** **Raipur (Chhattisgarh)**	REPORT NO	UES/TR/23-24/08780	
	LAB REF NO	UES/23-24/ST/016918	
	DATE OF SAMPLING	15/03/2024	
	DATE OF RECEIPT	16/03/2024	
	DATE OF REPORT	20/03/2024	
	DATE OF ANALYSIS	Start:16/03/2024	End 20/03/2024

SAMPLE DETAILS

Monitoring For	Stack Emission Monitoring
Customer Ref. No. & Date	P.O. NO. 7200004006/U102, DATED 16/06/2022
Sampling Location	CLU Converter &Thermite (Combine Stack)
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2 1985 Reaffirmed 2009, Part 3 2008 Part 7 2005 Reaffirmed 2012, IS 5182 (Part 10) 2003
Sample Quantity/Packing	Thimble 1 X 1 No., SO_2: 30 ml X 1 No. PVC Bottle. NO. 25 ml X 1 No. PVC Bottle. Rubber Bladder 1 X 1 No.

TEST REPORT

Stack details

Stack Identity	CLU CONVERTER & THERMITE (COMBINE STACK)
Stack Attached To	BAG FILTER
Material of Construction	MILD STEEL PLATE
Height of the stack from ground level (Meter)	35.0 MTR
Stack Diameter	2.295 MTR
Stack Shape At Top	CIRCULAR
Type of Fuel	ELECTRICITY
Total Electrical Load (KW)	650 KW

Parameter	Unit	Method Reference	Limit	Result
Flue Gas Temperature	°C	IS 11255 (Part 3) 2008	-	89.1
Flue Gas Velocity	M/s	IS 11255 (Part 3) 2008	-	10.71
Total Gas Quantity	Nm³/h	IS 11255 (Part 3) 2008	-	131194.2
Total Particulate Matter (TPM)	mg/Nm³	IS 11255 (Part 1) 1985	40	32.1

REMARKS : RESULTS ARE AS ABOVE

Terms & conditions

- *The use of the report for publication, arbitration or as legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer*
- *This is for information as the party has asked for above test(s) only*

For ULTIMATE ENVIROLYTICAL SOLUTIONS

REVIEWED BY

AUTHORIZED SIGNATORY

End of the test report

Ultimate

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

To,
Hira Power and Steels Limited (Unit-II)
Khasra No. 511/1, 511/2, 512/1, 512/2 and Others
Urla Industrial Area,
Raipur (Chhattisgarh)

REPORT NO	UES/TR/23-24/08781	
LAB REF NO	UES/23-24/ST/016919	
DATE OF SAMPLING	15/03/2024	
DATE OF RECEIPT	16/03/2024	
DATE OF REPORT	20/03/2024	
DATE OF ANALYSIS	Start:16/03/2024	End:20/03/2024

SAMPLE DETAILS

Monitoring For	Stack Emission Monitoring
Customer Ref. No. & Date	P.O. NO. 7200004006/U102, DATED: 16/06/2022
Sampling Location	20 MW AFBC
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2:1985 Reaffirmed 2009; Part 3 2008, Part 7 2005 Reaffirmed 2012, IS 5182 (Part 10) :2003
Sample Quantity/Packing	Thimble 1 X 1 No., SO_2: 30 ml X 1 No. PVC Bottle, NO_x: 25 ml X 1 No. PVC Bottle Rubber Bladder 1 X 1 No.,

TEST REPORT

Stack details

Stack Identity	20 MW AFBC
Stack Attached To	ESP
Material of Construction	RCC
Height of the stack from ground level (Meter)	73.0 MTR
Stack Diameter	2.83 MTR
Stack Shape At Top	CIRCULAR
Type of Fuel	COAL
Total Electrical Load (KW)	20 KW

Parameter	Unit	Method Reference	Limit	Result
Flue Gas Temperature	°C	IS 11255 (Part -3) 2008	-	150.0
Flue Gas Velocity	M/s	IS 11255 (Part -3) 2008	-	15.45
Total Gas Quantity	Nm^3/h	IS 11255 (Part -3 2008	-	246348.2
Sulphur Dioxide (SO_2)	mg/Nm^3	IS 11255 (Part 2) 1985	600	272
Oxides of Nitrogen (NOx)	mg/Nm^3	IS 11255 (Part 7) 2005	300	154
Total Particulate Matter (TPM)	mg/Nm^3	IS 11255 (Part -1) 1985	50	42.0
Carbon Monoxide (CO)	mg/Nm^3	IS 13270:2019	-	2.4
Hg	mg/Nm^3	USEPA Method No. 29	0.03	N.D.

REMARKS : RESULTS ARE AS ABOVE

Terms & conditions

- *The use of the report for publication, arbitration or as legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above testing only.*

For ULTIMATE ENVIROLEGAL SOLUTIONS

REVIEWED BY

AUTHORIZED SIGNATORY

----------End of the test report----------

Annexure-II

Ultimate
HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

To,
Hira Power and Steels Limited (Unit-II)
Khasra No. 511/1, 511/2, 512/1, 512/2 and Others
Urla Industrial Area, Raipur (Chhattisgarh)

Report No.	UES/TR/23-24/08776
Lab Ref No.	UES/23-24/AAQM/016911-016914
Date of Sampling	15/03/2024 to 16/03/2024
Date of Receipt	16/03/2024
Date of Report	20/03/2024
Date of Analysis	Start: 16/03/2024 End: 20/03/2024

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring
Sampling Location	1. Near CHP Area 2. Beside Silo 3. Solar Panel Area 4. Near Main Gate
Customer Ref. No. & Date	P.O. NO. 7200004821/U102, DATED: 10/06/2023
Duration Of Sampling	As per CPCB norms
Sample Collected By	Laboratory Chemist
Sampling Procedure	As Per Method Reference
Sample Quantity/Packing	Filter Paper (PM_{10}): 1X1 No., Filter Paper ($PM_{2.5}$): 1X1 No. SO_2: 30mlX1 No. PVC Bottle, NO_2: 30mlX1 NO. PVC Bottle.

Test Method for Ambient Air Quality Monitoring

Parameter	Method Reference
Particulate Matter size less than 10 microns (PM10)	IS 5182 (Part-23) 2006 & CPCB Guidelines Vol -I
Particulate Matter size less than 2.5 microns (PM2.5)	IS 5182 (Part-24) 2019 & CPCB Guidelines Vol -I
Sulphur Dioxide (SO2)	IS 5182 (Part-2) 2001 & CPCB Guidelines Vol -I
Nitrogen Dioxide (NO2)	IS 5182 (Part-6) 2006 & CPCB Guidelines Vol -I
Carbon Monoxide (CO)*	IS 5182 (Part-10)

TEST REPORT

Parameter	Unit	NAAQM Standard	Results			
			Near CHP Area	Beside Silo	Solar Panel Area	Near Main Gate
PM_{10}	$\mu g/m^3$	100	66.2	68.5	66.6	70.5
$PM_{2.5}$	$\mu g/m^3$	60	32.0	34.7	32.9	34.8
SO_2	$\mu g/m^3$	80	16.6	18.8	16.5	18.2
NO_2	$\mu g/m^3$	80	22.8	23.4	22.8	24.0
CO	mg/m^3	4.0	0.54	0.74	0.64	0.64

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- *The use of the report for publication, arbitration or as legal dispute is forbidden.*
- *Test Sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

For ULTIMATE ENVIROLYTICAL SOLUTIONS

REVIEWED BY

AUTHORIZED SIGNATORY

End of the test report

HIRA POWER & STEELS

क्रमांकः 2070/एचपीएसएल/2024-25/2070 दिनांक 03.08.2024

प्रति,
श्रीमान क्षेत्रीय अधिकारी,
छ.ग.पर्यावरण संरक्षण मण्डल,
न्यू ऑफिस बिल्डींग, रिंग रोड नं.2,
CSEB ऑफिस के पास,
टाटीबंध, जिलाः रायपुर (छ.ग.)-492099

विषयः वाहनों को उपयुक्त प्रकार से कव्हर किये जाने बावत् जारी स्टैण्र्ड ऑपरेटिंग प्रोसिजर (एस.ओ.पी.) के परिपालन के संबंध में।

संदर्भः आपका पत्र क्र.2692/तक/क्षेका/छ.प.सं.मं/2024 रायपुर दिनांक 31.07.2024

महोदय,

उपरोक्त विषयांतर्गत संदर्भित पत्र के माध्यम से प्राप्त निर्देश के अनुक्रम में लेख है कि आपके द्वारा प्रदत् **एस.ओ.पी.** का पालन पूर्ण रूप से किया जा रहा है। चेकलिस्ट के प्रारूप की प्रति संलग्न है।

हमारे उद्योग द्वारा पूर्व से ही कच्चे माल, ठोस अपशिष्ट, निर्मित माल का आवागमन संचालन सम्मति एवं पर्यावरणीय स्वीकृति में दी गई शर्तो का अनुपालन करके किया गया है।

सधन्यवाद

भवदीय,
वास्ते, हीरा पॉवर एण्ड स्टील्स लिमिटेड

अधिकृत हस्ताक्षरकर्ता

संलग्नक : उपरोक्तानुसार।

प्रतिलिपिः श्रीमान् सदस्य सचिव, छत्तीसगढ़ पर्यावरण संरक्षण मण्डल, पर्यावास भवन, नार्थ ब्लॉक सेक्टर–19 अटल नगर, जिला–रायपुर (छ.ग.)–492 002

HIRA POWER AND STEELS LIMITED
URLA, RAIPUR (C.G.)

FERRO ALLOYS & POWER PLANT, UNIT-II

वाहन प्रेषण हेतु छत्तीसगढ़ पर्यावरण संरक्षण मण्डल द्वारा जारी S.O.P. दिनांक 31.07.2024 के परिपालन की चेक लिस्ट

क्र.	चेकलिस्ट	वर्तमान स्थिति
1	वैध पी.यू.सी. प्रमाण पत्र उपलब्ध है।	
2	वाहन की बॉडी में छिद्र या क्रेक नही पाया गया।	
3	उच्च घनत्व पोलिएथलीन की तारपोलिन (आई.एस.7903 -2011) का उपयोग किया गया है।	
4	उपयुक्त साइज की वाटर प्रूफ सिंगल तारपोलिन द्वारा बॉडी को कवर कर बांधा गया है।	
5	परिवहन के दौरान मटेरियल के बाहर गिरने/उड़ने की संभावना न हो इसलिए वाहन को तारपोलिन कवर करने के पश्चात सील किया गया है।	
6	वाहन की बॉडी के तीनो तरफ उद्योग के नोडल अधिकारी का नाम एवं संपर्क नंबर का स्टीकर लगाया गया।	
7	प्रत्येक वाहन में परिवहन किये जा रहे मटेरियल से सम्बंधित वैद्य दस्तावेज यथा आवश्यकता अनुसार संलग्न है।	
8	वाहनों के पहियों पर लगी डस्ट को व्हील वाश सिस्टम के द्वारा साफ किया गया है।	

नोटः वाहन चालक चेकलिस्ट की एक कॉपी सिक्योरिटी गेट पर जमा करेगा और दूसरी कॉपी अपने वाहन में रखेंगे।

नोडल अधिकारी

नाम : अविरल तिवारी

मोब.नं. : 99819 21190

वाहन चालक का हस्ताक्षर

HIRA POWER AND STEELS LIMITED, URLA INDUSTRIAL AREA, RAIPUR (C.G.)

HIRA

नोडल अधिकारी

अविरल तिवारी

मोबाइल नंबर

99819 21190

HIRA POWER & STEELS LTD. * RAIPUR (C.G.)

HIRA POWER & STEELS

Ref: 2156/HPSL/U-II/2024-25/2156 Dated: 28.11.2024

To,
The Compliance Division,
Monitoring Cell,
Ministry of Environment, Forest & Climate Change,
Government of India,Indira Paryavaran Bhawan,
Aliganj, Jor Bagh Road,
NEW DELHI -110003

Sub: Submission of Half Yearly Environment Clearance Compliance Report of the conditions stipulated in Environmental clearance for the period of April 2024 to September 2024.

Ref: Environmental Clearance F.No. J-11011/836/2008/IA.II(I) Dated 11.02.2009 & 05.02.2024

Respected Sir,

With reference to above subject, we are enclosing herewith Half Yearly Environment Clearance Compliance Report of the conditions stipulated in Environmental clearance accorded by MOEF vide **vide File No. IA-J-11011/836/2008-IA-II (IND-I) Dated 11.02.2009 and 05.02.2024** for the period of April 2024 to September 2024 in respect of Hira Power and Steels Ltd. Unit-II, Urla Industrial Complex, Raipur (C.G.)

We hope you will find the above Half Yearly Environment Clearance Compliance Report up to your satisfaction. Your valuable guidance further in this regard shall be highly appreciated.

Kindly acknowledge the receipt of the same.

Thanking you,

Yours faithfully,
For, HIRA POWER AND STEELS LIMITED, UNIT- II

AUTHORIZED SIGNATORY

Encl: As Above

CC :
1. The Director, Zonal Office, Central Pollution Control Board, 4th Floor, Sahkar Bhawan, North TT Nagar, BHOPAL-462003.
2. The Deputy Director, General of Forests(C),Ministry of Environment, Forest and Climate Change, Integrated Regional office, Ground Floor, East Wing, New Secretariat Building, Civil Lines, Nagpur- 440 001 (M.S.)
3. The Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhawan, North Block, Sector-19, Atal Nagar, Raipur (CG) – 492 002.
4. The Regional Officer, Regional Office, Chhattisgarh Environment Conservation Board, New office Building, Ring Road No.2 ,Near CSEB Office, Tatibandh, Raipur(C.G.)–492009

HALF YEARLY COMPLIANCE REPORT

OF

THE CONDITIONS STIPULATED IN

ENVIRONMENTAL CLEARANCE

FOR

THE PERIOD OF

APRIL 2024- SEPTEMBER 2024

HIRA POWER & STEELS LTD.

UNIT-II

Urla Industrial Complex, Raipur (C.G.) 492003

HIRA POWER & STEELS

Project : Hira Power and Steels Limited
Urla Industrial Complex, Raipur, Chhattisgarh-492 003

Compliance report of the conditions stipulated in Environmental Clearance

Monitoring the Implementation of Environmental Safeguards
Ministry of Environment, Forest & Climate Change (MoEFCC)
Regional Office (W), Bhopal
Environmental Clearance from MoEFCC, New Delhi vide File No.
IA-J-11011/836/2008-IA-II (IND-I) Dated 11.02.2009 and Dated 05.02.2024

S. No.	Particular	Reply
1.	Project Type: River-Valley / Mining / Industry / Thermal / Nuclear / other (Specify)	Ferro Alloys Plant
2.	Name of the Project	Hira Power and Steels Limited,Unit-II
3.	Clearance Letter(s)/ OM No. & Date	**IA-J-11011/836/2008-IA-II (IND-I) Dated 11.02.2009 and Dated 05.02.2024**
4.	Location	
	a). District (s)	Raipur
	b). State (s)	Chhattisgarh
	c). Latitude / Longitude	Latitude 21°18'57.70"N Longitude 81°37'15.68"E
5.	Address for Correspondences	
	a). Address of Concerned Project Chief Engineer with Pin code & Telephone / Telex / Fax Numbers.	Mr. Umesh Patel, Hira Power and Steels Limited,Unit-II Urla Industrial complex,Raipur Chhattisgarh
	b). Address of Executive Project Engineer / Manager (with Pin code / Fax Number)	Mr. Aviral Tiwari, Hira Power and Steels Limited,Unit-II Urla Industrial complex,Raipur Chhattisgarh
6.	**a). Salient Features of the Project:**	**As follows:**

Components	Proposed Scenario
EC No.	IA-J-11011/836/2008-IA-II(IND-I)
Environmental Clearance Accorded For	Ferro Alloys Plant
Power Requirement	18.9 MW
Source of Power	Captive power plant and or State power distribution company.
Fresh Water Requirement	542 KLD
Source of Water Supply	CSIDC and Ground Water
Wastewater Generation	200 KLD
Process Emission	
Flue Gas Emission	339.30 kg/Day

Project : Hira Power and Steels Limited
Urla Industrial Complex, Raipur, Chhattisgarh-492 003

Compliance report of the conditions stipulated in Environmental Clearance

S. No.	Particular	Reply
	Fuel Type	Coal and coke
	Fuel Requirement	36000 TPA
	Man Power	523
	b). Environmental Management Plan	**As follows:**

S. No.	Activity	Status
1.	Formulation of EHS cell Constitutes EHS in charge, ETP super visor and operators, Lab chemist and assistants	We have already formulated an EHS Cell with persons from every departments
2.	**For Air Environment Management:**	
	• To monitor the ambient air quality parameters and flue gas emissions within premises and also in the nearby area regularly and to compare with the regulating standards so that any necessary corrective actions can be taken.	We have installed Continuous Ambient Air Monitoring system (CAAQMS) and also installed Continuous Emission Monitoring System (CEMS) to monitor all the parameters on real time basis as per the standards of Chhattisgarh Environment Conservation Board and Ministry of Environment, Forest and Climate change.
	• Work place monitoring to be carried out periodically to check fugitive emissions, if any.	There is very les fugitive emission generation, However Fugitive Emission is Monitored on six monthly basis .
	• To develop and maintain greenbelt, in and around the factory, for reducing the effect of air pollutants due to their deposition.	Till date we have planted trees as below:- Inside Plantation= 17253 No. (in 14.65 Acres) Outside Plantation=3165 No. (in 3.28 Acres) Total Plantation=20,418 No. We would like to inform you that we have achieved the target of more than 40% greenbelt. We are increasing the density of existing plantation inside the plant premises Greenbelt Length towards the west side is ranging from 40m to 160m (including tall trees and good canopy).Damaged plants are being replaced with new plants every year.
	• To follow proper loading and unloading practices to minimize dusting.	We are following proper loading and unloading practices as per the CECB and MoEF & CC norms.
	• To maintain proper record for the fuel consumption, start-up time and duration of boiler	We are maintaining proper record for the fuel consumption, start-up time and

Compliance report of the conditions stipulated in Environmental Clearance

S. No.	Particular		Reply
		operation towards energy conservation.	duration of boiler operation towards energy conservation.
	3.	**For Water Environment Management:**	
		• To investigate possibilities of water reuse and recycling for reducing water consumption and wastewater generation.	Waste water after treatment is being used for plantation and dust suppression purposes. Cooling Tower discharge water is being used for dust suppression purpose, inside the plant premises. Domestic waste water after treatment will be used for plantation.
		• Records of water consumption, effluent generation, effluent discharge, water characteristics, treated and untreated effluent characteristics to be maintained.	We are maintaining all the records of water consumption, effluent generation, effluent discharge, water characteristics, treated effluent characteristics.
		• To monitor the adequacy and efficiency of ETP so that the effluent is given suitable treatment and the treated effluent meets specified norms of available CTO of GPCB.	We are regularly monitoring specified standards of effluent as prescribed in CTO of CECB for effluent treated through siltation tank and reports are being submitted on monthly basis to Chhattisgarh Environment Conservation Board.
		• The effluent collection and discharge drainages, effluent handling and treatment systems to be maintained and regularly monitored to prevent leakages or sudden break-down.	Daily water requirement is 542 KLD. Waste water generated through process will be 154 KLD. This will be taken to neutralization tank where it is treated and send to siltation tank from where it is reused for dust suppression, ash conditioning etc. Water required for domestic purposes is 58 KLD. Domestic wastewater will be 46 KLD generated. Sanitary waste water will be treated in STP and treated water will be used for green belt and dust suppression purposes.
		• Proper house-keeping to be adopted to prevent spillages and contaminated surface runoff going to storm water drains.	We are following SOP for housekeeping and are maintaining Housekeeping as per the SOP. has developed a well-constructed drainage system with garland drains for collection of storm water into Settling tank.
	4.	**For Hazardous / Non-Haz. Waste Management**	
		• Proper storage and handling arrangements in compliance to the conditions of authorization	We are storing the generated Hazardous wastes in separate designated area and in concreted Platform under Covered shed

<table>
<tr><th>S. No.</th><th>Particular</th><th>Reply</th></tr>
<tr><td></td><td>granted by SPCB.</td><td>with proper drains all around the storage area.</td></tr>
<tr><td></td><td>• Proper signboards to be provided at relevant places.</td><td>We have displayed proper signboards for hazardous waste at appropriate places.</td></tr>
<tr><td></td><td>• All the necessary regulatory procedures as per the amended Hazardous Waste Management & Handling Rules – 2003 to be followed and adhered with.</td><td>We are complying to regulatory procedures as per the amended Hazardous Waste Management & Handling Rules – 2003</td></tr>
<tr><td></td><td>• The transportation of hazardous waste to the TSDF Site to be as per the guidelines and accompanied with Form-9.</td><td>Generated hazardous waste i.e Used oil will be given to CECB approved vendors / authorized recycler per the guidelines and accompanied with Form-9.</td></tr>
<tr><td></td><td>• Monthly records of generation, storage and disposal of hazardous waste should be maintained in a record register as per the format of Form-3 as per amended Hazardous Waste rules – 2003 and annual returns of disposal to be submitted to SPCB in prescribed Form – 4 and Form – 13.</td><td>We are maintaining monthly records of generation, storage and disposal of Hazardous waste and are also submitting Form 4 and Form 3 regularly.</td></tr>
<tr><td>7.</td><td>Breakup of Project Area</td><td></td></tr>
<tr><td></td><td>a) Submergence area: forest & Non-forest</td><td>
<table>
<tr><th>S. No.</th><th>Particular</th><th>Area (Ha)</th></tr>
<tr><td>1.</td><td>Buildup Area</td><td>2.955</td></tr>
<tr><td>2.</td><td>Plantation Area</td><td>5.86</td></tr>
<tr><td>3.</td><td>Road and Paved area</td><td>0.79</td></tr>
<tr><td>4.</td><td>Open Land/Parking Area</td><td>7.99</td></tr>
<tr><td></td><td>Total area</td><td>17.6</td></tr>
</table>
</td></tr>
<tr><td>8.</td><td>Financial Details:</td><td></td></tr>
<tr><td></td><td>a) Project cost as originally planned and subsequent revised estimates and the year of price reference</td><td>Total project cost is- INR 192.71 Cr Including Proposed cost for expansion was - INR 4.10 Crores.</td></tr>
</table>

Project : Hira Power and Steels Limited
Urla Industrial Complex, Raipur, Chhattisgarh-492 003

Compliance report of the conditions stipulated in Environmental Clearance

<table>
<tr><th>S. No.</th><th>Particular</th><th>Reply</th></tr>
<tr><td></td><td>b) Allocation made for environmental management plans with item wise and year wise break-up.</td><td>As follows:</td></tr>
<tr><td></td><td colspan="2">Environment Budget Allocation Sheet
<table>
<tr><th>S. No.</th><th>Particulars</th><th>Recurring Cost Per Annum (Rs. in Lacs)</th><th>Capital Cost Planned (Rs. in Lacs)</th></tr>
<tr><td>1.</td><td>Air Pollution Control</td><td>37.0</td><td>370</td></tr>
<tr><td>2.</td><td>Water Pollution Control</td><td>1.0</td><td>20</td></tr>
<tr><td>3.</td><td>Noise Pollution Control</td><td></td><td></td></tr>
<tr><td>4.</td><td>Environment Monitoring & Management</td><td>1.0</td><td>10</td></tr>
<tr><td>5.</td><td>Green Belt & Rain Water harvesting</td><td>1.5</td><td>10</td></tr>
<tr><td colspan="2">Total</td><td>40.5</td><td>410</td></tr>
</table></td></tr>
<tr><td>09.</td><td>Status of construction (Actual &/or Planned)</td><td>Completed</td></tr>
<tr><td>10.</td><td>Dates of site visits</td><td></td></tr>
<tr><td></td><td>a) The dates on which the project was monitored by the Regional Office on Previous occasions, if any</td><td>21.03.2022</td></tr>
<tr><td></td><td>b) Date of site visit for this monitoring project</td><td>19.07.2023</td></tr>
</table>

HIRA POWER & STEELS

Project : Hira Power and Steels Limited
Urla Industrial Complex, Raipur, Chhattisgarh-492 003

Compliance report of the conditions stipulated in Environmental Clearance

Half Yearly Compliance report for the period of April 2024 – September 2024

Environmental Clearance

Compliance status report of the conditions stipulated in Environmental Clearance accorded by MoEF vide letter File No. IA-J-11011/836/2008-IA-II (IND-I) Dated 11.02.2009 and Dated 05.02.2024 for Expansion of Manufacturing of Ferro Alloys from 48,000 TPA to 64,000 TPA by M/s Hira Power and Steels Limited, located at Khasra No. 156, 500, 508, 509, 510, 511/1, 511/2, 512/1, 512/2, 513/1 - 513/5 and others Urla Industrial Area, Raipur, Chhattisgarh

Specific conditions and general condition

<table>
<tr><th>A.</th><th colspan="2">Specific conditions</th><th>Status</th></tr>
<tr><td></td><td>i.</td><td>This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.</td><td>Agreed, there is no such case is pending at NGT High Courts, Supreme court or in any court of law.</td></tr>
<tr><td></td><td>ii.</td><td>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.</td><td>Agreed, we shall comply all the Environment protection measures as recommended in EIA/EMP

Sufficient budget have been allocated towards for environmental pollution control measures and risk mitigation measures relating to the project as per conditions stipulated by Ministry of Environment and Forests as well as the State Government.
<table>
<tr><th rowspan="2">Sr. No.</th><th colspan="2">Environmental Pollution Control Measures</th></tr>
<tr><th>Facility</th><th>Environment Management cost for the period of April`24 to March`24 (Lakhs)</th></tr>
<tr><td>01.</td><td>3.0 MVA, 3.6 MVA,5.5 MVA and 5.5 MVA and 6.0 MVA submerged arc furnace, 12MT/Heat CLU converter, Power Plant 20 MW And 600 MTPA Thermic Plant</td><td>3,73,82,728.88</td></tr>
</table></td></tr>
<tr><td></td><td>iii.</td><td>The project proponent shall utilize modern technologies for capturing of carbon emitted and shall also develop carbon sink/carbon sequestration resources capable of capturing</td><td>Agreed, we had submitted decarbonization report along with Final EIA. We shall adopt the next level of latest technologies which will be available in India, for our presently</td></tr>
</table>

		more than emitted. The implementation report shall be submitted to the IRO, MoEF&CC in this regard.	installed Pollution Control Equipment to improve air and water quality Implementation shall also be submitted to the IRO,MoEF & CC in this regard.Copy of decarbonization report is attached as **Annexure-I.**
	iv.	The nearest habitation to plant is Urla Village at distance of 0.84 Km. Proponent shall take appropriate environmental safeguard measures to minimize the impact on the habitation of the locals. PP needs to strengthen green belt all around the plant area to reduce the dust pollution. The PP shall also include this location in its environmental monitoring programme.	Agreed . All environmental protection measures such as ESPs, Bagfilters, covered conveyers, dust suppression systems, pucca internal roads, mechanical dust sweeper etc. is provided and operated duly and we are ensuring compliance within the norms. Water spraying will be done periodically in the Urla Village vicinity to control the dust. Net resultant GLCs after expansion is within the NAAQS. All transport vehicles possess PUC certification. We have already developed Greenbelt width towards the west side is ranging from 40m to 160m (including tall trees and good canopy) towards Urla Village. We have also included Urla Village in our Environment Monitoring Programme.
	v.	The water requirement of 542 m3 /day shall be obtained from CSIDC Ltd. (500 m3/day) and ground water (50 m3 /day) after obtaining approval from the Competent Authority.	Agreed, we have already obtained NOC from CSIDC Ltd. and from Central Ground water Authority. Copies of the same are attached as **Annexure-II.**
	vi.	Three tier Green Belt shall be developed in at least 40% of the project area in a time period of 1 year as committed all along 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 also 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 to act as green barrier for air pollution & noise levels towards Urla Village and other sensitive areas nearby project site. Compliance status in this regard, shall be submitted to concerned Regional Office of the MoEF&CC.	Agreed and being followed. Till date we have planted trees as below:- Inside Plantation= 17253 No. (in 14.65 Acres) Outside Plantation=3165 No. (in 3.28 Acres) Total Plantation=20,418 No. We would like to inform you that we have achieved the target of more than 40% greenbelt. We are increasing the density of existing plantation inside the plant premises . Greenbelt Length towards the west side is

			ranging from 40m to 160m (including tall trees and good canopy). Damaged plants are being replaced with new plants every year.
	vii.	All the commitments made towards socio-economic development of the nearby villages 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 amounting to Rs. 0.1 Crores shall be strictly implemented and progress shall be submitted to the Regional Office of MoEF&CC.	Agreed and Implemented. We have spend Approx. Rs 13,06,800.00 for development of Public Bathroom and Toilets at Village Achholi Ward No.-08,Nagar Nigam Birgaon Raipur (C.G).Photograph is enclosed as **Annex.-III.**
	viii.	As committed, PP shall undertake village adoption programme and prepare and implement the action plan to develop them into a model village.	Agreed .

B.	**General conditions**		
I.	**Statutory Compliance :**		
	i.	The Environment Clearance (EC) granted to the project/ activity is strictly under the provisions of the EIA Notification, 2006 and its amendments issued from time to time. It does not tantamount/ construe to approvals/ consent/ permissions etc., required to be obtained or standards/conditions to be followed under any other Acts/Rules/Subordinate legislations, etc., as may be applicable to the project.	Agreed, all rules acts shall be strictly followed. We have obtained Consent to operate vide letter No. 10518 /TS/CECB/2024 Nava Raipur Atal Nagar, Dated 28 /03/ 2024 for capacity expansion.

HIRA POWER & STEELS

Project : Hira Power and Steels Limited
Urla Industrial Complex, Raipur, Chhattisgarh-492 003

Compliance report of the conditions stipulated in Environmental Clearance

II. Air Quality monitoring and preservation :

i. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission as well as Continuous Ambient Air Quality Station (CAAQMS) 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.

Agreed and complied, We have installed 24x7 continuous emission Monitoring system at all the process stacks i.e in combined Stack of Furnace A and B, Combined Stack of Furnace C and D, Furnace E , Combined stack of CLU and Thermit plant and stack of Captive Power Plant and we have connected them to CPCB and CECB Server. We have also installed Continuous Ambient Air Quality Station (CAAQMS) and connected it to CECB server. Calibration of equipments is also being done timely through NABL accredited labs. Please refer to the **Annexure-IV** (Ambient air quality data) mentioned above and **Annexure-V** (Stack Monitoring data) mentioned below:-

Sr. No.	Month	Near CHP Area			
		PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)
1	April'24	75.22	38.12	20.11	26.14
2	May'24	78.56	40.34	22.55	27.16
3	June'24	76.34	31.88	16.19	20.22
4	July'24	52.87	24.28	14.24	18.38
5	Aug'24	47.16	20.86	18.31	22.44
6	Sept'24	52.68	23.65	21.44	26.14

Sr. No.	Month	Beside Silo			
		PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)
1	April'24	77.44	34.99	19.43	24.77
2	May'24	74.11	37.09	23.98	28.11
3	June'24	70.78	33.67	20.67	24.10
4	July'24	55.24	22.14	11.45	16.24
5	Aug'24	51.72	20.37	14.52	19.63
6	Sept'24	56.84	26.54	18.24	24.28

Sr. No.	Month	Solar Panel Area			
		PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)
1	April'24	70.24	40.11	17.18	26.09
2	May'24	71.56	33.11	23.48	27.11
3	June'24	68.14	30.86	18.55	22.59
4	July'24	49.68	21.86	12.57	14.76
5	Aug'24	46.54	19.67	15.37	18.31
6	Sept'24	50.66	22.44	19.28	21.48

Sr. No.	Month	Main Gate			
		PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)
1	April'24	79.02	41.98	22.76	30.65
2	May'24	81.06	42.55	24.19	33.11
3	June'24	72.45	30.47	21.30	26.49
4	July'24	56.37	25.64	14.79	19.66
5	Aug'24	52.46	22.11	19.34	23.67
6	Sept'24	56.26	25.22	24.12	28.82

Stack monitoring report is given below:-

Sr. No.	Monitoring Stack	Month	Measured Concentration (mg/Nm³)
1	AB Furnace (3.0 & 3.6 MVA Submerged Arc Furnace)	April'24	23.78
2		May'24	20.11
3		June'24	25.87
4		July'24	19.64
5		Aug'24	14.87
6		Sept'24	19.62

Sr. No.	Monitoring Stack	Month	Measured Concentration (mg/Nm³)
1	C and D Furnace (5.5 and 5.5 MVA Submerged Arc Furnace)	April'24	19.65
2		May'24	24.77
3		June'24	20.20
4		July'24	17.78
5		Aug'24	15.68
6		Sept'24	18.32

Sr. No.	Monitoring Stack	Month	Measured Concentration (mg/Nm3)
1	E Furnace (6.0 MVA Submerged Arc Furnace)	April'24	22.32
2		May'24	19.54
3		June'24	26.54

			4		July'24	19.67
			5		Aug'24	16.22
			6		Sept'24	21.35
			Sr. No.	**Monitoring Stack**	**Month**	**Measured Concentration (mg/Nm3)**
			1	CLU Converter (12 MT/Heat)	April'24	19.34
			2		May'24	21.11
			3		June'24	24.11
			4		July'24	20.38
			5		Aug'24	18.76
			6		Sept'24	22.14
			Sr. No.	**Monitoring Stack**	**Month**	**Measured Concentration (mg/Nm3)**
			1	Captive Power Plant (20 MW)	April'24	44.98
			2		May'24	41.66
			3		June'24	39.16
			4		July'24	28.67
			5		Aug'24	24.82
			6		Sept'24	30.22
	ii.	The project proponent shall carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area covering upwind and downwind directions.	Agreed and being followed. We have already installed Continuous Ambient Air Quality monitoring within and outside for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions)			
	iii.	The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through laboratories recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	Agreed, we are carrying out Fugitive emission monitoring through NABL accredited lab.			

FUGITIVE EMISSION REPORT				
Sr. No.	**Area**	**Unit**	**Parameter**	**Limit (MoEF & CC Notification)**
1	A&B Furnace	µg/m³	1232.54	2000
2	C&D	µg/m³	1365.	

<table>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td></td><td>Furnace</td><td></td><td>54</td><td>2000</td></tr>
<tr><td>3</td><td>CLU Converter</td><td>µg/m³</td><td>1528.54</td><td>2000</td></tr>
<tr><td>4</td><td>Raw Material Yard</td><td>µg/m³</td><td>1025.54</td><td>2000</td></tr>
<tr><td>5</td><td>CHP Area</td><td>µg/m³</td><td>958.54</td><td>2000</td></tr>
</table>
Fugitive emission report is attached as Annex.-VI(a)
</td></tr>
<tr><td></td><td>iv.</td><td>Sampling facility at process stacks shall be provided as per CPCB guidelines for manual monitoring of emissions.</td><td>Agreed and being complied, It is regularly done.</td></tr>
<tr><td></td><td>v.</td><td>Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.</td><td>Agreed, following measures have been adopted by us to control fugitive emissions:-
(i) We have installed Polyster Needle Felt high Density With anti Adhesive Treatment in Bag Filters of adequate capacity at all of our existing installed Submerged Arc Furnaces Viz. A, B, C,D,E and CCS units of our Ferro Alloys Divisions.
(ii) We have installed Electrostatic Precipitators for controlling emissions from the stack of our Captive Power Plant.
(iii) We have installed fogging system on all of conveyor belts and transfer points.
(iv) We have installed Mist Canon System in our CHP Area to control fugitive emission.
(v) We have covered shed of our Crusher unit to control fugitive dust emission.
(vi) All roads are being made RCC. Also cleaning of roads is done by mechanical sweeping machine. We have installed static and mobile water sprinklers to control fugitive dust emissions. Dust bins are kept for maintaining better housekeeping. Photograph is attached as Annexure-VI(b)
(vii) Truck Mounted sprinkler is also used for dust suppression.</td></tr>
</table>

	vi.	The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.	Agreed and shall be followed. We are using mechanized pneumatic system for bag cleaning. We are monitoring leakage.
	vii.	Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.	Agreed and being done. Vacuum cleaner is used for cleaning.
	viii.	Ensure covered transportation and conveying of raw material to prevent spillage and dust generation. The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.	Agreed and is being followed. We are transporting coal and other raw materials by tarpaulin covered trucks to prevent spillage and dust generation.
	ix.	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.	Agreed and is being followed. We would like to inform that iron ore fines is not generated in our facilities and other coal and coke fines which is generated are utilized in our facilities and fines collected in the Pollution control devices are stored in 01 ton gunny bag fully sealed and after briquetting it is re-used in the process.
	x.	The project proponent shall provide primary and secondary fume extraction system at all heat treatment furnaces.	Agreed and being followed. We have installed fume extraction system at all heat treatment furnaces.
	xi.	Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.	Agreed and being followed. High thick plantation is done and heighted boundary wall is constructed.
	xii.	Design the ventilation system for adequate air changes as per prevailing norms for all tunnels, motor houses, Oil Cellars.	Not applicable.
	xiii.	Pollution control system in the plant shall be provided as per the CREP Guidelines of CPCB.	Agreed and being followed.
	xiv.	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 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.	Agreed, following measures have been adopted by us to control fugitive emissions:- (i) We have installed Polyster Needle Felt high Density With anti Adhesive Treatment in Bag Filters of adequate capacity at all of our existing installed Submerged Arc Furnaces,CCS units of our Ferro Alloys Divisions. (ii) We have installed fogging system on all of conveyor belts and transfer points. (iii) We have installed Mist Canon System in our CHP Area to control fugitive emission. (iv) We have covered shed of our

<table>
<tr><td></td><td></td><td></td><td>Crusher unit to control fugitive dust emission.
(v) All roads are being made RCC. Also cleaning of roads is done by mechanical sweeping machine. We have installed static and mobile water sprinklers to control fugitive dust emissions. Dust bins are kept for maintaining better housekeeping. Photograph is attached as Annexure-VI(b).
(vi) Truck Mounted sprinkler is also used for dust suppression inside of plant premises and in the vicinity of surrounding villages.</td></tr>
<tr><td></td><td>xv.</td><td>Bag filters shall be cleaned regularly and efficiency of bag filter system shall be monitored at regular intervals.</td><td>Agreed and being followed. We are doing performance evaluation test of all the Bag Filters for efficiency monitoring. Reports are attached as Annexure-VII</td></tr>
<tr><td></td><td>xvi.</td><td>Water Sprinklers/Water mist system shall be installed near raw material yards, operational units and other strategic locations to control fugitive emissions from the plant.</td><td>Agreed and being followed. We have installed static and mobile water sprinklers near raw material yards, operational units and other locations to control fugitive dust emissions.</td></tr>
<tr><td></td><td>xvii.</td><td>The particulate matter emissions from the process stacks shall be less than 30 mg/Nm3 and measures shall be undertaken as per the submitted action plan. Efficient Air monitoring equipment shall be installed.</td><td>Agreed and being followed. Our emissions is less than 30 mg/Nm3.Continuous emission monitoring facility have been installed to the common stack of 3.0 & 3.6 MVA submerged arc furnaces, common stack of 2x5.5 MVA Submerged Arc Furnace, stack attached to 6.0 MVA submerged arc furnace and to the common stack of 12MT/Heat CLU converter including Thermit plant.
<table>
<tr><td>Particulars</td><td>3.0 MVA submerged arc furnaces,
3.6 MVA submerged arc furnaces,
2 x 5.5 MVA submerged arc furnace
6.0 MVA submerged arc furnace,
12MT/Heat CLU converter,
600 MTPA Thermic Plant</td></tr>
<tr><td>Pollution control Equipments</td><td>Offline pulse jet bag filter</td></tr>
</table>
Air pollution control equipments are</td></tr>
</table>

			designed to achieve the given norms. Emission from all stacks is well within prescribed limit.
	xviii.	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.	We are not using iron ore and regarding coal, coke,fly ash and solid waste storage area we have provided sprinklers.
		b. Proper covered vehicle shall be used while transport of materials.	We are transporting materials by Tarpaulin covered mechanical trucks.
		c. Wheel washing mechanism shall be provided in entry and exit gates with complete recirculation system.	Wheel wash system is provided by us.
	xix.	Briquetting and Jigging plant shall be installed in Ferro Alloys Plant.	We have installed Briquetting and Jigging plant in our Ferro Alloys Plant.
	xx.	The PP shall minimize the evaporation losses in jigging operation to less than 10% using suitable advanced process.	Agreed and shall be followed.
	xxi.	The 4th hole extraction system shall be provided in the Sub Merged Arc Furnaces and EAF.	In our Process for production of High Carbon Ferro Alloys we are using semi-closed hood system hence the CO gas generated and unused in the furnace are burn to CO2 above the charge level when it gets in contact with atmospheric air as such provision of fourth hole in the furnace is never operated. The fourth hole extraction system is provided in SAFs process.
	xxii.	Industry is going to use silica quartz in large quantities and going to produce Silico Manganese and Ferro Silicon alloy steel. Therefore, it is necessary to control silica/quartz exposures at production Departments, not only emission norms as per Indian Factories Act. The permissible limit for silica/quartz should be within 10 mg/m3 for total dust as per Indian Factories Act. Therefore, it is recommended to monitor personal and area exposures for silica quartz dust in the process plants.	Agreed and shall be followed. If any Ferro Silicon is produced then permissible limit of Silica/Quartz shall be maintained and also emission will be monitored. We would like to inform you that for this period we have not manufactured any Ferro Silicon.
	xxiii.	During operational phase at Captive Power Plant, Action Plan to monitor coke/coal dust exposures in different process plants using personal and area air samplers and to compare with permissible limits as per Indian Factories	Agreed and is being followed. We are monitoring coal dust exposures by appropriate air sampler as per Indian Factories Act, 1948.Air sampler report is attached as **Annexure-IV**

<table>
<tr><td></td><td></td><td>Act, 1948 shall be implemented.</td><td></td></tr>
<tr><td></td><td>xxiv.</td><td>The coal dust should be monitored at coal unloading, crushing, furnace areas and should be within 2 mg/m3, reparable dust fraction containing less than 5% quartz as per Indian Factories Act, 1948.</td><td>Agreed we are monitoring at coal handling system.</td></tr>
<tr><td></td><td>xxv.</td><td>The industry should estimate the total dust emitted from the stacks in tonnes/month and submit this to IRO MoEFCC, once in six months.</td><td>Agreed and shall be followed. Generation of dust from stacks is 9.33 Tonnes /Month.</td></tr>
<tr><td></td><td>xxvi.</td><td>The PP to install CO sensors with alarm system, at strategic locations inside the Plant.</td><td>Agreed and shall be followed.</td></tr>
<tr><td>III</td><td colspan="2">Water quality monitoring and preservation :</td><td></td></tr>
<tr><td></td><td>i.</td><td>The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.</td><td>Agreed and shall be followed.
Zero discharge is always maintained in our Plant. The treated water from siltation tank is utilized for Dust suppression, Water Sprinkling & Ash Conditioning. Wastewater Analysis Report is attached as Annexure-VIII. Zero liquid discharge (ZLD) along with PTZ Cameras are installed and connected to CECB and CPCB servers. Calibration of equipment is also being done through NABL accredited labs.

Effluent Analysis Report (April 2024)
<table>
<tr><th>S.No</th><th>Parameter</th><th>Unit</th><th>Limit</th><th>Inlet Water</th><th>Outlet Water</th></tr>
<tr><td>1</td><td>pH</td><td>-</td><td>5.5 to 9.0</td><td>8.33</td><td>8.02</td></tr>
<tr><td>2</td><td>TSS</td><td>mg/L</td><td>100</td><td>9.9</td><td>2.0</td></tr>
<tr><td>3</td><td>COD</td><td>mg/L</td><td>250</td><td>60</td><td>10</td></tr>
<tr><td>4</td><td>BOD</td><td>mg/L</td><td>30</td><td>18</td><td>3.5</td></tr>
<tr><td>5</td><td>Oil & Grease</td><td>mg/L</td><td>10</td><td>Nil</td><td>Nil</td></tr>
</table>
Effluent Analysis Report (May 2024)
<table>
<tr><th>S.No</th><th>Parameter</th><th>Unit</th><th>Limit</th><th>Inlet Water</th><th>Outlet Water</th></tr>
<tr><td>1</td><td>pH</td><td>-</td><td>5.5 to 9.0</td><td>8.12</td><td>7.89</td></tr>
</table></td></tr>
</table>

			2	TSS	mg/L	100	110.3	3.1
			3	COD	mg/L	250	257	13.0
			4	BOD	mg/L	30	40.2	2.8
			5	Oil & Grease	mg/L	10	Nil	Nil
			Effluent Analysis Report (June 2024)					
			S.No	**Parameter**	**Unit**	**Limit**	**Inlet Water**	**Outlet Water**
			1	pH	-	5.5 to 9.0	8.40	7.18
			2	TSS	mg/L	100	16.38	3.0
			3	COD	mg/L	250	75.0	12.0
			4	BOD	mg/L	30	12.0	2.0
			5	Oil & Grease	mg/L	10	Nil	Nil
			Effluent Analysis Report (July 2024)					
			S.No	**Parameter**	**Unit**	**Limit**	**Inlet Water**	**Outlet Water**
			1	pH	-	5.5 to 9.0	7.89	7.03
			2	TSS	mg/L	100	9.0	2.0
			3	COD	mg/L	250	62.0	8.0
			4	BOD	mg/L	30	10.0	1.0
			5	Oil & Grease	mg/L	10	Nil	Nil
			Effluent Analysis Report (August 2024)					
			S.No	**Parameter**	**Unit**	**Limit**	**Inlet Water**	**Outlet Water**
			1	pH	-	5.5 to 9.0	7.71	7.01
			2	TSS	mg/L	100	12.8	3.0
			3	COD	mg/L	250	69.0	14.0
			4	BOD	mg/L	30	12.0	2.0
			5	Oil & Grease	mg/L	10	Nil	Nil
			Effluent Analysis Report (September 2024)					

			S.No	**Parameter**	**Unit**	**Limit**	**Inlet Water**	**Outlet Water**
			1	pH	-	5.5 to 9.0	7.76	7.10
			2	TSS	mg/L	100	16.0	8.0
			3	COD	mg/L	250	78.24	22.46
			4	BOD	mg/L	30	14.0	4.0
			5	Oil & Grease	mg/L	10	Nil	Nil
	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.	Agreed and is being followed. Ground water report for post monsoon is attached as **Annexure-IX**					
	iii.	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. Drains and collection pits are provided in factory to collect rush of water during rains. Recharge pond is also constructed for storage of rain water.					
	iv.	Water meters shall be provided at the inlet to all unit processes in the plants.	Agreed and being followed. We have provided water meters at all the inlets of unit processes.					
	v.	The project proponent shall make efforts to minimize water consumption in the plant complex by segregation of used water, practicing cascade use and by recycling treated water.	Agreed and being followed. We are collecting waste water from various processes in settling tank and reutilizing it in zigging, ash conditioning and slag cooling.					
	vi.	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. Suitable measures shall be adopted for sewage water handling to ensure no contamination of any kind of water body.	Agreed and being followed. Effluent treatment scheme is attached as **Annex.-X** We have also installed Sewage Treatment plant for treatment of Domestic Effluent.As per our knowledge there is no contamination of water in any water body.					
	vii.	All stockyards shall have impervious flooring and shall be equipped with water spray system for dust suppression. Stock yards shall also have garland drains and catch pits to trap the run off material and shall be implemented as per the action plan submitted in EIA/EMP report.	All raw materials is being stored on impervious floors.Garland drains with settling tank are provided around storage yards to trap the run off / spillage of materials and dust suppression is controlled by installation of mist canon system and mobile and static water sprinklers in the yard.					

	viii.	Rain water harvesting shall be implemented to recharge/harvest water as per the action plan submitted in the EIA/EMP report.	Agreed and being followed. We have enhanced Rain water harvesting for rain water harvesting purposes. Photographs of Rain water harvesting pits are enclosed as **Annex.-XI.**
	ix.	Air Cooled condensers shall be used in the captive power plant.	Air cooled Condenser is provided in the Captive Power Plant.

IV.	**Noise monitoring and prevention :**		
	i.	Noise pollution shall be monitored as per the prescribed Noise Pollution (Regulation and Control) Rules, 2000 and amendments thereof, and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.	Noise monitoring reports are attached as **Annex-XII**
	ii.	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.	Agreed and is being followed. Noise Monitoring Report is attached as **Annex.-XII.**

Noise Monitoring Report- April 2024

S.No	Location	Unit	Limit		Result	
			DAY	NIGHT	DAY	NIGHT
1	Near CHP Area	Db(A)	**75**	**70**	65.2	55.3
2	Beside Silo	Db(A)			67.2	53.7
3	Solar Panel Area	Db(A)			64.9	42.6
4	Main Gate	Db(A)			59.4	48.3

Noise Monitoring Report – May 2024

S.No	Location	Unit	Limit		Result	
			DAY	NIGHT	DAY	NIGHT
1	Near CHP Area	Db(A)	**75**	**70**	62.4	55.3
2	Beside Silo	Db(A)			61.9	53.7
3	Solar Panel Area	Db(A)			67.8	42.6

			4	Main Gate	Db(A)			56.7	48.3
			Noise Monitoring Report - June 2024						
			S.No	Location	Unit	Limit		Result	
						DAY	NIGHT	DAY	**NIGHT**
			1	Near CHP Area	Db(A)	75	70	68.7	53.6
			2	Beside Silo	Db(A)			65.2	55.0
			3	Solar Panel Area	Db(A)			62.7	43.2
			4	Main Gate	Db(A)			61.8	46.1
			Noise Monitoring Report - July 2024						
			S.No	**Location**	**Unit**	**Limit**		**Result**	
						DAY	**NIGHT**	**DAY**	**NIGHT**
			1	Near CHP Area	Db(A)	**75**	**70**	64.6	50.8
			2	Beside Silo	Db(A)			61.8	51.2
			3	Solar Panel Area	Db(A)			60.6	40.7
			4	Main Gate	Db(A)			60.1	42.4
			Noise Monitoring Report – August 2024						
			S.No	**Location**	**Unit**	**Limit**		**Result**	
						DAY	**NIGHT**	**DAY**	**NIGHT**
			1	Near CHP Area	Db(A)	**75**	**70**	62.4	60.4
			2	Beside Silo	Db(A)			60.2	53.1
			3	Solar Panel Area	Db(A)			62.1	43.2
			4	Main Gate	Db(A)			63.4	45.7
			Noise Monitoring Report – September 2024						

			S.No	Location	Unit	Limit		Result	
						DAY	NIGHT	DAY	NIGHT
			1	Near CHP Area	Db(A)	75	70	66.2	63.8
			2	Beside Silo	Db(A)			63.1	57.4
			3	Solar Panel Area	Db(A)			65.8	48.3
			4	Main Gate	Db(A)			66.2	49.2
	iii.	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.						We would like to inform you that there are no extreme hot areas.Monthly Noise monitoring is carried out to ensure that workers not exposed above 90 dBA levels as per Factories Act, 1948.	

V.	**Energy Conservation Measures :**		
	i.	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.	We have provided Solar generation system of 100 KW in our plant area.
	ii.	Provide LED lights in their offices and residential areas.	LED lights are provided in offices. Also there is no residential area in plant premises.

VI.	**Waste Management :**		
	i.	Oil Collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil.	We would like to inform you that there are no oil cellars in our plant.
	ii.	Kitchen waste shall be composted or converted to biogas for further use.	We would like to inform you that very small quantity of kitchen waste is generated, hence conversion in biogas is not feasible due to small quantity. Hence it is composted.
	iii.	100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office.	We are providing all the fly ash generated to bricks manufacturers. Also Fly ash audit is conducted by National Institute of technology Uttarakhand, Copy of report along with Latest MOU is attached as **Annex.-XIII**
	iv.	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	There is no generation/use of Single use plastic in our plant area.

		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.	
	v.	A proper action plan must be implemented to dispose of the electronic waste generated in the industry.	We are following E waste (Management) Rules 2016 for disposal of E waste.
	vi.	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.	We have installed slag crusher.
		b. PP shall recycle/reuse solid waste generated in the plant as far as possible.	Recycle/reuse of solid waste is done by us in followings ways:- 1.FeMn and SiMn slag- It is used in manufacturing of Si-Mn, and presently sold to market. 2.Bag Filter Dust- Recycling/Reuse in the Manufacturing process after briquetting. 3. Mn3O4 Dust from Thermit Process- Recycling/Reuse in the Manufacturing process. 4. Fly Ash- Brick/Block/Other products manufacturing 5. Alumino thermic Slag- Being Sold in the market as it is used as synthetic slag for steel making. 6. CLU Slag- It is High MnO Slag used in manufacturing of Si-Mn, presently sold to market.
		c. Used refractories shall be recycled as far as possible.	Agreed and being followed.

Compliance report of the conditions stipulated in Environmental Clearance

VII.	**Green Belt /Decarbonization programme :**		
	i.	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration by trees.	We have submitted GHG report along with EIA Report.Report is attached as **Annex.-I.**
	ii.	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 capture, use and storage and 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.	Agreed and already submitted and will be followed as per Decarbonization report. Report is enclosed as **Annexure-I**
	iii.	The Project proponent shall prepare a road map to achieve the carbon neutrality consistent with India's commitment to achieve carbon neutrality by 2070, with periodic targets (every five years).	Carbon neutrality shall be contemplated by accounting for various measures existing and planned e.g., the generation of renewable energy/ energy efficiency activities. Further reduction of carbon emission through adopting latest available technology and implemented thereof.
	iv.	Greening and Paving shall be implemented in the plant area to arrest soil erosion and dust pollution from exposed soil surface.	Paving and Greenbelt is already developed .

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.	We have implemented Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan as per our Onsite Emergency plan submitted in office of Industrial, Health and Safety .Copy of HIRA is attached as **Annex.-XIV**
	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.	We are providing Personal Protection equipment (PPE) like gloves, apron, helmet, face shields, safety shoes etc to workmen working in high temperature work zone. Safety related Mock drills are conducted timely and also safety training is given to the workers and employees. Photographs are attached as **Annexure-XV.**

	iii.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP. Safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	There is no major construction activities during this period. Only minor repairs and maintenance work is done by already employed workers. No labour is residing in our plant premises, however we are providing drinking water, medical healthcare, healthy environment etc to our shift workers.
	iv.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained.	We are regularly doing Occupational health surveillance of workers and employees. Photographs of the Medical checkup camp along with Copy of sample report is attached as **Annex.-XVI**

IX.	**Environment Management :**		
	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. As part of Corporate Environment Responsibility (CER) activity, company shall adopt nearby villages based on the socio-economic survey and undertake community developmental activities in consultation with the village Panchayat and the District Administration as committed.	Agreed and Implemented. We have spend Approx. Rs 13,06,800.00 for development of Public Bathroom and Toilets at Village Achholi Ward No.-08,Nagar Nigam Birgaon Raipur (C.G).Photograph is enclosed as **Annex.-III.**
	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.	Agreed and being followed. We have a well laid down environmental policy duly approved by the Board of Directors. Copy of environment policy along with Board resolution is enclosed as **Annex.-XVII**
	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.	We have a separate Environmental cell reporting to the Head of the organization directly. Copy is enclosed as **Annexure-XVIII.**
	iv	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.	We have conducted Performance evaluation test of all the pollution control systems. Copy of Reports is enclosed as **Annexure-VII.**

Project : Hira Power and Steels Limited
Urla Industrial Complex, Raipur, Chhattisgarh-492 003

Compliance report of the conditions stipulated in Environmental Clearance

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 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.	Agreed and complied. We have published information regarding grant of Environment clearance in two local newspapers in Hindi and English. Copy is enclosed as **Annexure-XIX.** Information for grant of Environment clearance shall be displayed along with six monthly compliance report permanently in the website of the company.
	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.	Agreed . We have already submitted copies of Environment Clearance to Head of the Nagar Nigam, Birgaon. Copy of receipt letter is enclosed as **Annexure-XX.**
	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.	Yes we are uploading compliance report on half yearly basis**.**
	iv.	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	We are continuously monitoring the criteria Pollutant level namely PM10,SO2,NOx (Ambient levels and Stack emission) through display board at the Main Gate and also critical sectoral parameters indicated for the project has been displayed at the Main Gate and also uploaded at the website of the company.
	v.	Action plan for developing connecting and internal road in terms of MSA as per IRC guidelines shall be implemented.	Agreed and implemented. We have already constructed concrete roads with I.R.C specification.
	vi.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	We are regularly submitting the Status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
	vii.	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.	We are regularly submitting environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986. Last submitted report is enclosed as **Annex.-XXI.**

	viii.	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.	The date of financial closure is 31.03.2024 and final approval of Chhattisgarh Environment Conservation Board for Consent to Operate granted vide letter No. 10518/TS/CECB/2024 Nava Raipur Atal Nagar, Dated 28 /03/ 2024 is attached as **Annex.- XXII**.
	ix.	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.	We are abiding 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.
	x.	The recommendations of the approved Site-Specific Wildlife Management Plan (in case of involvement of Schedule-I species) shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report to the concerned Regional Office of the MoEF&CC.	Not applicable.
	xi.	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 shall be followed.
	xii.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	Agreed.
	xiii.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Accepted
	xiv.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Agreed.
	xv.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Agreed.
	xvi.	The Regional Office of this Ministry shall monitor compliance of the stipulated	Agreed we are extending full cooperation to Regional office authority and furnishing

		conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	required datas.
	xvii.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	There is no appeal against this EC at N.G.T. within 30 days.

Annual Greenhouse Gas Inventory Report 2021-22

Submitted By

Hira Power and Steels Limited,Unit-II



Prepared By

Dr. Sumant Kumar Samal
Scientist
Head, Research & Development

Hira Power and Steels Limited, Unit-II

511/1,512/2 Urla Industrial Complex, Urla, Raipur, Chhattisgarh

Synopsis:

A GHG Inventory Report refers to the volume of greenhouse gases released into the atmosphere as generated in an industry. Hira Power & Steels Limited (HPSL), a leading player in the steel segment in Central India aims to lower the impact of GHG on the environment over the long term. For the present case study, the Kyoto protocol gases are identified and considered. The report endeavors to the procedures and or methodologies for the GHG Inventory management, emission cut-off, and searching the utmost technique and subsequent implementation for achieving the projected emission reduction. The report also describes the methodology for the collection of real-time data, setting up the criteria for the quality assessment of the data being collected and or processed, and also simultaneous review for gradual improvement.

The GHG emissions are subcategorized into two types based on emission source, i.e., direct emissions (Scope-1) and indirect emissions (Scope-2).

A. ***Scope-1****:* Direct emissions originated from the sources which are possessed and/or controlled by the HPSL.

B. ***Scope-2:*** Indirect emissions are mainly due to the use of electricity procured from the other private/government grid.

Emission Inventory Summary

An overview of the carbon footprint by emission scopes of HPSL for the respective years is given in **Table 1**. The key performance indicators (KPI) implemented by HPSL refer to the emissions generated (Scope 1 and Scope 2) per MT of raw materials being processed.

Table 1 Emission Inventory Summary

Emission Breakdown:	Financial Year (2021-22)
Scope-1 (tCO_2)	**164,094.04**
Scope-2 (tCO_2)	NIL
Emissions avoided/sequestered (tCO_2)	46.72
Total Emissions (tCO_2)	**164047.32**

Table of Contents

Synopsis: 2
Emission Inventory Summary 2
List of Tables 4
List o f Figures 5
Abbreviations 6
1. Introduction 7
1.1 Background 7
1.2 Vision, sustainability Policy, Startergies and Programmes 8
1.2.1 Sustainability Policy 8
1.2.2 Sustainability Goals 8
1.2.3 Thrust areas 8
1.2.4 Sustainability at Hira Power & Steels Limited 9
1.3 Energy Scenario in the assessment year 10
1.4 Plant Structure 10
1.5 Group Accountable for GHG Inventory 11
1.6 Reporting Period and Frequency 11
1.7 Reporting Standards, Approach, and Verification 12
2. Organizational and Operational Bounduries 13
2.1 Organizational Boundury 13
2.2 Operational boundury 13
2.2.1 Scope-1: Direct Emissions 13
2.2.2 Scope-2: Indirect Emissions 13
2.3 Greenhouse Gas Selection 14
2.4 GHG Emission Exclusions 14
3. Quantification Methodology 16
3.1 GHG Calculation Methodology 16
3.2 Base Year 16
3.3 Changes to base year 16
3.4 Data used 17
3.5 Approach to emission factors 17
3.6 Asset addition and divestment 18
4. Avoided Emissions 19
4.1 GHG emission summary 19
4.2 Emission by scope 19
4.3 Breakdown of GHG emissions 19
5. Data Quality Management 21
5.1 Data management procedure 21
APPENDIX 1: ISO 14064-1:2018 Reporting Index 24

List of Tables

Table 1 Emission Inventory Summary 2

Table 2 HPSL GSG Assessment Team description 11

Table 3 Details of HPSL's Operational Unit 13

Table 4 Data used for GHG calculation 17

Table 5 GHG emissions factors 17

Table 6 Emissions by Scopes 19

Table 7 Emissions by sources 20

Table 8 Uncertainity Assessment 22

List o f Figures

Figure 1 Various aspects of commitments towards sustainability 9
Figure 2 Plant Layout of HPSL 11
Figure 3 GHG Emission Sources 14

Abbreviations

AFBC	Atmospheric Fludized Bed Combustion
CCS	CLU Converter Shop
CPP	Captive Power Plant
CSPTCL	Chhatisgarh State Power Transmission Company Limited
EF	Emission Factor
FAD	Ferroalloys Division
FY	Financial Year
GHG	Greenhouse Gas
HPSL	Hira Power and Steels Limited
IPCC	Intergovernmental Panel on Climate Change
IR	Industrial Revolution
KPI	Key Performance Indicator
MOEFCC	Ministry of Environment, Forest, and Climate Control
SAF	Submerged Arc Furnace
UOM	Unit of Measurement
WBCSD	World Business Council for Sustainable Development
WRI	World Resource Institute

1. Introduction

1.1 Background

Hira Power & Steels Limited (HPSL) is a leading player in the steel segment in Central India; a major constituent of HIRA Group of Industries, Raipur, Chhattisgarh. The company's main business interests are in Ferroalloys, Power and Mining, and it has its production units in Raipur, Chhattisgarh, India; an area known for low-cost production of Steel due to the easy availability of raw materials, cheap labour, and supportive Government policies.

The company has been fulfilling the demands of Ferroalloys viz. bulk and refined to the major public and private industries covering almost 350 major industries as key clientele across the globe. The organization was established under the flagship of Mr. **Om Agarwal** (Chief Managing Director) and is backed by professionally qualified team members under the stewardship of the Board of Directors having expertise in Engineering, finance, and administration.

Currently, the company is having total furnace capacity of 23.6 MVA, a Captive Power Plant of 20 MW (with Coal linkage), and mines located in Madhya Pradesh. HPSL has also acquired seven prospecting rights for Manganese Ore in South Africa. Three of the Seven Rights are located in close proximity to the world-famous Kalahari Manganese basin. HPSL dominates the refined ferromanganese (low and medium carbon grades) segment not only in India but also globally, which is an essential component in steel making. HPSL is the first industry to adopt a CLU Converter unit for the ferromanganese refining process in India which led to the aforementioned achievement.

Having cutting-edge technologies, ensuring operational excellence across functional areas, harnessing energy responsibility, and helping to enhance the lives of billions of people throughout the world, HPSL sees itself as a responsible public organization.

Moreover, rigorous in-house R&D activity and collaborative research are HPSL's prime focus to sustain and thrive in IR 4.0.

1.2 Vision, sustainability Policy, Startergies and Programmes

To use cutting-edge technologies and ground-breaking research to develop new-era renewable energy solutions that promote in nation's growth and development by upholding strict ethical standards for business practices and building never-ending connections with clients.

a) Quality: Strong belief and commitment to delivering.
b) Customer Satisfaction: Quality can never be compromised in any regard.
c) Integrity and ethics: Two sides of the Coin called "Business".
d) To strive towards employee growth and satisfaction
e) To take good care of the community and the environment.

1.2.1 **Sustainability Policy**

To maintain a comprehensive business, HPSL's sustainability and CSR vision is to conduct all of its operations in such a way that is effective, safe, and ethical, minimizing any detrimental effects on the environment and enhancing community livelihood quality.

1.2.2 **Sustainability Goals**

The major organizational ethics for achieving sustainability goals are as follows.

i. Incorporate environmental and social considerations into business decisions.
ii. Ensure a safe and healthy working environment.
iii. Conduct business with ethics and transparency.
iv. Adhere to responsible business practices.
v. Gain the trust of stakeholders and establish a reputation as a responsible corporate citizen.

1.2.3 **Thrust areas**

A. Efficiency and effectiveness in both operations and processes
B. The non-toxic and healthy atmospheric environment in the workplaces and nearby
C. Essential requirements for a livelihood as well as societal empowerment
   i. Providing hygienic drinking water and safeguarding water resources.
   ii. Providing and spreading awareness for healthcare and sanitation
   iii. Enhancing educational, technical, and vocational skills.

iv. Women empowerment

v. Identification and empowerment of socially and or economically backward groups.

vi. Short term training programs

D. Environmentally sustainable practices within & beyond the organization's premises

i. Clean and green energy options.

ii. Rainwater harvesting (at co.-owned premises, retail outlets).

iii. Lowering GHG emission.

iv. Reduce, reuse, recycle, and dispose of waste streams safely and ecologically.

v. Value addition to process waste

vi. Renewable energy

vii. Energy storage

1.2.4 Sustainability at Hira Power & Steels Limited

The various aspects of HPSL's commitments towards sustainability is shown in **Figure 1**.

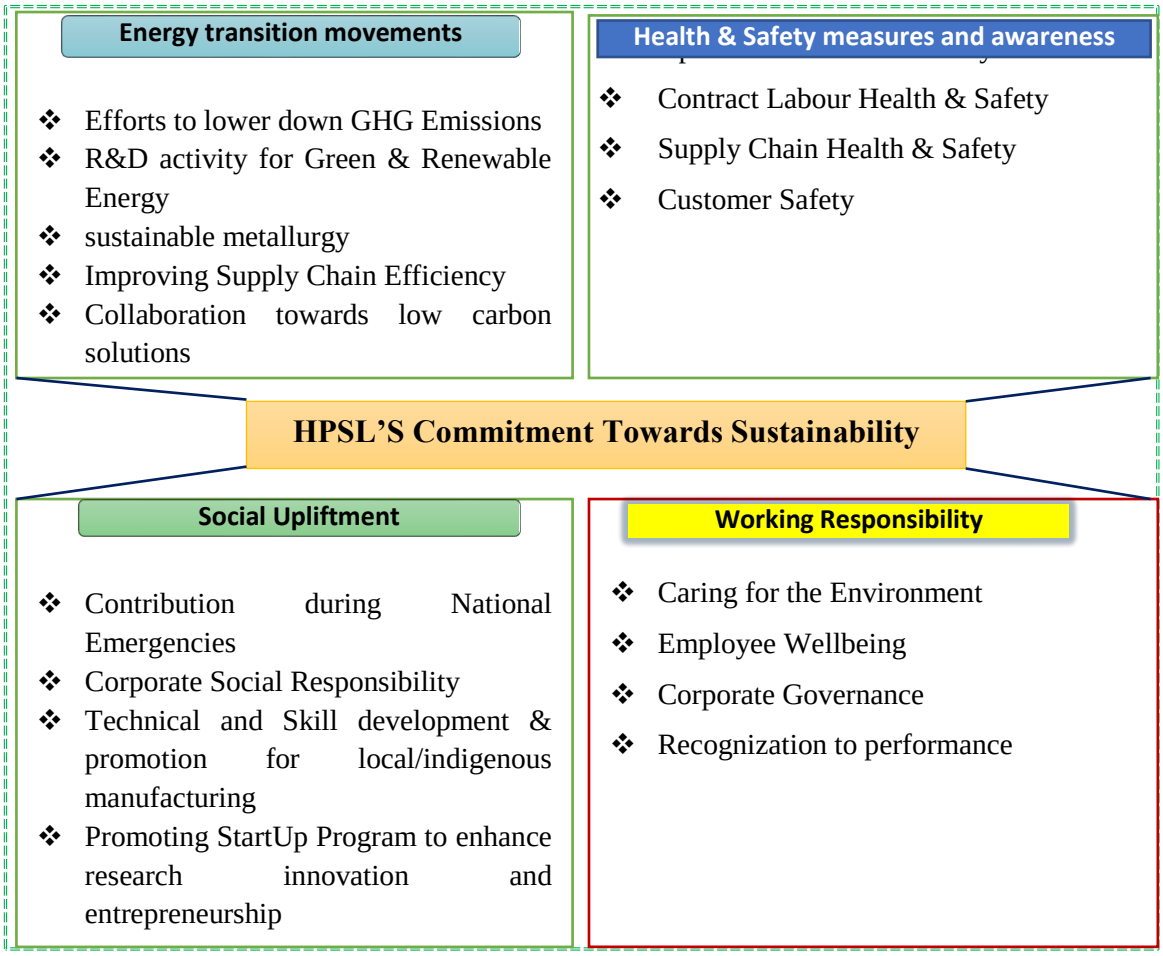


Figure 1 Various aspects of commitments towards sustainability

Dedicated to operational excellence, quality consciousness, and transparency, HPSL is a large corporation with high-caliber professionals, cutting-edge technologies, and a strong Research & Development wing. Here, the product in all of its forms is harnessed in the most responsible manner and provided to customers at the most competent values.

1.3 Energy Scenario in the assessment year

Based on generation source, energy can be classified into two different types, primary energy, and secondary energy.

I. Primary Energy:

Primary Energy source involves natural resources like coal, diesel, LPG, etc. The coal is used as a fuel in the AFBC boiler as well as a reductant and heat source in Submerged Arc Furnaces. Diesel consumption is mainly in company-owned vehicles.

HPSL is having one steam turbine-driven TG Set of 20 MW capacity and one AFBC boiler. The fuel used in the AFBC boiler is coal, coal fines, and rice husk.

II. Secondary Energy

The secondary energy source is basically electrical energy which maybe self-generated or purchased from Power Company.

From, November 2022, the electricity is being purchased from State electricity Board; the scope-2 emission related to this secondary energy is not considered for preparing the current GHG inventory report.

1.4 Plant Structure

Hira Power and Steels Limited operational plant layout is shown in **Figure 2**. There are three primary functional units in HPSL which are as followings.

i. **CPP** : Captive power plant for power generation
ii. **FAD** : Ferroalloys division for production of high carbon ferroalloys
iii. **CCS** : CLU converter shop for refining (Decarburization) of ferroalloys

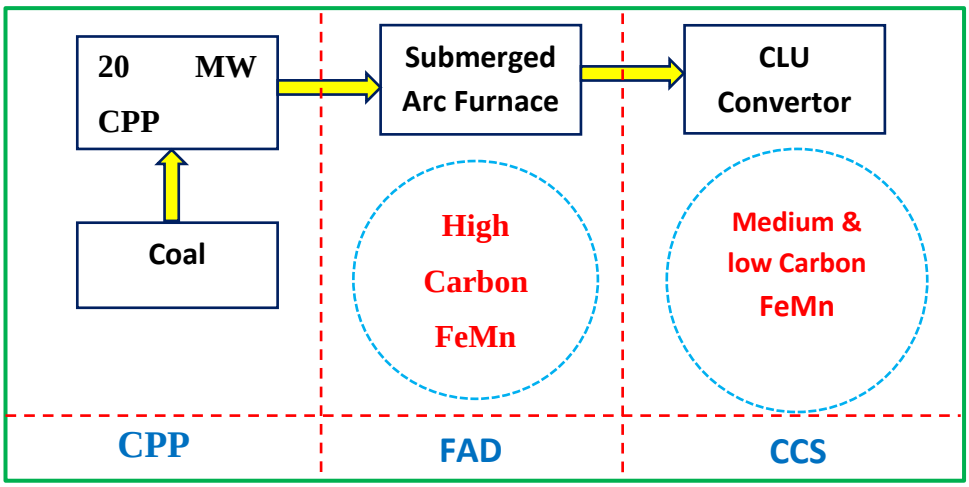


Figure 2 Plant Layout of HPSL

1.5 Group Accountable for GHG Inventory

The GHG inventory is the ultimate vision towards sustainability by the strong determination of senior management; the present study is conducted as per the mandate given by the Ministry of Environment, Forest and Climate Change (MOEFCC). The provided GHG Inventory and Report is prepared for HPSL with ample support from concerned departments across all operating and functional areas. The details of personnel involved for GHG Inventory report preparation is given in **Table 2**.

Table 2 HPSL GSG Assessment Team description

Sl. No.	Initials	Last Name	First name	Designation	Organization
1.	Er.	Tiwari	Aviral	Deputy Manager-EHS	HPSL
2.	Er.	Shukla	Amarkant	Asst. Manager-EHS	HPSL
3.	Er.	Verma	Nukesh	AGM-CPP/CCS	HPSL

1.6 Reporting Period and Frequency

The reporting period for this Carbon Footprint report is from 1st April 2021 to 31st March 2022. This GHG report covers the financial year 2021-22. The GHG report is being calculated and reported annually.

1.7 Reporting Standards, Approach, and Verification

The GHG report for the financial year 2021-22 is prepared in accordance with the following standards.

i. ISO 14064-1:2018
ii. Greenhouse Gas Protocol (Developed by WBCSD/WRI)
iii. Compendium of Greenhouse Gas Emission Methodologies for the Oil and Natural Gas Industry (Developed by API, 2009)
iv. IPCC Guidelines for National Greenhouse Gas Inventories (developed by IPCC, 2006)

For reference, a reporting index has been provided at the end of the report.

2. Organizational and Operational Bounduries

2.1 Organizational Boundury

HPSL has complete operational control over a source of emissions; HPSL has accounted for 100% of the scope- 1 emissions and excluded scope-2 emissions. Using this operational control approach, this GHG Inventory Report includes emissions from the following operational unit as indicated in **Table 3**.

Table 3 Details of HPSL's Operational Unit

Facility Name	Facility Address
Hira Power and Steels Limited	511/1,512/2 Urla Industrial Complex Urla, Raipur, Chattisgarh 492003

2.2 Operational boundury

As per GHG protocol, the Sources of emission for the operational boundaries have been categorized into Scopes 1 & 2 as followings.

2.2.1 Scope-1: Direct Emissions

These are onsite emissions; owned and controlled by HPSL which includes the following.

i. Stationary Combustion – at Process Units
ii. Stationary Combustion – at Captive Power Plant
iii. Mobile Combustion – Operational Vehicles
iv. Fire Extinguisher Refilling

2.2.2 Scope-2: Indirect Emissions

These mainly include electricity consumption as procured from external sources. Since purchased electric consumption from CSPTCL started on 11th November 2022, the emissions due to purchased electric consumption are excluded.

The current GHG Inventory is the First report compiled by Hira Power and Steels Limited; it includes the scope-1 emissions only.

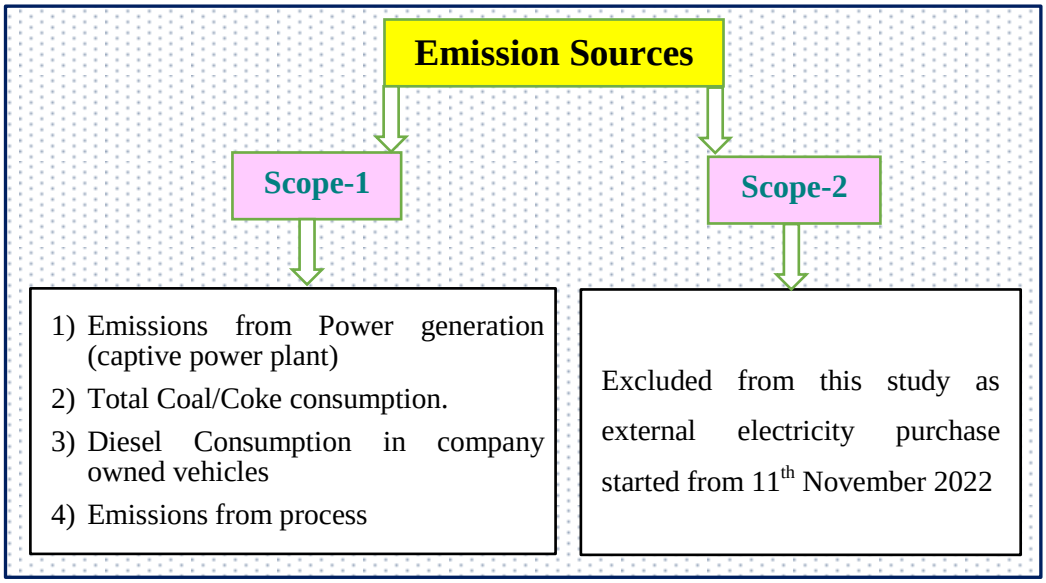


Figure 3 GHG Emission Sources

2.3 Greenhouse Gas Selection

Six greenhouse gases have been identified to be reduced significantly under the Kyoto Protocol based on their considerable estimated volume in the atmosphere as a result of anthropogenic activity. Countries that ratified the Protocol have committed to reducing the basket-of-seven greenhouse gases, which are as follows.

i. Carbon dioxide (CO_2)
ii. Methane (CH_4)
iii. Nitrous oxide (N_2O)
iv. Hydrofluorocarbons (HFCs)
v. Perfluorocarbons (PFCs)
vi. Sulphur hexafluoride (SF6)

This report accounts for GHGs considered under the Kyoto Protocol, and the following Non-Kyoto GHG: Hydrofluorocarbons (HFCs) and CFC use in refrigeration. In this document, the results are presented in tCO_2e which represents all the greenhouse gases.

2.4 GHG Emission Exclusions

The context of the inventory, and/or are not feasible or practical to calculate at the current point in time.

- Indirect emission from the product used by an organization.
- Indirect GHG emissions associated with the use of products from the organization.
- Indirect GHG emissions from transportation (HPSL-owned vehicles used in the transportation are in this study)
- Indirect GHG emissions from other sources are not considered in this first GHG study as it would have required tremendous data compilation through various departments and the overall impact of exclusions would not be more than 0.5%.
- The indirect emissions will be included in the forthcoming GHG reports.
- Emissions that do not figure highly (< 0.5%) in relation to total emissions.
- Company travel and transport of machinery by plane, train, ship, and subcontracted transport in general, since it forms part of scope 3 (excluded in this study).

3. Quantification Methodology

3.1 GHG Calculation Methodology

HPSL determines its GHG emissions using a calculation approach, multiplying the activity data compiled with the documented GHG emission factors latest available at the time of report preparation. The scope-wise categorization of each GHG emission source, data used, and emission factors are tabulated in sections 2.2, 3.4, and 3.5 respectively.

3.2 Base Year

A base year allows for like-to-like comparisons over time and allows tracking progress to a given target. The base year of HPSL for the purposes of reporting Greenhouse Gas Emissions is considered FY 2021-22.

i. The base year reasonably takes care of fluctuations in the typical yearly performance of the organization
ii. It is the first time that the HPSL is able to account for all the details intending to calculate the GHG emissions.

The base year GHG Inventory would be compared with the FY 2022-23 in order to check the redundancy of the base year GHG calculations as well as for seeking an understanding of the GHG information management process.

3.3 Changes to base year

Recalculation of the base year may apply wherever it is necessary to maintain an effective base year comparison. Reasons for this might include:

i. Significant changes related to the expansion of the project
ii. Structural changes such as mergers and divestments
iii. A significant estimation method has been changed/improved.
iv. Significant data sourcing strategy has been changed/improved.
v. Change in Scope of the inventory (for instance the purchase of a new business).

There is no change to the base year calculation in this reporting period

3.4 Data used

The data used for the preparation of this report has been monitored by HPSL recorded in the soft format/hard copies. HPSL follows stringent Data management practices, and the recorded data and performances are reported to the Ministry of Petroleum and Natural Gas, Government of India at regular intervals. Also, the monitored data is examined numerous times to maintain the accuracy. All the activity data used for GHG calculation are given below in **Table 4**.

Table 4 Data used for GHG calculation

Scope	GHG Sources	Particular/Fuel Used	Unit
Scope-1	Stationary combustion - at Furnace (SAF)	Coal/Coke, Carbonate type Manganese ore, Raw Dolomite, Carbon paste,	MT
	Stationary combustion - at Captive Power Plant	Coal	MT
	Stationary Decarburization - at CLU Converter	Decarburization	Ton
	Fire Extinguisher usage	Fire Extinguisher	Ton
	Mobile Combustion - Operational Vehicles	Diesel	Km
Scope-2	**Excluded,** since purchasing external electricity started in 11th November 2022	Electricity Consumption	MWh

3.5 Approach to emission factors

The Emission Factor (EF) values associated with the respective sources used in the GHG Inventory are indicated in **Table 5**.

Table 5 GHG emissions factors

Scope	Category	Emission Factor	Unit	Source
1	Diesel Consumption	2.69	$KgCO_2$/lit	2006 IPCC Guidelines for National Greenhouse Gas Inventories
1	CO_2 refill in Fes	0.001	tCO_2/MT	
1	Mill Scale	0.037	tCO_2/MT	World Steel Association
1	Limestone/Dolomite	0.44	tCO_2/MT	
1	Carbonate type Manganese Ore	0.22	tCO_2/MT	
1	Coal Consumption	0.92	tCO_2/MT	
1	Carbon Paste	3.12	tCO_2/MT	
1	Decarburization	Variable as per grade	tCO_2/MT	
2	Electricity consumed from State Grid	Excluded	tCO_2/MWh	Central Electricity Authority

HPSL has referred to globally accepted emission factors from international, scientific/Government bodies available at the time of inventory preparation. The HPSL attempted all possible efforts to use the best available emissions factors available at the reporting time and has cited the source of all emission factors used.

3.6 Asset addition and divestment

During the reported time, there were several units were commissioned and none of the assets/units were divested. Hira Power and Steels Limited Improvement Practices.

The motto of Hira Power and Steels Limited is "In harmony with nature"; hence committed to protecting and preserving the environment for a better future for our generations.

4. Avoided Emissions

This section sets out a quantification of the avoided Greenhouse Gas emissions in operational boundaries due to the implementation of environmental good practices on site. There are various GHG removal practices that HPSL implemented on the ground level to minimize GHG emissions. The quantified GHG removals are deducted from the electricity generation from Captive Power Plant and other scope-1 included sources.

HPSL has planted many trees on 18.65 acres (or 7.46 hectares approximately). Based on the conservative estimation, the plantation initiative by HPSL has sequestered several tones of CO2 approx. 46.72 tCO2.

4.1 GHG emission summary

The annual GHG emissions from all the sources during the FY 2021-22 were 1,64,094.04 tCO_2e from all the sources.

4.2 Emission by scope

The total emissions categorized by scopes are given in **Table 6**.

Table 6 Emissions by Scopes

Scope	Unit	2021-2022
Scope 1	tCO_2e	**1,64,094.04**
Scope 2	tCO_2e	NA
Total Emissions avoided/sequestered	tCO2e	46.72
Total Gross Emissions	tCO_2e	164047.32

4.3 Breakdown of GHG emissions

The quantitative emissions from respective emissions sources are indicated in

Table *7* under Scopes-1 and 2 categories.

Table 7 Emissions by sources

SCOPE-1:					
Category	**Quantity**	**UoM**	**Emission Factor**	**UoM**	**TCO2**
1.General					
Diesel Consumption	10,800	Lit.	2.69	$kgCO_2$/lit.	29,052
CO_2 refill in FEs	58.5	kg	0.001	tCO_2/MT	0.06
2. CPP					
Coal	189,784.61	MT	0.92	tCO_2/MT	
4. FAD (Ferroalloys Division)					
Carbonate Type Mn Ore	88,000	MT	0.22	tCO_2/MT	19,360
Total "C" Consumed	27,994	MT	3.67	tCO_2/MT	1,02,737.98
Carbon Paste	1200	MT	3.12	tCO_2/MT	3,744
Raw Dolomite	4000	MT	0.44	tCO_2/MT	1760
3. CCS (CLU Converter Shop)					
Decarburization to 0.5%C	8,000	MT	0.26	tCO_2/MT	2,080
Decarburization to 1.0%C	4,000	MT	0.24	tCO_2/MT	960
Decarburization to 1.5%C	20,000	MT	0.22	tCO_2/MT	4,400
Total Scope 1 Emissions (tCO2e)					**164,094.04**
SCOPE-2:					
Electricity consumed from State Grid	Excluded	kWh	NA	tCO_2/MWh	Nil
Total Scope 2 Emissions (tCO_2e)					**Nil**

5. Data Quality Management

5.1 Data management procedure

HPSL has developed and maintained a GHG information process that ensures conformance with the principles of ISO 14064-1 and the GHG protocol; ensures consistency with the intended use of the GHG inventory; provides a routine and consistent check to ensure completeness and accuracy; identifies and address errors and omissions; and manage and store documentations in a safe and accessible manner.

HPSL maintains a qualitative and quantitative assessment of data quality throughout the entire GHG Inventory management system. This includes activity data, data allocation, estimates and recalculations, and also the emission factors used. Data quality is evaluated on the basis of completeness, as well as on its sequential, geographical, and technological accuracy.

5.2 Emergency procedure

An emergency procedure is related to data collection issues with respect to metering failure or human error. Procedures should be applied, in line with ISO 14001 requirements to eliminate or reduce the risk of data loss/ incomplete data collection.

5.3 GHG information management procedure

1. Literature review and collection of GHG emission factors from the GHG protocol and other relevant public sources.
2. Calculation of GHG emissions by multiplying the activity data with emission factors/ global warming potentials as may be applicable; cumulative GHG emissions indicate the inclusion of scope-1 and scope-2.
3. Carbon neutrality shall be contemplated by accounting for various measures existing and planned e.g., the purchase of renewable energy/ energy efficiency activities. Further reduction of carbon emission through reducing fuel consumption shall be contemplated with all relevant HODs and implemented thereof.

4. All relevant departments are instructed to provide the consumption data on a weekly/monthly basis; subsequent data authentication will be carried out by senior management at a fixed interval for accuracy.

5.4 Assessment of uncertainity

With regard to GHG Emissions Inventory, quality refers to the general accuracy and consistency between an organization's actual emissions and quantified emissions. The difference between actual and quantified emissions results from uncertainty and error introduced by activities such as data collection, data management, calculations, and reporting. The uncertainty can be termed as followings.

i. **Low (L):** Activity data measured directly using calibrated and maintained meters as per prescribed accuracy class and hence the records maintained e.g., electricity supply. Emission factors as a result of actual monitored data or laboratory analysis.
ii. **Medium (M):** Activity data/emission factor is derived from any other/related measured data e.g., mileage, supplier bills
iii. **High (H):** Activity data/emission factor is derived from theoretical/estimated values combined with actual data e.g., thumb rules industry-standard assumptions

Table 8 indicates the uncertainty analysis and materiality input (significance only) both for the emissions factor as well as the GHG activity data.

Table 8 Uncertainity Assessment

GHG Source Stream		Uncertainty level		Materiality (Significance)
		Emission factor	Activity data	Combined
Scope-1	A) Fire Extinguisher	L	L	No
	B) HPSL controlled Process Emissions	L	L	No
Scope-2	Electricity consumption from INDIAN grid	NA	NA	NA

Efforts will be made by HPSL in future inventories in order to keep a low uncertainty level for emissions factors and GHG activity data. Considering the above, the overall uncertainty in the GHG estimation of the present study is not likely to be more than ±5% and may hence be considered free from material misstatements.

5.5 Review and Improvement

Primary data has been sought for all significant emissions sources. Where data is unavailable or not comparable, conservative estimation methods have been applied such that incentives lie in continually improving the ratio of primary data to estimation approaches.

In future years, we intend is to use this section to highlight improvements in our framework and process for capturing and calculating emissions figures and reducing uncertainty.

5.6 GHG emissions reduction stargergy

Keeping the nation's carbon neutrality movement in sight, the following programs are being reviewed and studied thoroughly and will be implanted suitably.

i. Emphasis on the use of electricity generated from renewable energy sources.
ii. Replacement of petroleum fuels by bio-products.
iii. Hydrogen generation, storage, and its use in iron and steel making process.
iv. Carbon capture technology

5.7 Disclaimer

This report was prepared based on informations obtained from HPSL and observations made during the interview, to the best of HPSL's knowledge and belief, bearing in mind the agreed assessment objectives and defined scope of work.

As the assessment process is restricted by scope, time, and schedule, it is not meant to be comprehensive and all-inclusive.

The scope of work included in the execution of this assessment may not be appropriate to satisfy the needs of other users. Any use or re-use of this document is at the sole risk of said user.

APPENDIX 1: ISO 14064-1:2018 Reporting Index

This report complies with the ISO 14064-1 2018 standard, the various section of the report rationalizes the standard either as a statement or in sections. The exclusion is mentioned over section 2.4.

ISO REPORTING	SECTION IN THIS REPORT
Chapter 1 5.1.A	**Chapter 2** 2.1 Organizational Boundry
Chapter 3 5.2.1	**Chapter 4** 2.2Operational Boundry
Chapter 5 5.2.2	**Chapter 6** 2.2Operational Boundry
Chapter 7 5.2.3	**Chapter 8** 2.2 Operational Boundry
Chapter 9 5.2.4.A	**Chapter 10** 2.2 Operational Boundry
Chapter 11 5.2.4.B	**Chapter 12** 2.2Operational Boundry
Chapter 13 5.2.4.C[1]	**Chapter 14** 2.2Operational Boundry
Chapter 15 6.1	**Chapter 16** 2.2Operational Boundry
Chapter 17 6.2.1	**Chapter 18** 3.4 data Used
Chapter 19 6.2.2	**Chapter 20** 3.4 data Used
Chapter 21 6.2.3	**Chapter 22** 3.1 GHG Calculation Methodology
Chapter 23 6.3	**Chapter 24** 3.1 GHG Calculation Methodology
Chapter 25 6.4.1	**Chapter 26** 3.2 Base Year
Chapter 27 6.4.2	**Chapter 28** 3.3 Changes to Base year
Chapter 29 8.1	**Chapter 30** 5.1 Data management procedure
Chapter 31	**Chapter 32**

[1] Partially included, excluded are mentioned over the section 2.4.

Annexure-II

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
केन्द्रीय भूमि जल प्राधिकरण
Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)
NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Project Name:	M/s Hira Power And Steels Limited Unit Ii		
Project Address:	Urla Industrial Area		
Town:	Birgaon (m)	Block:	Dharsiwa
District:	Raipur	State:	Chhattisgarh
Pin Code:			
Communication Address:	Hira Power And Steels Ltd. Unit Ii, Urla Industrial Area, K.h. No. 511/1, 512/2, Dharsiwa, Raipur, Chhattisgarh - 492003		
Address of CGWB Regional Office :	Central Ground Water Board North Central Chhattisgarh, 2nd Floor, Lk Corporate And Logistic Park, Dhamtari Road, Nh-30, Dumartarai, Raipur, Chhattisgarh - 492015		

1.	**NOC No.:**	CGWA/NOC/IND/REN/1/2024/9854	2.	**Date of Issuence**	13/08/2024
3.	Application No.:	21-4/1506/CT/IND/2018	4.	Category: (GWRE 2023)	Critical
5.	Project Status:	Existing Ground Water	6.	NOC Type:	Renewal
7.	**Valid from:**	10/06/2024	8.	**Valid up to:**	09/06/2027

9. Ground Water Abstraction Permitted:

Fresh Water		Saline Water		Dewatering		Total	
m³/day	m³/year	m³/day	m³/year	m³/day	m³/year	m³/day	m³/year
100.00	31820.00						

10. Details of ground water abstraction /Dewatering structures

	Total Existing No.:4						**Total Proposed No.:0**					
	DW	DCB	BW	TW	MP	MPu	DW	DCB	BW	TW	MP	MPu
Abstraction Structure*	0	0	4	0	0	0	0	0	0	0	0	0

*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit;MPu-Mine Pumps

11.	Ground Water Abstraction/Restoration Charges paid (Rs.):	230880.00
12.	Environment Compensation (if applicable) paid (Rs.):	0.00

13.	Number of Piezometers(Observation wells) to be constructed/ monitored & Monitoring mechanism.	No. of Piezometers	Monitoring Mechanism		
			Manual	DWLR**	DWLR With Telemetry
	**DWLR - Digital Water Level Recorder	1	0	1	0

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011
Phone: (011) 23383561 Fax: 23382051, 23386743
Website: cgwa-noc.gov.in

पानी बचाये – जीवन बचाये
SAVE WATER - SAVE LIFE

(Compliance Conditions given overleaf)

This is an auto generated document & need not to be signed.

CENTRAL GROUND WATER AUTHORITY

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011
Phone: (011) 23383561 Fax: 23382051, 23386743
Website: cgwa-noc.gov.in

Validity of this NOC shall be subject to compliance of the following conditions:

Mandatory conditions:

1) Installation of tamper proof digital water flow meter with telemetry on all the abstraction structure(s) shall be mandatory for all users seeking No Objection Certificate and intimation regarding their installation shall be communicated to the CGWA within 30 days of grant of No Objection Certificate.

2) Proponents shall mandatorily get water flow meter calibrated from an authorized agency once in a year.

3) Construction of purpose-built observation wells (piezometers) for ground water level monitoring shall be mandatory as per Section 14 of Guidelines. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in Annexure-II of the guidelines.

4) Proponents shall monitor quality of ground water from the abstraction structure(s) once in a year. Water samples from bore wells/ tube wells / dug wells shall be collected during April/May every year and analysed in NABL accredited laboratories for basic parameters (cations and anions), heavy metals, pesticides/ organic compounds etc. Water quality data shall be made available to CGWA through the web portal.

5) In case of mining projects, additional key wells shall be established in consultation with the Regional Director, CGWB for ground water level monitoring four (4) times a year (January, May, August and November) in core as well as buffer zones of the mine.

6) In case of mining project the firm shall submit water quality report of mine discharge/ seepage from Govt. approved/ NABL accredited lab.

7) The firm shall report compliance of the NOC conditions online in the website (www.cgwa-noc.gov.in) within one year from the date of issue of this NOC.

8) Industries abstracting ground water in excess of 100 m 3 /d shall undertake annual water audit through certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means.

9) Application for renewal can be submitted online from 90 days before the expiry of NOC. Ground water withdrawal, if any, after expiry of NOC shall be illegal & liable for legal action as per provisions of Environment (Protection) Act, 1986.

10) This NOC is subject to prevailing Central/State Government rules/laws/norms or Court orders related to construction of tube well/ground water abstraction structure / recharge or conservation structure/discharge of effluents or any such matter as applicable.

General conditions:

11) No additional ground water abstraction and/or de-watering structures shall be constructed for this purpose without prior approval of the Central Ground Water Authority (CGWA).

12) The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction (more than that permitted in NOC for specific period).

13) Proponents shall install roof top rain water harvesting in the premise as per the existing building bye laws in the premise.

14) The project proponent shall take all necessary measures to prevent contamination of ground water in the premises failing which the firm shall be responsible for any consequences arising thereupon.

15) In case of industries that are likely to contaminate the ground water, no recharge measures shall be taken up by the firm inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm.

16) Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.

17) Wherever the NOC is for abstraction of saline water and the existing wells (s) is /are yielding fresh water, the same shall be sealed and new tubewell(s) tapping saline water zone shall be constructed within 3 months of the issuance of NOC. The firm shall also ensure safe disposal of saline residue, if any.

18) Unexpected variations in inflow of ground water into the mine pit, if any, shall be reported to the concerned Regional Director, Central Ground Water Board.

19) In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines.

20) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.

21) The issue of this NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and take decisions independently of the NOC.

22) In case of change of ownership, new owner of the industry will have to apply for incorporation of necessary changes in the No Objection Certificate with documentary proof within 60 days of taking over possession of the premises.

23) This NOC is being issued without any prejudice to the directions of the Hon'ble NGT/court orders in cases related to ground water or any other related matters.

24) Proponents, who have installed/constructed artificial recharge structures in compliance of the NOC granted to them previously and have availed rebate of upto 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, shall continue to regularly maintain artificial recharge structures.

25) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, pharmaceutical, other hazardous units etc. (as per CPCB list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution as per Annexure III of the guidelines.

26) In case of new infrastructure projects having ground water abstraction of more than 20 m3/day, the firm/entity shall ensure implementation of dual water supply system in the projects.

27) In case of infrastructure projects, paved/parking area must be covered with interlocking/perforated tiles or other suitable measures to ensure groundwater infiltration/harvesting.

28) In case of coal and other base metal mining projects, the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.

29) The NOC issued is conditional subject to the conditions mentioned in the Public notice dated 27.01.2021 failing which penalty/EC/cancellation of NOC shall be imposed as the case may be.
30) This NOC is issued subject to the clearance of Expert Appraisal Committee (EAC) (if applicable).
31) In the self-compliance report, the PP shall submit details of Drilling Agency/ Agencies, which has/ have constructed BW(s)/ TW(s) along with undertaking to the effect that all necessary measures have been taken as per directions of Hon'ble Supreme Court provided in Annexure-VII of guidelines dated 24.09.2020 in respect of abandoned/ failed BW(s)/ TW(s)/Piezometer(s), if any. The PP is advised to engage registered drilling agency/ agencies. In the event of any mishap/ unfortunate incident due to negligence in taking measures for prevention of accident due to falling in Bore Well, both PP and concerned drilling agency shall jointly be held responsible and penal action as per extant Government rules shall be taken.

(Non-compliance of the conditions mentioned above is likely to result in the cancellation of NOC and legal action against the proponent.)

CENTRAL GROUND WATER AUTHORITY

Chhattisgarh State Industrial Development Corporation Limited
(A Government of Chhattisgarh Undertaking)
(ISO 9001:2015 Certified)
First Floor, Udyog Bhawan, Ring Road No.-1, Telibandha, Raipur-492006 (C.G.)
CIN : U45203CT1981SG001853, PAN : AABCM6288N, GST Regn. No. : 22AABCM6288N5ZY
Phone No. : 0771-6002071, 72, 73, Fax No. : 0771-2583794
Website: www.csidc.in, Email address: csidc_raipur@yahoo.com, csidc.cg@nic.in

No./CSIDC/EE/DIV.-II/2020-21/ 15479 Raipur, Dated 22/01/2021

WATER AVAILABILITY/ NON-AVAILABILITY
CERTIFICATE FOR FRESH/TREATED WATER

TO WHOMSOEVER IT MAY CONCERN

This is to certificate that this office of Chhattisgarh State Industrial Development Corporation Ltd. is providing fresh water supply to the tune of **500 KLD** to the firm **M/s Hira Power & Steels, Located at Urla Industrial Complex,** Block/Taluka **Dharshiwa** Distt. **Raipur** State **Chhattisgarh**

Executive Engineer
(Division-II)
EXECUTIVE ENGINEER
CSIDC LIMITED,
RAIPUR


HIRA
HIRA POWER & STEEL
शौचालय एवं स्नानागार
हीरा ग्रुप के सौजन्य से सी. एस. आर. मद में निर्मित।

An ISO/IEC 17025:2017 NABL Accredited Testing Lab

RAL | RELIABLE ANALYTICAL LAB | Water & Waste Water, Industrial & Environment Pollution, Food & Agriculture Products Analytical Lab | TC - 11719

TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2-Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/APRIL/070	17/04/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/APRIL/070	13/04/2024	Good

Analysis Start Date	13/04/2024	Analysis End Date	16/04/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
10/04/2024	Reliable Analytical Lab.	Near CHP Area	24 hrs.

Ambient Temperature : 39^{0}C	**Wind Direction : from – West east**
Humidity : 51 %	**Cloud Condition : Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	75.22	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	38.12	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	20.11	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	26.14	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

1. The results are related only to the sample tested.
2. This report **shall** not be reproduced without the written approval of RAL.
3. **S**pecification as per MoEF& CC,CPCB, MPPCB.
4. The legal liabilities limited up to the analytical charges only.
5. This Report in full or in part shall not be used for advertising or as evidence in any court of Law
6. Statement or conformity to a specifications is given only on the requests of the customer
7. (*) This Parameter is not covered in our NABL Scope.

Conclusion: Thisreport's result is under the specification; Ambient air is ok for human health.

****

END OF REPORT

Checked by

RELIABLE ANALYTICAL LAB

Authorized Signatory

REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/APRIL/071	17/04/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/APRIL/071	13/04/2024	Good

Analysis Start Date	13/04/2024	Analysis End Date	17/04/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
10/04/2024	Reliable Analytical Lab.	Beside Silo	24 hrs

Ambient Temperature	**: 39^{0}C**	**Wind Direction**	**: from – West east**
Humidity	**: 51 %**	**Cloud Condition**	**: Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	77.44	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	34.99	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	19.43	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	24.77	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

1 .The results are related only to the sample tested.
2. This report **shall** not be reproduced without the written approval of RAL.
3 .**S**pecification as per MoEF& CC,CPCB, MPPCB.
4 .The legal liabilities limited up to the analytical charges only.
5 .This Report in full or in part shall not be used for advertising or as evidence in any court of Law
6 .Statement or conformity to a specifications is given only on the requests of the customer
7.(*)This Parameter is not covered in our NABL Scope.

Conclusion: Thisreport's result is under the specification; Ambient air is ok for human health.

****

END OF REPORT

Checked by **Authorized Signatory**

TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/APRIL/072	17/04/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/APRIL/072	13/04/2024	Good

Analysis Start Date	13/04/2024	Analysis End Date	17/04/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
10/04/2024	Reliable Analytical Lab.	Solar Panel Area	24 hrs

Ambient Temperature : 39^{0}C	**Wind Direction : from – West east**
Humidity : 51 %	**Cloud Condition : Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	70.24	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	40.11	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	17.18	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	26.09	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

1.The results are related only to the sample tested.
2.This report **shall** not be reproduced without the written approval of RAL.
3.Specification as per MoEF& CC,CPCB, MPPCB.
4.The legal liabilities limited up to the analytical charges only.
5.This Report in full or in part shall not be used for advertising or as evidence in any court of Law
6.Statement or conformity to a specifications is given only on the requests of the customer
7.(*)This Parameter is not covered in our NABL Scope.

Conclusion: Thisreport's result is under the specification; Ambient air is ok for human health.

****

END OF REPORT

Checked by

RELIABLE ANALYTICAL LAB

Authorized Signatory

REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2- Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/APRIL/072	17/04/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/APRIL/072	13/04/2024	Good

Analysis Start Date	13/04/2024	Analysis End Date	17/04/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
10/04/2024	Reliable Analytical Lab.	Near Main Gate	24 hrs

Ambient Temperature : 39^{0}C	**Wind Direction : from – West east**
Humidity : 51 %	**Cloud Condition : Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	79.02	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	41.98	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	22.76	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	30.65	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

1.The results are related only to the sample tested.

2.This report **shall** not be reproduced without the written approval of RAL.

3.Specification as per MoEF& CC,CPCB, MPPCB.

4. The legal liabilities limited up to the analytical charges only.

5.This Report in full or in part shall not be used for advertising or as evidence in any court of Law

6.Statement or conformity to a specifications is given only on the requests of the customer

7.(*)This Parameter is not covered in our NABL Scope.

Conclusion: Thisreport's result is under the specification; Ambient air is ok for human health.

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END OF REPORT

Checked by

RELIABLE ANALYTICAL LAB

Authorized Signatory

TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/MAY/079	01/06/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/MAY/079	27/05/2024	Good

Analysis Start Date	27/05/2024	Analysis End Date	01/06/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
25/05/2024	Reliable Analytical Lab.	Near CHP Area	24 hrs

Ambient Temperature : 38^{0}C	**Wind Direction : from – West east**
Humidity : 50 %	**Cloud Condition : Clear**

Test Details :-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	78.56	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	40.34	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	22.55	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	27.16	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

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4. The legal liabilities limited up to the analytical charges only.
5. This Report in full or in part shall not be used for advertising or as evidence in any court of Law
6. Statement or conformity to a specifications is given only on the requests of the customer
7. (*) This Parameter is not covered in our NABL Scope

Conclusion: Thisreport's result is under the specification; Ambient air is ok for human health.

****

END OF REPORT

Checked by

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steel Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/MAY/080	01/06/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/MAY/080	27/05/2024	Good

Analysis Start Date	27/05/2024	Analysis End Date	01/06/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
25/05/2024	Reliable Analytical Lab.	Beside Silo	24 hrs

Ambient Temperature : 38^{0}C	**Wind Direction : from – West east**
Humidity : 50 %	**Cloud Condition : Clear**

Test Details :-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	74.11	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	37.09	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	23.98	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	28.11	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

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5.This Report in full or in part shall not be used for advertising or as evidence in any court of Law
6.Statement or conformity to a specifications is given only on the requests of the customer
7(*) This Parameter is not covered in our NABL Scope

Conclusion: Thisreport's result is under the specification; Ambient air is ok for human health.

****

END OF REPORT

Checked by

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/MAY/081	01/06/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/MAY/081	27/05/2024	Good

Analysis Start Date	27/05/2024	Analysis End Date	01/06/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
25/05/2024	Reliable Analytical Lab.	Solar Panel Area	24 hrs

Ambient Temperature : 38^{0}C	**Wind Direction : from – West east**
Humidity : 50 %	**Cloud Condition : Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	71.56	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	33.11	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	23.48	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	27.11	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

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6.Statement or conformity to a specifications is given only on the requests of the customer

7.(*) This Parameter is not covered in our NABL Scope

Conclusion: Thisreport's result is under the specification; Ambient air is ok for human health.

****

END OF REPORT

Checked by

RELIABLE ANALYTICAL LAB

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steel Ltd. Khasra No. 511/1,512/2, Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/MAY/081	01/06/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/MAY/081	27/05/2024	Good

Analysis Start Date	27/05/2024	Analysis End Date	01/06/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
25/05/2024	Reliable Analytical Lab.	Near Main Gate	24 hrs

Ambient Temperature	**: 38^{0}C**	**Wind Direction**	**: from – West east**
Humidity	**: 50 %**	**Cloud Condition**	**: Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	81.06	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	42.55	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	24.19	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	33.11	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

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5.This Report in full or in part shall not be used for advertising or as evidence in any court of Law
6.Statement or conformity to a specifications is given only on the requests of the customer
7.(*) This Parameter is not covered in our NABL Scope

Conclusion: Thisreport's result is under the specification; Ambient air is ok for human health.

****

END OF REPORT

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/JUN/327	07/06/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/JUN/327	04/06/2024	Good

Analysis Start Date	04/06/2024	Analysis End Date	07/06/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
01/06/2024	Reliable Analytical Lab.	Near CHP Area	24 hrs

Ambient Temperature : 36^0C	**Wind Direction : from – West east**
Humidity : 55 %	**Cloud Condition : Clear**

Test Details :-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	76.34	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	31.88	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	16.19	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	20.22	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

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5. This Report in full or in part shall not be used for advertising or as evidence in any court of Law
6. Statement or conformity to a specifications is given only on the requests of the customer
7. (*) This Parameter is not covered in our NABL Scope.

Conclusion: Thisreport's result is under the specification; Ambient air is ok for human health.

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END OF REPORT

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/JUN/328	07/06/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/JUN/328	04/06/2024	Good

Analysis Start Date	04/06/2024	Analysis End Date	07/06/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
01/06/2024	Reliable Analytical Lab.	Beside Silo	24 hrs

Ambient Temperature : 36^{0}C	**Wind Direction : from – West east**
Humidity : 55 %	**Cloud Condition : Clear**

Test Details :-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	70.78	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	33.67	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	20.67	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	24.10	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

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6.Statement or conformity to a specifications is given only on the requests of the customer
7.(*) This Parameter is not covered in our NABL Scope.

Conclusion: This report's result is under the specification; Ambient air is ok for human health.

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END OF REPORT

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/JUN/329	07/06/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/JUN/329	04/06/2024	Good

Analysis Start Date	04/06/2024	Analysis End Date	07/06/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
01/06/2024	Reliable Analytical Lab.	Solar Panel Area	24 hrs

Ambient Temperature : 37^{0}C	**Wind Direction : from – West east**
Humidity : 55%	**Cloud Condition : Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	68.14	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	30.86	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	18.55	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	22.59	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

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5.This Report in full or in part shall not be used for advertising or as evidence in any court of Law

6.Statement or conformity to a specifications is given only on the requests of the customer

7.(*) This Parameter is not covered in our NABL Scope.

Conclusion: This report's result is under the specification; Ambient air is ok for human health.

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END OF REPORT

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/JUN/330	07/06/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/JUN/330	04/06/2024	Good

Analysis Start Date	04/06/2024	Analysis End Date	07/06/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
01/06/2024	Reliable Analytical Lab.	Near Main Gate	24 hrs

Ambient Temperature	**: 36^{0}C**	**Wind Direction**	**: from – West east**
Humidity	**: 55 %**	**Cloud Condition**	**: Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	72.45	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	30.47	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	21.30	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	26.49	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

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5.This Report in full or in part shall not be used for advertising or as evidence in any court of Law
6.Statement or conformity to a specifications is given only on the requests of the customer
7.(*) This Parameter is not covered in our NABL Scope.

Conclusion: This report's result is under the specification; Ambient air is ok for human health.

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END OF REPORT

Checked by

RELIABLE ANALYTICAL LAB

Authorized Signatory

TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/JUL/048	28/07/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/JUL/048	24/07/2024	Good

Analysis Start Date	24/07/2024	Analysis End Date	28/07/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
23/07/2024	Reliable Analytical Lab.	Near CHP Area	24 hrs

Ambient Temperature : 31^0C	**Wind Direction : from – West east**
Humidity : 50 %	**Cloud Condition : Clear**

Test Details :-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	52.87	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	24.28	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	14.24	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	18.38	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

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6. Statement or conformity to a specifications is given only on the requests of the customer
7. (*) This Parameter is not covered in our NABL Scope.

Conclusion: Thisreport's result is under the specification; Ambient air is ok for human health.

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/JUL/049	28/07/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/JUL/049	24/07/2024	Good

Analysis Start Date	24/07/2024	Analysis End Date	28/07/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
23/07/2024	Reliable Analytical Lab.	Beside Silo	24 hrs

Ambient Temperature	**: 31^{0}C**	**Wind Direction**	**: from – West east**
Humidity	**: 50 %**	**Cloud Condition**	**: Clear**

Test Details :-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	55.24	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	22.14	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	11.45	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	16.24	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

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4.The legal liabilities limited up to the analytical charges only.
5.This Report in full or in part shall not be used for advertising or as evidence in any court of Law
6.Statement or conformity to a specifications is given only on the requests of the customer
7.(*) This Parameter is not covered in our NABL Scope.

Conclusion: This report's result is under the specification; Ambient air is ok for human health.

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END OF REPORT

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RELIABLE ANALYTICAL LAB

Authorized Signatory

TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/JUL/050	28/07/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/JUL/050	24/07/2024	Good

Analysis Start Date	24/07/2024	Analysis End Date	28/07/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
23/07/2024	Reliable Analytical Lab.	Solar Panel Area	24 hrs

Ambient Temperature : 31^{0}C	**Wind Direction : from – West east**
Humidity : 50%	**Cloud Condition : Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	49.68	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	21.86	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	12.57	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	14.76	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

1.The results are related only to the sample tested.

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6.Statement or conformity to a specifications is given only on the requests of the customer

7.(*) This Parameter is not covered in our NABL Scope.

Conclusion: This report's result is under the specification; Ambient air is ok for human health.

****

END OF REPORT

Checked by

RELIABLE ANALYTICAL LAB

Authorized Signatory

TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/JUL/051	28/07/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/JUL/051	24/07/2024	Good

Analysis Start Date	24/07/2024	Analysis End Date	28/07/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
23/07/2024	Reliable Analytical Lab.	Near Main Gate	24 hrs

Ambient Temperature : 31^{0}C	**Wind Direction : from – West east**
Humidity : 50 %	**Cloud Condition : Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification as per CPCB	Test Method
1.	Particulate Matter (PM10)	µg/m^3	56.37	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	25.64	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	14.79	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	19.66	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)*	mg/Nm^3	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

Note:

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7.(*) This Parameter is not covered in our NABL Scope.

Conclusion: This report's result is under the specification; Ambient air is ok for human health.

****

END OF REPORT

Checked by

RELIABLE ANALYTICAL LAB

Authorized Signatory

RAL | RELIABLE ANALYTICAL LAB
15, Paricharika Nagar, Indore - 452 001 (M.P.)
8103898979, 9907136827
ral2021indore@gmail.com
An ISO 9001:2015 CERTIFIED LAB

TEST REPORT

Format No. RAL/F-40 A

Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/AUG/031	26/08/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/AUG/031	22/08/2024	Good

Analysis Start Date	22/08/2024	**Analysis End Date**	26/08/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
20/08/2024	Reliable Analytical Lab.	1.Near CHP Area 2. Beside Silo 3. Solar Panel Area 4. Near Main Gate	24 hrs

Ambient Temperature	**: 29^{0}C**	**Wind Direction**	**: from – West east**
Humidity	**: 48 %**	**Cloud Condition**	**: Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result				Specification	Test Method
			1.	2.	3.	4.		
1.	Particulate Matter (PM10)	µg/m^3	47.16	51.72	46.54	52.46	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	20.86	20.37	19.67	22.11	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	18.31	14.52	15.37	19.34	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	22.44	19.63	18.31	23.67	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)	mg/Nm^3	BDL(DL1.15)	BDLDL1.15)	BDL(DL1.15)	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

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TEST REPORT

Format No. RAL/F-40 A

Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/SEP/133	25/09/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Ambient Air	RAL/2024/SEP/133	22/09/2024	Good

Analysis Start Date	22/09/2024	**Analysis End Date**	25/09/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
20/09/2024	Reliable Analytical Lab.	1.Near CHP Area 2. Beside Silo 3. Solar Panel Area 4. Near Main Gate	24 hrs

Ambient Temperature	**: 32^{0}C**	**Wind Direction**	**: from – West east**
Humidity	**: 51 %**	**Cloud Condition**	**: Clear**

Test Details:-

S.No.	Test Parameters	Unit	Result				Specification	Test Method
			1.	2.	3.	4.		
1.	Particulate Matter (PM10)	µg/m^3	52.68	56.84	50.66	56.26	NMT 100	IS-5182 (Part-23) 2006
2.	Fine Particulate Matter (PM2.5)	µg/m^3	23.65	26.54	22.24	25.22	NMT 60	IS-5182 (Part-24) 2019
3.	Sulphur Dioxide (SO_2)	µg/m^3	21.44	18.24	19.28	24.12	NMT 80	IS-5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO_2)	µg/m^3	26.14	24.28	21.48	28.82	NMT 80	IS-5182 (Part-6) 2006
5.	Carbon Monoxide (CO)	mg/Nm^3	BDL(DL1.15)	BDLDL1.15)	BDL(DL1.15)	BDL(DL1.15)	NMT 4	IS-5182 (Part-) 2006

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An ISO/IEC 17025:2017 NABL Accredited Testing Lab

RAL RELIABLE ANALYTICAL LAB

Water & Waste Water ,
Industrial & Environment Pollution,
Food & Agriculture Products
Analytical Lab

TC - 11719

TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/APRIL/074	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/APRIL/074	13/04/2024	Reliable Analytical Lab.	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	3.0 & 3.6 MVA Submerged ARC Furnace A& B Combine Stack	3.0 MVA 3.6 MVA	30 min.	11.50	30. meter	1.4 Meter
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 79^0 C**			
Ambient Temperature : 39^0 C			**Flue Gas Velocity : 10.9M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	23.78	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/APRIL/077	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/APRIL/077	13/04/2024	Reliable Analytical Lab.	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	6 MVA Submerged ARC Furnace E"	6.0 MVA	30 min.	10.10	40 meter	2.0
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 97^0 C**			
Ambient Temperature : 40 ^{0} C			**Flue Gas Velocity : 8.64M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	22.32	Max.-30	IS 11255 (P-1)1985 RA 2003

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/APRIL/078	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/APRIL/078	13/04/2024	Reliable Analytical Lab.	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	CLU Convertor and thermite and combine stack	650 KW	30 min.	11:30	35 meter	2.295
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 89^0 C**			
Ambient Temperature : 40 ^{0} C			**Flue Gas Velocity : 10.0M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	19.34	Max.-30	IS 11255 (P-1)1985 RA 2003

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/APRIL/076	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/APRIL/076	13/04/2024	Reliable Analytical Lab.	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	5.5 MVA Submerged ARC FurnaceC& D"	5.5 MVA	30 min.	14.10	35 meter	1.4 Meter
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 91^0 C**			
Ambient Temperature : 40 ^{0} C			**Flue Gas Velocity : 8.10M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	19.65	Max.-30	IS 11255 (P-1)1985 RA 2003

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/APRIL/075	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/APRIL/075	13/04/2024	Reliable Analytical Lab.	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	Captive Power Plant Stack-20 MW	20 MW	30 min.	16:30	73 meter	2.83 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 86^0 C**
Ambient Temperature : 40 ^{0} C	**Flue Gas Velocity : 8.97M/Sec.**
Total Gas Quantity : 246347.6 Nm3/hr	

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/Nm^3	44.98	Max.-50	IS 11255 (P-1)1985 RA 2003
2.	Sulphur Dioxide (Sox)	mg/Nm^3	270	Max-600	IS 11255 (P-2) 1985
3.	Oxides of Nitrogen (NOx)	mg/Nm^3	154	Max-300	IS 11255 (P-7) 2005
4.	Carbon Monoxide (CO)*	mg/Nm^3	2.4	-----	USEPA Method No.10
5.	Hg*	mg/Nm^3	N.D	Max-0.03	AAS Method

Note:

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14. (*) This parameter not covered our NABL Scope

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/MAY/083	30/05/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/MAY/083	27/05/2024	Reliable Analytical Lab.	Good
Analysis Start Date	27/05/2024	**Analysis End Date**	29/05/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
25/05/2024	3.0 & 3.6 MVA Submerged ARC Furnace A& B Combine Stack	3.0 MVA 3.6 MVA	30 min.	11.40	30. meter	1.4 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 81 ^{0} C**
Ambient Temperature : 39^0 C	**Flue Gas Velocity : 14.88M/Sec.**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	20.11	Max.-30	IS 11255 (P-1)1985 RA 2003

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/MAY/084	30/05/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/MAY/084	27/05/2024	Reliable Analytical Lab.	Good
Analysis Start Date	27/05/2024	**Analysis End Date**	29/05/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
25/05/2024	5.5 MVA Submerged ARC Furnace C & D	5.5 MVA	30 min.	11.20	35 meter	1.4 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 92^0 C**
Ambient Temperature : 40 ^{0} C	**Flue Gas Velocity : 8.07M/Sec.**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	24.77	Max.-30	IS 11255 (P-1)1985 RA 2003

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/MAY/086	30/05/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/MAY/086	27/05/2024	Reliable Analytical Lab.	Good
Analysis Start Date	27/05/2024	**Analysis End Date**	29/05/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
25/05/2024	6 MVA Submerged ARC Furnace E"	6.0 MVA	30 min.	13.40	40 meter	2.0
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 95^0 C**			
Ambient Temperature : 40 ^{0} C			**Flue Gas Velocity : 8.41M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	19.54	Max.-30	IS 11255 (P-1)1985 RA 2003

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/MAY/087	30/05/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/MAY/087	27/05/2024	Reliable Analytical Lab.	Good
Analysis Start Date	27/05/2024	**Analysis End Date**	29/05/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
25/05/2024	CLU Convertor and thermite and combine stack	650 KW	30 min.	14:55	35 meter	2.295

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 86^0 C**
Ambient Temperature : 40 ^{0} C	**Flue Gas Velocity : 11.2M/Sec.**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	21.11	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/MAY/087-01	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/MAY/087-01	27/05/2024	Reliable Analytical Lab.	Good
Analysis Start Date	27/05/2024	**Analysis End Date**	29/05/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
25/05/2024	Captive Power Plant Stack-20 MW	20 MW	30 min.	14:35	73 meter	2.83 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 86^0 C**
Ambient Temperature : 40 ^{0} C	**Flue Gas Velocity : 8.97M/Sec.**
Total Gas Quantity : 246255.1 Nm3/hr	

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/Nm^3	41.66	Max.-50	IS 11255 (P-1)1985 RA 2003
2.	Sulphur Dioxide (Sox)	mg/Nm^3	252	Max-600	IS 11255 (P-2) 1985
3.	Oxides of Nitrogen (NOx)	mg/Nm^3	141	Max-300	IS 11255 (P-7) 2005
4.	Carbon Monoxide (CO)*	mg/Nm^3	2.1	-----	USEPA Method No.10
5.	Hg*	mg/Nm^3	N.D	Max-0.03	AAS Method

Note:

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7.(*) This parameter not covered our NABL Scope

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/JUN/332	07/06/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/JUN/332	27/05/2024	Reliable Analytical Lab.	Good
Analysis Start Date	04/06/2024	**Analysis End Date**	07/06/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
01/06/2024	3.0 & 3.6 MVA Submerged ARC Furnace A& B Combine Stack	3.0 MVA 3.6 MVA	30 min.	12:20	30. meter	1.4 Meter
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 88^0 C**			
Ambient Temperature : 37^0 C			**Flue Gas Velocity : 13.88M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	25.87	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2 Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/JUN/333	04/06/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/JUN/333	27/05/2024	Reliable Analytical Lab.	Good
Analysis Start Date	04/06/2024	**Analysis End Date**	04/06/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
01/06/2024	5.5 MVA Submerged ARC Furnace C & D	5.5 MVA	30 min.	10.30	35 meter	1.4 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 93^0 C**
Ambient Temperature : 37^0 C	**Flue Gas Velocity : 7.27M/Sec.**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	20.20	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/JUN/335	07/06/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/JUN/335	27/05/2024	Reliable Analytical Lab.	Good
Analysis Start Date	04/06/2024	**Analysis End Date**	07/06/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
01/06/2024	6 MVA Submerged ARC Furnace E"	6.0 MVA	30 min.	14.40	40 meter	2.0
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 99^0 C**			
Ambient Temperature : 37^0 C			**Flue Gas Velocity : 7.32M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	26.54	Max.-30	IS 11255 (P-1)1985 RA 2003

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2 Urla Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/JUN/336	07/06/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/JUN/336	27/05/2024	Reliable Analytical Lab.	Good
Analysis Start Date	04/06/2024	**Analysis End Date**	07/06/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
01/06/2024	CLU Convertor and thermite and combine stack	650 KW	30 min.	15:55	35 meter	2.295
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 96^0 C**			
Ambient Temperature : 37^0 C			**Flue Gas Velocity : 9.9M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	24.11	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/JUN/0336-01	07/06/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/JUN/0336-01	04/06/2024	Reliable Analytical Lab.	Good
Analysis Start Date	04/06/2024	**Analysis End Date**	07/06/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
01/06/2024	Captive Power Plant Stack-20 MW	20 MW	30 min.	16:30	73 meter	2.83 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 86^0 C**
Ambient Temperature : 40 ^{0} C	**Flue Gas Velocity : 8.97M/Sec.**
Total Gas Quantity : 246347.6 Nm3/hr	

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/Nm^3	39.16	Max.-50	IS 11255 (P-1)1985 RA 2003
2.	Sulphur Dioxide (Sox)	mg/Nm^3	252	Max-600	IS 11255 (P-2) 1985
3.	Oxides of Nitrogen (NOx)	mg/Nm^3	141	Max-300	IS 11255 (P-7) 2005
4.	Carbon Monoxide (CO)*	mg/Nm^3	2.7	-----	USEPA Method No.10
5.	Hg*	mg/Nm^3	N.D	Max-0.03	AAS Method

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7.(*) This parameter not covered our NABL Scope

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/JUL/052	28/07/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/JUL/052	24/07/2024	Reliable Analytical Lab.	Good
Analysis Start Date	24/07/2024	**Analysis End Date**	28/07/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
23/07/2024	3.0 & 3.6 MVA Submerged ARC Furnace A& B Combine Stack	3.0 MVA 3.6 MVA	30 min.	11:35	30. meter	1.4 Meter
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 81^0 C**			
Ambient Temperature : 31^0 C			**Flue Gas Velocity : 11.56M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	19.64	Max.-30	IS 11255 (P-1)1985 RA 2003

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2 Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/JUL/053	28/07/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/JUL/053	24/07/2024	Reliable Analytical Lab.	Good
Analysis Start Date	24/07/2024	**Analysis End Date**	28/07/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
23/07/2024	5.5 MVA & 5.5 MVA Submerged ARC Furnace C & D	5.5 MVA & 5.5 MVA	30 min.	11.00	35 meter	1.4 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 80^0 C**
Ambient Temperature : 31^0 C	**Flue Gas Velocity : 6.14M/Sec.**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	17.78	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/JUL/054	28/07/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/JUL/054	24/07/2024	Reliable Analytical Lab.	Good
Analysis Start Date	24/07/2024	**Analysis End Date**	28/07/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
23/07/2024	6 MVA Submerged ARC Furnace E"	6.0 MVA	30 min.	12:10	40 meter	2.0
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 87^0 C**			
Ambient Temperature : 31^0 C			**Flue Gas Velocity : 6.19M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	19.67	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2 Urla Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/JUL/055	28/07/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/JUL/055	24/07/2024	Reliable Analytical Lab.	Good
Analysis Start Date	24/07/2024	**Analysis End Date**	28/07/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
23/07/2024	CLU Convertor and thermite and combine stack	650 KW	30 min.	12:35	35 meter	2.295
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 84^0 C**			
Ambient Temperature : 31^0 C			**Flue Gas Velocity : 8.64M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	20.38	Max.-30	IS 11255 (P-1)1985 RA 2003

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/JUL/057	28/07/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Air	RAL/2024/JUL/057	24/07/2024	Reliable Analytical Lab.	Good
Analysis Start Date	24/07/2024	**Analysis End Date**	28/07/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
23/07/2024	Captive Power Plant Stack-20 MW	20 MW	30 min.	13:30	73 meter	2.83 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 79^0 C**
Ambient Temperature : 31 ^{0}C	**Flue Gas Velocity : 7.46M/Sec.**
Total Gas Quantity : 246347.8 Nm3/hr	

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/Nm^3	28.67	Max.-50	IS 11255 (P-1)1985 RA 2003
2.	Sulphur Dioxide (Sox)	mg/Nm^3	213	Max-600	IS 11255 (P-2) 1985
3.	Oxides of Nitrogen (NOx)	mg/Nm^3	127	Max-300	IS 11255 (P-7) 2005
4.	Carbon Monoxide (CO)*	mg/Nm^3	1.9	-----	USEPA Method No.10
5.	Hg*	mg/Nm^3	N.D.	Max-0.03	AAS Method

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/AUG/035	26/08/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/AUG/035	22/08/2024	Reliable Analytical Lab.	Good
Analysis Start Date	22/08/2024	**Analysis End Date**	26/08/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
20/08/2024	3.0 & 3.6 MVA Submerged ARC Furnace A& B Combine Stack	3.0 MVA 3.6 MVA	30 min.	10:00	30. meter	1.4 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 74^0 C**
Ambient Temperature : 29^0 C	**Flue Gas Velocity : 10.33M/Sec.**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	14.87	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2 Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/AUG/036	26/08/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/AUG/036	22/08/2024	Reliable Analytical Lab.	Good
Analysis Start Date	22/08/2024	**Analysis End Date**	26/08/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
20/08/2024	5.5 MVA Submerged ARC Furnace C & D	5.5 MVA & 5.5 MVA	30 min.	10.30	35 meter	1.4 Meter
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 77^0 C**			
Ambient Temperature : 29^0 C			**Flue Gas Velocity : 6.07M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	15.68	Max.-30	IS 11255 (P-1)1985 RA 2003

Note:

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/AUG/037	26/08/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/AUG/037	22/08/2024	Reliable Analytical Lab.	Good
Analysis Start Date	22/08/2024	**Analysis End Date**	26/08/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
20/08/2024	6 MVA Submerged ARC Furnace E"	6.0 MVA	30 min.	12:00	40 meter	2.0
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 78^0 C**			
Ambient Temperature : 29^0 C			**Flue Gas Velocity : 6.10M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	16.22	Max.-30	IS 11255 (P-1)1985 RA 2003

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2 Urla Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/AUG/038	26/08/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/AUG/038	22/08/2024	Reliable Analytical Lab.	Good
Analysis Start Date	22/08/2024	**Analysis End Date**	26/08/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
20/08/2024	CLU Convertor and thermite and combine stack	650 KW	30 min.	12:30	35 meter	2.295
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 79^0 C**			
Ambient Temperature : 29^0 C			**Flue Gas Velocity : 7.24M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	18.76	Max.-30	IS 11255 (P-1)1985 RA 2003

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/AUG/040	26/08/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/AUG/040	22/08/2024	Reliable Analytical Lab.	Good
Analysis Start Date	22/08/2024	**Analysis End Date**	26/08/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
20/08/2024	Captive Power Plant Stack-20 MW	20 MW	30 min.	13:00	73 meter	2.83 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 79^0 C**
Ambient Temperature : 31 ^{0} C	**Flue Gas Velocity : 7.46M/Sec.**
Total Gas Quantity : 246347.8 Nm3/hr	

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/Nm^3	24.82	Max.-50	IS 11255 (P-1)1985 RA 2003
2.	Sulphur Dioxide (Sox)	mg/Nm^3	207	Max-600	IS 11255 (P-2) 1985
3.	Oxides of Nitrogen (NOx)	mg/Nm^3	119	Max-300	IS 11255 (P-7) 2005
4.	Carbon Monoxide (CO)*	mg/Nm^3	1.7	-----	USEPA Method No.10
5.	Hg*	mg/Nm^3	N.D.	Max-0.03	AAS Method

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/SEP/135	25/09/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/SEP/135	22/09/2024	Reliable Analytical Lab.	Good
Analysis Start Date	22/09/2024	**Analysis End Date**	25/09/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
20/09/2024	3.0 & 3.6 MVA Submerged ARC Furnace A& B Combine Stack	3.0 MVA 3.6 MVA	30 min.	10:30	30. meter	1.4 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 78^0 C**
Ambient Temperature : 32^0 C	**Flue Gas Velocity : 14.17M/Sec.**

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	19.62	Max.-30	IS 11255 (P-1)1985 RA 2003

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2 Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/SEP/136	25/09/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/SEP/136	22/09/2024	Reliable Analytical Lab.	Good
Analysis Start Date	22/09/2024	**Analysis End Date**	25/09/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
20/09/2024	5.5 MVA & 5.5 MVA Submerged ARC Furnace C & D	5.5 MVA & 5.5 MVA	30 min.	11.00	35 meter	1.4 Meter
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 82^0 C**			
Ambient Temperature : 32^0 C			**Flue Gas Velocity : 7.88M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	18.32	Max.-30	IS 11255 (P-1)1985 RA 2003

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Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/SEP/137	25/09/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/SEP/137	22/09/2024	Reliable Analytical Lab.	Good
Analysis Start Date	22/09/2024	**Analysis End Date**	25/09/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
20/09/2024	6 MVA Submerged ARC Furnace E"	6.0 MVA	30 min.	11:30	40 meter	2.0
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 86^0 C**			
Ambient Temperature : 32^0 C			**Flue Gas Velocity : 8.14M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	21.35	Max.-30	IS 11255 (P-1)1985 RA 2003

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Hira Power and Steels Ltd. Khasra No. 511/1,512/2 Urla Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/SEP/138	25/09/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/SEP/138	22/09/2024	Reliable Analytical Lab.	Good
Analysis Start Date	22/09/2024	**Analysis End Date**	25/09/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
20/09/2024	CLU Convertor and thermite and combine stack	650 KW	30 min.	12:10	35 meter	2.295
Fuel Used : Electricity			**Flue Gas Temperature of Stack : 83^0 C**			
Ambient Temperature : 32^0 C			**Flue Gas Velocity : 9.11M/Sec.**			

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/nm^3	22.14	Max.-30	IS 11255 (P-1)1985 RA 2003

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2, Urla, Industrial Area, Raipur CG		**7200005648/U102**	RAL/2024/SEP/140	25/09/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/SEP/140	22/09/2024	Reliable Analytical Lab.	Good
Analysis Start Date	22/09/2024	**Analysis End Date**	25/09/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
20/09/2024	Captive Power Plant Stack-20 MW	20 MW	30 min.	12:40	73 meter	2.83 Meter

Fuel Used : Electricity	**Flue Gas Temperature of Stack : 82^0 C**
Ambient Temperature : 32^0 C	**Flue Gas Velocity : 8.36M/Sec.**
Total Gas Quantity : 246347.2 Nm3/hr	

Test Details:-

S.No.	Test Parameters	Unit	Result	Specification	Test Method
1.	Total Particulate Matter (TPM)	mg/Nm^3	30.22	Max.-50	IS 11255 (P-1)1985 RA 2003
2.	Sulphur Dioxide (Sox)	mg/Nm^3	226	Max-600	IS 11255 (P-2) 1985
3.	Oxides of Nitrogen (NOx)	mg/Nm^3	132	Max-300	IS 11255 (P-7) 2005
4.	Carbon Monoxide (CO)*	mg/Nm^3	2.0	-----	USEPA Method No.10
5.	Hg*	mg/Nm^3	N.D.	Max-0.03	AAS Method

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7.(*) This parameter not covered our NABL Scope

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Food & Agriculture Products
Analytical Lab

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TEST- REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/APR/109	16/04/2024

Sample Name	Sample ID	Date of Receipt	Condition of Sample
Fugitive Emission	RAL/2024/APR/109	13/04/2024	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	15/04/2024

Details

Sampling Date	Sampling Done By	Sampling Location	Sampling Duration
10/04/2024	Reliable Analytical Lab.	1.Near A& B Furnace 2.C & D Furnace 3.CLU Convertor 4.Raw Material Yard 5.CHP Area	08 hrs
Ambient Temperature : 40^{0}C		**Wind Direction : from – West east**	
Humidity : 52 %		**Cloud Condition : Clear**	

Test Details:-

S.No.	Test Parameters	Unit	Specification	Test Method	1.	2.	3.	4.	5.
					Result				
1.	Total Suspended Particulate Matter as (SPM)	µg/m^3	NMT 2000	EPA Method IO-2.1	1232.54	1365.54	1528.54	1025.54	958.54

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TEST REPORT

Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/APR/101	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/APR/101	10/04/2024	Chemist	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	3.0 & 3.6 MVA Submerged ARC Furnace A& B Combine Stack	3.0 MVA 3.6 MVA	30 min.	12:00	30. meter	1.4 Meter
Stack Attached to		**Bag Filter**				
Fuel Used : Electricity			**Ambient Temperature : 40^0 C**			

Test Details: -

S.No.	Test Parameters	Unit	Result		Specification	Test Method
			A& B Inlet	A & b Outlet		
1.	Flue Gas Temperature of Stack	^{0}C	157.0	112.0	-	IS 11255 (P-1)1985 RA 2003
2.	Flue Gas Velocity	M/Sec	14.3	6.22	-	IS 11255 (P-1)1985 RA 2003
3.	Total gas Quantity	Nm3/h	55120.0	27380.2	-	IS 11255 (P-1)1985 RA 2003
4.	Total Particulate Matter (TPM)	mg/nm^3	785.0	22.54	Max.-30	IS 11255 (P-1)1985 RA 2003
Efficiency (%)			**98.74**			

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/APR/102	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/APR/102	10/04/2024	Chemist	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	5.5 MVA& 5.5 MVA Submerged ARC Furnace C & D	5.5 MVA& 5.5 MVA	30 min.	13.30	35 meter	1.4 Meter
Stack Attached to		**Bag Filter**				
Fuel Used : Electricity			**Ambient Temperature : 30^0 C**			

Test Details: -

S.No.	Test Parameters	Unit	Result			Specification	Test Method
			C Inlet	D Inlet	C&D Outlet (Combined Stack)		
1.	Flue Gas Temperature	^{0}C	264.0	254.0	135.0	-	IS 11255 (P-1)1985 RA 2003
2.	Flue Gas Velocity	M/Sec	9.52	11.8	8.01	-	IS 11255 (P-1)1985 RA 2003
3.	Total gas Quantity	Nm3/h	29483.62	33762.72	28647.23	-	IS 11255 (P-1)1985 RA 2003
4.	Total Particulate Matter (TPM)	mg/nm^3	813.0	855.0	27.8	Max.-30	IS 11255 (P-1)1985 RA 2003
Total (TPM)			1668.0		27.8		
Efficiency (%)					**97.94**		

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/APR/103	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/APR/103	10/04/2024	Chemist	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	6 MVA Submerged ARC Furnace E"	6.0 MVA	30 min.	10.50	40. meter	2.0 Meter
Stack Attached to		**Bag Filter**				
Fuel Used : Electricity		**Ambient Temperature : 30^0 C**				

Test Details: -

S.No.	Test Parameters	Unit	Result		Specification	Test Method
			E Inlet	E Outlet		
1.	Flue Gas Temperature	^{0}C	189	79.6	-	IS 11255 (P-1)1985 RA 2003
2.	Flue Gas Velocity	M/Sec	15.32	5.45	-	IS 11255 (P-1)1985 RA 2003
3.	Total gas Quantity	Nm3/h	112382.5	48431.2	-	IS 11255 (P-1)1985 RA 2003
4.	Total Particulate Matter (TPM)	mg/nm^3	402.5	26.2	Max.-30	IS 11255 (P-1)1985 RA 2003
Efficiency (%)			**98.77**			

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Format No. RAL/F-40 A

Name & Address of Company/Customer		Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/APR/104	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/APR/104	10/04/2024	Chemist	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	CLU Convertor and thermite and combine stack	650 KW	30 min.	14:55	35 meter	2.295
Stack Attached to		**Bag Filter**				
Fuel Used : Electricity			**Ambient Temperature : 30^0 C**			

Test Details: -

S.No.	Test Parameters	Unit	Result		Specification	Test Method
			CLU Inlet	CLU Outlet		
1.	Flue Gas Temperature of Stack	^{0}C	287	96.0	-	IS 11255 (P-1)1985 RA 2003
2.	Flue Gas Velocity	M/Sec	10.55	21.32	-	IS 11255 (P-1)1985 RA 2003
3.	Total gas Quantity	Nm3/h	79721.8	256810.5	-	IS 11255 (P-1)1985 RA 2003
4.	Total Particulate Matter (TPM)	mg/nm^3	2850.1	23.4	Max.-30	IS 11255 (P-1)1985 RA 2003
Efficiency (%)			**98.56**			

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Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG		**7200005648/U102**	RAL/2024/APR/105	17/04/2024
Sample Name	**Sample ID**	**Date of Receipt**	**Sampling Done By**	**Condition of Sample**
Stack Emission Monitoring	RAL/2024/APR/105	10/04/2024	Chemist	Good
Analysis Start Date	13/04/2024	**Analysis End Date**	16/04/2024	

Details

Sampling Date	Type Of Stack	Capacity	Sampling Duration	Sampling Time	Height of Stack	Diameter of Stack
10/04/2024	Captive Power Plant Stack-20 MW	20 MW	30 min.	16:55	35 meter	2.83 Meter
Stack Attached to		**Bag Filter**				
Fuel Used : Coal & Coke		**Ambient Temperature : 30^0 C**				

Test Details: -

S.No.	Test Parameters	Unit	Result		Specification	Test Method
			20 MW Inlet	20 MW Outlet		
1.	Flue Gas Temperature of Stack	^{0}C	146	117.0	-	IS 11255 (P-1)1985 RA 2003
2.	Flue Gas Velocity	M/Sec	18.37	12.8	-	IS 11255 (P-1)1985 RA 2003
3.	Total gas Quantity	Nm3/h	798364.62	302749.27	-	IS 11255 (P-1)1985 RA 2003
4.	Total Particulate Matter (TPM)	mg/nm^3	745.0	32.93	Max.-50	IS 11255 (P-1)1985 RA 2003
Efficiency (%)			**98.99**			

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Hira Power and Steels Ltd. Khasra, No. 511/1,512/2, Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/APRIL/079	17/04/2024

Sampling Done by	Date of Receipt	Sample Quantity	Batch No.	Packing
Reliable Analytical Lab	13/04/2024	1 ltr.	NA	Plastic bottle

Sample Name	Sample ID	Condition of Sample	Sealed/Unsealed
Siltation Tank Water	RAL/2024/APRIL/079	Good	Unsealed

Analysis Start Date	13/04/2024	Analysis End Date	17/04/2024

Test Details:-

S. No.	Test Parameter	Unit	Inlet Water	Outlet Water	Limit as Per Consent	Method of Analysis
1.	pH @ 25 ^{0}C	--	8.33	8.02	5.5 to 9.0	IS 3025 (P-11) 2017
2.	Total Suspended Solid	mg/l	9.9	2.0	100	IS 3025 (P-17) 2017
3.	Oil & Grease	mg/l	Nil	Nil	10	IS 3025 (P-39) 2021
4.	Chemical Oxygen Demand	mg/l	60	10	250	IS 3025 (P-58) 2006
5.	Biological Oxygen Demand at 27^{0}C (3Days	mg/l	18	3.5	30	IS 3025 (P-44) 1993

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Hira Power and Steels Ltd. Khasra, No. 511/1,512/2, Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/MAY/088	01/06/2024

Sampling Done by	Date of Receipt	Sample Quantity	Batch No.	Packing
Client	27/05/2024	3.5 ltr.	NA	Plastic bottle
Sample Name	**Sample ID**	**Condition of Sample**		**Sealed/Unsealed**
Siltation Tank Water	RAL/2024/MAY/088	Good		Unsealed
Analysis Start Date	27/05/2024	**Analysis End Date**		01/06/2024

Test Details:-

S. No.	Test Parameter	Unit	Inlet Water	Outlet Water	Limit as Per Consent	Method of Analysis
1.	pH @ 25 ^{0}C	--	8.12	7.89	5.5 to 9.0	IS 3025 (P-11) 2017
2.	Total Suspended Solid	mg/l	110.3	3.1	100	IS 3025 (P-17) 2017
3.	Oil & Grease	mg/l	Nil	Nil	10	IS 3025 (P-39) 2021
4.	Chemical Oxygen Demand	mg/l	257	13.0	250	IS 3025 (P-58) 2006
5.	Biological Oxygen Demand at 27^{0}C (3Days	mg/l	40.2	2.8	30	IS 3025 (P-44) 1993

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Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra, No. 511/1,512/2,Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/JUN/337	07/06/2024

Sampling Done by	Date of Receipt	Sample Quantity	Batch No.	Packing
Client	04/06/2024	1 ltr.	NA	Plastic bottle
Sample Name	**Sample ID**	**Condition of Sample**		**Sealed/Unsealed**
Siltation Tank Water	RAL/2024/JUN/337	Good		Unsealed
Analysis Start Date	04/06/2024	**Analysis End Date**		07/06/2024

Test Details:-

S. No.	Test Parameter	Unit	Inlet Water	Outlet Water	Limit as Per Consent	Method of Analysis
1.	pH @ 25 ^{0}C	--	8.40	7.18	5.5 to 9.0	IS 3025 (P-11) 2017
2.	Total Suspended Solid	mg/l	16.38	3.0	100	IS 3025 (P-17) 2017
3.	Oil & Grease	mg/l	Nil	Nil	10	IS 3025 (P-39) 2021
4.	Chemical Oxygen Demand	mg/l	75.0	12.0	250	IS 3025 (P-58) 2006
5.	Biological Oxygen Demand at 27^{0}C (3Days	mg/l	12.0	2.0	30	IS 3025 (P-44) 1993

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Format No. RAL/F-40

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra, No. 511/1,512/2,Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/JUL/056	28/07/2024

Sampling Done by	Date of Receipt	Sample Quantity	Batch No.	Packing
Client	24/07/2024	1 ltr.	NA	Plastic bottle
Sample Name	**Sample ID**	**Condition of Sample**		**Sealed/Unsealed**
Siltation Tank Water	RAL/2024/JUL/056	Good		Unsealed
Analysis Start Date	24/07/2024	**Analysis End Date**		28/07/2024

Test Details:-

S. No.	Test Parameter	Unit	Inlet Water	Outlet Water	Limit as Per Consent	Method of Analysis
1.	pH @ 25 ^{0}C	--	7.89	7.03	5.5 to 9.0	IS 3025 (P-11) 2017
2.	Total Suspended Solid	mg/l	9.0	2.0	100	IS 3025 (P-17) 2017
3.	Oil & Grease	mg/l	Nil	Nil	10	IS 3025 (P-39) 2021
4.	Chemical Oxygen Demand	mg/l	62.0	8.0	250	IS 3025 (P-58) 2006
5.	Biological Oxygen Demand at 27^{0}C (3Days	mg/l	10.0	1.0	30	IS 3025 (P-44) 1993

Note:

1.The results are related only to the sample tested.
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3.Specification as per Party Consent.
4.The legal liabilities limited up to the analytical charges only.
5.This Report in full or in part shall not be used for advertising or as evidence in any court of Law
6.Statement or conformity to a specifications is given only on the requests of the customer

******

END OF REPORT

Checked by

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TEST- REPORT

Format No. RAL/F-40

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra, No. 511/1,512/2,Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/AUG/039	26/08/2024

Sampling Done by	Date of Receipt	Sample Quantity	Batch No.	Packing
Client	22/08/2024	1 ltr.	NA	Plastic bottle
Sample Name	**Sample ID**	**Condition of Sample**		**Sealed/Unsealed**
Siltation Tank Water	RAL/2024/AUG/039	Good		Unsealed
Analysis Start Date	22/08/2024	**Analysis End Date**		26/08/2024

Test Details:-

S. No.	Test Parameter	Unit	Inlet Water	Outlet Water	Limit as Per Consent	Method of Analysis
1.	pH @ 25 ^{0}C	--	7.71	7.01	5.5 to 9.0	IS 3025 (P-11) 2017
2.	Total Suspended Solid	mg/l	12.8	3.0	100	IS 3025 (P-17) 2017
3.	Oil & Grease	mg/l	Nil	Nil	10	IS 3025 (P-39) 2021
4.	Chemical Oxygen Demand	mg/l	69.0	14.0	250	IS 3025 (P-58) 2006
5.	Biological Oxygen Demand at 27^{0}C (3Days	mg/l	12.0	2.0	30	IS 3025 (P-44) 1993

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TEST- REPORT

Format No. RAL/F-40

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra, No. 511/1,512/2,Urla, Industrial Area, Raipur CG	**7200005648/U102**	RAL/2024/SEP/139	25/09/2024

Sampling Done by	Date of Receipt	Sample Quantity	Batch No.	Packing
Client	22/09/2024	1 ltr.	NA	Plastic bottle
Sample Name	**Sample ID**	**Condition of Sample**		**Sealed/Unsealed**
Siltation Tank Water	RAL/2024/SEP/139	Good		Unsealed
Analysis Start Date	22/09/2024	**Analysis End Date**		25/09/2024

Test Details:-

S. No.	Test Parameter	Unit	Inlet Water	Outlet Water	Limit as Per Consent	Method of Analysis
1.	pH @ 25 ^{0}C	--	7.76	7.10	5.5 to 9.0	IS 3025 (P-11) 2017
2.	Total Suspended Solid	mg/l	16.0	8.0	100	IS 3025 (P-17) 2017
3.	Oil & Grease	mg/l	Nil	Nil	10	IS 3025 (P-39) 2021
4.	Chemical Oxygen Demand	mg/l	78.24	22.46	250	IS 3025 (P-58) 2006
5.	Biological Oxygen Demand at 27^{0}C (3Days	mg/l	14.0	4.0	30	IS 3025 (P-44) 1993

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Test Report

Format No. RAL/F-40

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/OCT/072	28/10/2024

Sample Submited By	Name of Manufacturer	Batch No.	Batch Size	Mfg. Date	Date of Expiry
Client	NA	NA	NA	NA	NA

Sample Name	Sample ID	Date of Receipt	Sample Quantity	Packing	Condition of Sample	Sealed/ Unsealed
Borewell Water	RAL/2024/OCT/072	28/06/2024	5 ltr.	Plastic bottle	Good	Unsealed

Analysis Start Date	24/10/2024	Analysis End Date	28/10/2024

Test Details :-

S.No.	Test Parameter	Unit	Result	Specification as per IS 10500		Method of Analysis
				Desirable Limit	Permissible Limit	
1.	pH @ 25 ^{0}C	--	7.65	6.5-8.5	No relaxation	IS 3025 (P-11)
2.	Conductivity	µs/cm	654	-	-	IS 3025 (P-14)
3.	Turbidity	NTU	<1	Max.1	Max.5	IS 3025 (P-10)
4.	Total Dissolved Solid	mg/l	430.0	Max.500	Max.2000	IS 3025 (P-16)
5.	Chloride ,as Cl	mg/l	55.32	Max.250	Max.1000	IS 3025 (P-32)
6.	Total Hardness ,as $CaCO_3$	mg/l	340.65	Max.200	Max.600	IS 3025 (P-21)
7.	Total Alkalinity , as $CaCO_3$	mg/l	250.0	Max.200	Max.600	IS 3025 (P-23)
8.	Calcium ,as Ca	mg/l	75.65	Max.75	Max.200	IS 3025 (P-40)
9.	Magnesium ,as Mg	mg/l	42.68	Max.30	Max.100	IS 3025 (P-46)
10.	Sulphate ,as SO_4	mg/l	20.54	Max.200	Max.400	IS 3025 (P-24 Sec-1
11.	Nitrate , as NO_3	mg/l	3.65	Max. 45	No relaxation	IS 3025 (P-34)

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12.	Iron, as Fe*	mg/l	0.13	Max.1.0	No relaxation	IS-3025 (P-53)
13.	Fluoride, as F*	mg/l	0.20	Maz.1.0	Max. 1.5	IS-3025 (P-60)
14.	Sodium as Na*	mg/l	35.6	-	-	IS -3025 (P-43)
15.	Potassium as K*	mg/l	10.5	-	-	IS -3025 (P-49)

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5.. (*) This parameter not covered our NABL Scope

6.. **NABL Accredited Lab (ISO IEC 2017) Validity 30.05.2025.**

****

END OF REPORT

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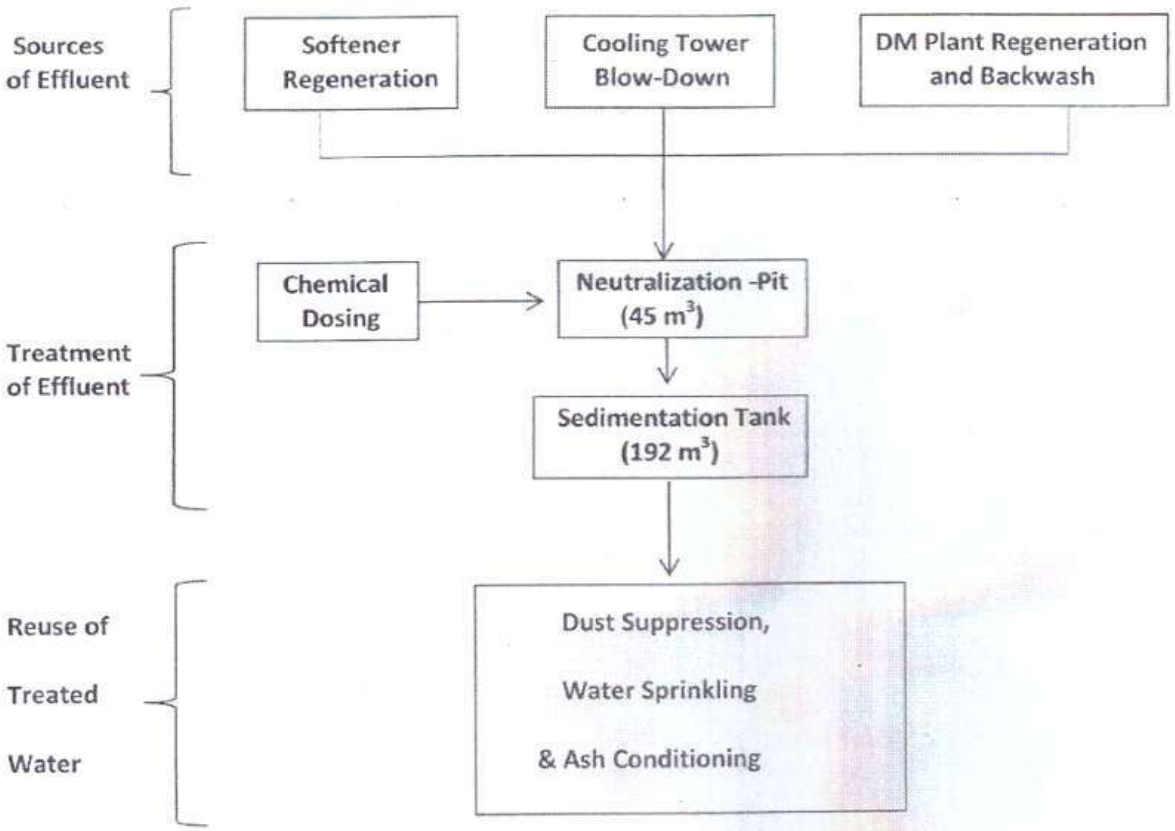
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ANNEXURE - X

EFFLUENT TREATMENT SCHEME

No waste water is discharged outside factory premises. Waste water generated from Cooling Tower Blow-down, Softener Regeneration and Backwash & DM Water Regeneration and Backwash is taken to Neutralization-Pit (45 m^3) where sample is taken and after Analysis chemical dosing is done along with air scouring and then after chemical dosing the water is sent to Sedimentation tank (192 m^3) for settling of suspended particles, After sedimentation the treated water is used for Dust suppression, Water sprinkling on the road and Ash conditioning. Hence, Zero liquid discharge condition is maintained.






Annexure-XI
Anneure-XI
GPS Map Camera
Raipur, Chhattisgarh, India
8J7C+X6C, Metal Park Rd, Urla Industrial Complex, Birgoan, Raipur, Chhattisgarh 492003, India
Lat 21.315995°
Long 81.620306°
29/12/23 04:19 PM GMT +05:30
Google


GPS Map Camera
Raipur, Chhattisgarh, India
557,563,564, Metal Park Rd, Urla Industrial Complex, Birgoan, Raipur, Chhattisgarh 492003, India
Lat 21.31807°
Long 81.618805°
29/12/23 04:04 PM GMT +05:30
Google


GPS Map Camera
Raipur, Chhattisgarh, India
557,563,564, Metal Park Rd, Urla Industrial Complex, Birgoan, Raipur,
Chhattisgarh 492003, India
Lat 21.317994°
Long 81.618762°
29/12/23 04:03 PM GMT +05:30
Google

TEST REPORT

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2m Urla Industrial Area Raipur CG	7200005648/U102 dated 27.06.2024	RAL/2024/APRIL/080	17/04/2024

Name of Manufacturer	Mfg. License No.	Batch No.	Batch Size	Mfg. Date	Start Date & Time
NA	NA	NA	NA	NA	10/04/2024 12:15 AM Day Time) Night Time 22: 12 PM

Sample Name	Sample ID	Date of Receipt Data	Sample Quantity	Packing	Condition of Sample	Sealed/ Unsealed
Ambient Noise Monitoring	RAL/2024/APRIL/080	13/04/2024	NA	NA	NA	NA

Measurement Start Date	10/04/2024	Measurement End Date	10/04/2024

Test Details: -

Sr.	Characteristic /Location	Unit	Result Day Time	Result Night Time	Specification Day	Specification Night	Method of Test
1.	Near CHP Area	**dB**	65.2	55.3	75	70	IS 9989-1981
2.	Beside Silo	**dB**	67.2	53.7	75	70	IS 9989-1981
3.	Solar Panel Area	**dB**	64.9	42.6	75	70	IS 9989-1981
4.	Near Main Gate	**dB**	59.4	48.3	75	70	IS 9989-1981

Note:

15. The results are related only to the sample tested.
16. This report shall not be reproduced without the written approval of RAL.
17. Specification as per MoEF&CC,CPCB, MPPCB.
18. Day time shall mean from 06:00 AM to 18:00 & Night time shall mean from 18:00 to 6:00 AM.
19. Equipment ID No.RAL/EQ/ID-21**,**

6. The legal liabilities limited up to the analytical charges only.
7. This Report in full or in part shall not be used for advertising or as evidence in any court of Law
8. Statement or conformity to a specifications is given only on the requests of the customer

Conclusion: This report's result is under the specification; Ambient Noise is ok for human health

****

END OF REPORT

Checked by

RELIABLE ANALYTICAL LAB

Authorized Signatory

RAL | RELIABLE ANALYTICAL LAB
15, Paricharika Nagar, Indore - 452 001 (M.P.)
8103898979, 9907136827
ral2021indore@gmail.com
An ISO 9001:2015 CERTIFIED LAB

TEST REPORT

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2m Urla Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/MAY/080	01/06/2024

Name of Manufacturer	Mfg. License No.	Batch No.	Batch Size	Mfg. Date	Start Date & Time
NA	NA	NA	NA	NA	27/05/202412:22AM Day Time)

Sample Name	Sample ID	Date of Receipt Data	Sample Quantity	Packing	Condition of Sample	Sealed/ Unsealed
Ambient Noise Monitoring	RAL/2024/MAY/080	27/05/2024	NA	NA	NA	NA

Measurement Start Date	27/05/2024	Measurement End Date	27/05/2024

Test Details: -

Sr.	Characteristic /Location	Unit	Result Day Time	Result Night Time	Specification Day	Specification Night	Method of Test
1.	Near CHP Area	**dB**	62.4	55.3	75	70	IS 9989-1981
2.	Beside Silo	**dB**	61.9	53.7	75	70	IS 9989-1981
3.	Solar Panel Area	**dB**	67.8	42.6	75	70	IS 9989-1981
4.	Near Main Gate	**dB**	56.7	48.3	75	70	IS 9989-1981

Note:

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Conclusion: This report's result is under the specification; Ambient Noise is ok for human health

****

END OF REPORT

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TEST REPORT

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/JUN/331	07/06/2024

Name of Manufacturer	Mfg. License No.	Batch No.	Batch Size	Mfg. Date	Start Date & Time
NA	NA	NA	NA	NA	01/06/202412:25AM Day Time) Night Time 22:40 PM

Sample Name	Sample ID	Date of Receipt Data	Sample Quantity	Packing	Condition of Sample	Sealed/ Unsealed
Ambient Air Noise Monitoring	RAL/2024/JUN/331	01/06/2024	NA	NA	NA	NA

Measurement Start Date	01/06/2024	Measurement End Date	01/06/2024

Test Details: -

Sr.	Characteristic /Location	Unit	Result Day Time	Result Night Time	Specification Day	Specification Night	Method of Test
1.	Near CHP Area	**dB**	68.7	53.6	75	70	IS 9989-1981
2.	Beside Silo	**dB**	65.2	55.0	75	70	IS 9989-1981
3.	Solar Panel Area	**dB**	62.7	43.2	75	70	IS 9989-1981
4.	Near Main Gate	**dB**	61.8	46.1	75	70	IS 9989-1981

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Conclusion: This report's result is under the specification; Ambient Noise is ok for human health

****

END OF REPORT

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TEST REPORT

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/JUL/058	28/07/2024

Name of Manufacturer	Mfg. License No.	Batch No.	Batch Size	Mfg. Date	Start Date & Time
NA	NA	NA	NA	NA	23/07/202411:50AM Day Time) Night Time 21:00 PM

Sample Name	Sample ID	Date of Receipt Data	Sample Quantity	Packing	Condition of Sample	Sealed/ Unsealed
Ambient Noise Monitoring	RAL/2024/JUL/058	23/07/2024	NA	NA	NA	NA

Measurement Start Date	23/07/2024	Measurement End Date	23/07/2024

Test Details:-

Sr.	Characteristic /Location	Unit	Result Day Time	Result Night Time	Specification Day	Specification Night	Method of Test
1.	Near CHP Area	**dB**	64.6	50.8	75	70	IS 9989-1981
2.	Beside Silo	**dB**	61.8	51.2	75	70	IS 9989-1981
3.	Solar Panel Area	**dB**	60.6	40.7	75	70	IS 9989-1981
4.	Near Main Gate	**dB**	60.1	42.4	75	70	IS 9989-1981

Note:

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Conclusion: This report's result is under the specification; Ambient Noise is ok for human health

****

END OF REPORT

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TEST REPORT

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/AUG/041	26/08/2024

Name of Manufacturer	Mfg. License No.	Batch No.	Batch Size	Mfg. Date	Start Date & Time
NA	NA	NA	NA	NA	20/08/202411:30AM Day Time) Night Time 20:00 PM

Sample Name	Sample ID	Date of Receipt Data	Sample Quantity	Packing	Condition of Sample	Sealed/ Unsealed
Ambient Noise Monitoring	RAL/2024/AUG/041	20/08/2024	NA	NA	NA	NA

Measurement Start Date	20/08/2024	Measurement End Date	20/08/2024

Test Details:-

Sr.	Characteristic /Location	Unit	Result Day Time	Result Night Time	Specification Day	Specification Night	Method of Test
1.	Near CHP Area	**dB**	62.4	60.4	75	70	IS 9989-1981
2.	Beside Silo	**dB**	60.2	53.1	75	70	IS 9989-1981
3.	Solar Panel Area	**dB**	62.1	43.2	75	70	IS 9989-1981
4.	Near Main Gate	**dB**	63.4	45.7	75	70	IS 9989-1981

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8. Statement or conformity to a specifications is given only on the requests of the customer

Conclusion: This report's result is under the specification; Ambient Noise is ok for human health

****

END OF REPORT

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TEST REPORT

Name & Address of Company/Customer	Work Order No./ Reference No. of Letter	CoA No.	CoA Issue Date
Hira Power and Steels Ltd. Khasra No. 511/1,512/2,Urla, Industrial Area Raipur CG	**7200005648/U102**	RAL/2024/SEP/134	25/09/2024

Name of Manufacturer	Mfg. License No.	Batch No.	Batch Size	Mfg. Date	Start Date & Time
NA	NA	NA	NA	NA	20/09/202411:50AM Day Time) Night Time 18:00 PM

Sample Name	Sample ID	Date of Receipt Data	Sample Quantity	Packing	Condition of Sample	Sealed/ Unsealed
Ambient Noise Monitoring	RAL/2024/SEP/134	20/09/2024	NA	NA	NA	NA

Measurement Start Date	20/09/2024	Measurement End Date	20/09/2024

Test Details:-

Sr.	Characteristic /Location	Unit	Result Day Time	Result Night Time	Specification Day	Specification Night	Method of Test
1.	Near CHP Area	**dB**	66.2	63.8	75	70	IS 9989-1981
2.	Beside Silo	**dB**	63.1	57.4	75	70	IS 9989-1981
3.	Solar Panel Area	**dB**	65.8	48.3	75	70	IS 9989-1981
4.	Near Main Gate	**dB**	66.2	49.2	75	70	IS 9989-1981

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8. Statement or conformity to a specifications is given only on the requests of the customer

Conclusion: This report's result is under the specification; Ambient Noise is ok for human health

****

END OF REPORT

Checked by

RELIABLE ANALYTICAL LAB

Authorized Signatory

Dr. Shashi Narayan
Assistant Professor
Department of Civil Engineering
NIT Uttarakhand

राष्ट्रीय प्रौद्योगिकी संस्थान,
उत्तराखण्ड
National Institute of Technology,
Uttarakhand

Ash-Disposal Compliance Audit Report for HPSL, Raipur

Brief:

The **Power plant (AFBC Boiler), Hira Power and Steels Limited, Unit II**, Raipur, Chhattisgarh, was inspected and audited for fly ash disposal on 28/11/2024. The plant has a capacity of 20MW. The primary fuel source was Coal blended with Rice Husk. The fly ash generation for 2023-24 was 56,961.67 MT. The ash generated is collected from Economizer, Air preheater, and Electrostatic precipitators (ESP) to the dry silo. The installed capacity of dedicated silo for storage of dry fly ash is 550MT. This is sufficient for the fly-ash-generated for 3 days of operation at peak load.

The fly-ash from silo is disposed of using two methods: Dry-Ash disposal using bulkers and Wet-conditioned fly-ash disposal using dumper trucks. The silo contains two different hoppers to facilitate the above-mentioned methods of disposal. The water conditioning is done using pumps which were installed prior to one of the hoppers. Additionally, there are arrangements made to condition the dumper truck using water and then covering it. The loading, unloading, transport, storage, and disposal of ash is done in an environmentally sound manner and all precautions to prevent air and water pollution are taken.

Bottom-waste is collected directly through hoppers and transported to collection pit for segregation of bottom-ash and further to be disposed of using dumper trucks.

Profile of Company:

Hira Power and Steel Limited (HPSL) stands as industrial endeavor in Raipur, spearheaded by the Agrawal Family. Specializing in Manganese-based Ferro Alloys, crucial for steel and cast iron melting furnaces, the company was founded in 1986 by Mr. Om Prakash Agrawal. In a strategic move, within a year, the focus shifted from Calcium Carbide to Ferro Alloys production, setting the stage for a transformative journey. Rebranded as "HIRA POWER AND STEELS LIMITED" in 2007, the company's roots trace back to Mr. Agrawal's bold decision to adopt a 2.5 MVA furnace for Ferro Alloys, despite advisory resistance. The success of this venture led to the installation of four additional Ferro Alloys units. Presently, HPSL boasts a manufacturing capacity of 48,000 MT/year of Manganese-based Ferro Alloys and a 20 MW Captive Thermal Power Plant, catering to both domestic and international demands. Guided by Mr. Agrawal's leadership, Hira Power and Steel Limited stands resilient as a prominent force in the Ferro Alloys industry.

Dr. Shashi Narayan
Assistant Professor
Department of Civil Engineering
NIT Uttarakhand

राष्ट्रीय प्रौद्योगिकी संस्थान,
उत्तराखण्ड
National Institute of Technology,
Uttarakhand

Observations:

1. The records of Fuel consumption (Coal + Rice Husk) was checked from the record and found to be 1,14,888MT. The average ash content in the Fuel from the feed chemical analysis was 35%. Thus the flyash generated as per this data is verified with the data provided in the Fly-ash Annual utilization report for F.Y. 2023-24.
2. The fly ash generated was disposed of using dumper truck to Brick manufacturing industry on daily basis (permitted use). The fly ash utilization data was verified with the dispatch logs of dumper trucks against the data of fly ash generated and found correct.
3. There was no ash-ponds for this plant.

Suggestions:

It is suggested that since all the present utilization is to nearby brick manufacturing units, other avenues for utilization from permitted use /avenue may be explored like better utilization of ash for road works, land filling of abundant pits so that in a scenario for non-demand from brick manufacturing units for 3-4 days alternative source of supply can be switch over, to avoid in filling up of the dry-silos.

(Dr. Amardeep) (Dr. Bibhash Kumar) (Dr. Shashi Narayan)

Srinagar (Garhwal), Distt. Pauri, Uttarakhand-246174, Email: shashi@nituk.ac.in +91-9945670734

फ्लाई ऐश उपयोग हेतु अनुबंध

यह अनुबंध निम्नालिखित पक्षकारों के मध्य आज दिनांक को स्थान उरला, रायपुर (छ.ग.) में फ्लाई ऐश के उपयोग एवं परिवहन के सम्बंध में निम्नानुसार निष्पादित किया जा रहा है :-

हीरा पॉवर एण्ड स्टील्स लिमिटेड,
उरला इण्डस्ट्रीयल कॉम्प्लेक्स,
उरला, रायपुर-492003 (छ.ग.) - प्रथम पक्ष
फोन नं- +91 771 4082500 / 4082600
ई-मेल : dpsingh@hpslindia.com
द्वारा : श्री डी.पी. सिंह, अधिशाषी निदेशक

एवं

श्री गोविंद ब्रिक्स इण्डस्ट्रीज - द्वितीय पक्ष
तेन्दुआ, रायपुर (छ.ग.)

1. प्रत्येक गाड़ी में राखड़ तिरपाल से ढ़ककर ही परिवहन किया जायेगा।
2. राखड़ उठाने के लिए वाहन का कारखाने के सिस्टम में पंजीयन आवश्यक है।
3. राखड़ का उठाव 24 x 7 किया जायेगा।
4. वाहन का फिटनेस, बीमा चालक का वैध भारी वाहन लायसेंस होना आवश्यक है।
5. वाहन का ड्रायवर स्वस्थ एवं नशा इत्यादि का सेवन करने वाला नहीं होना चाहिए।
6. वाहन का ड्रायवर कारखाने के किसी भी कर्मचारी/अधिकारी से किसी भी प्रकार का विवाद-बहस या गाली-गलौच इत्यादि नहीं करेगा।
7. वाहन का चालक कारखाने में पूर्ण रूपसे अनुशासन में रह कर काम करेगा।
8. वाहन का चालक कारखाने की किसी भी सम्पति को नुकसान नहीं पहुँचायेगा। कारखाने की किसी भी सम्पति की चोरी नहीं करेगा।
9. वाहन एवं चालक के द्वारा कारखाने की किसी भी सम्पति को नुकसान पहुँचाये जाने पर नुकसान का अनुमान लगाया जायेगा एवं नुकसान की क्षतिपूर्ति वाहन मालिक के द्वारा कर दिये जाने पर ही वाहन को कारखाना परिसर के बाहर जाने की अनुमति दी जायेगी।

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

10. वाहन के खराब हालत में होने पर अथवा वाहन चालक को शराब के नशे में पाये जाने पर चालक एवं वाहन को ब्लैक लिस्ट कर प्रवेश वर्जित कर दिया जायेगा।
11. वाहन से रास्ते में फ्लाई ऐश गिरने पर अथवा गिरते हुए जाने पर वाहन को फ्लाई ऐश लोडिंग हेतु प्रवेश नहीं दिया जायेगा।
12. फ्लाई ऐश उठाने वाली परिवहन कम्पनी को ब्रिक्स निर्माता कम्पनी से फ्लाई ऐश की कुल मात्रा ब्रिक्स बनाने में उपयोग की गई है। इस आशय का प्रमाण पत्र हर महीने **हीरा पावर एण्ड स्टील्स् लिमिटेड** में जमा करना होगा।
13. फ्लाई ऐश का परिवहन छ.ग. पर्यावरण संरक्षण मण्डल के द्वारा निर्धारित मानकों के अनुरूप किया जाना अनिवार्य होगा।

प्रथम पक्ष/उत्पादक

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

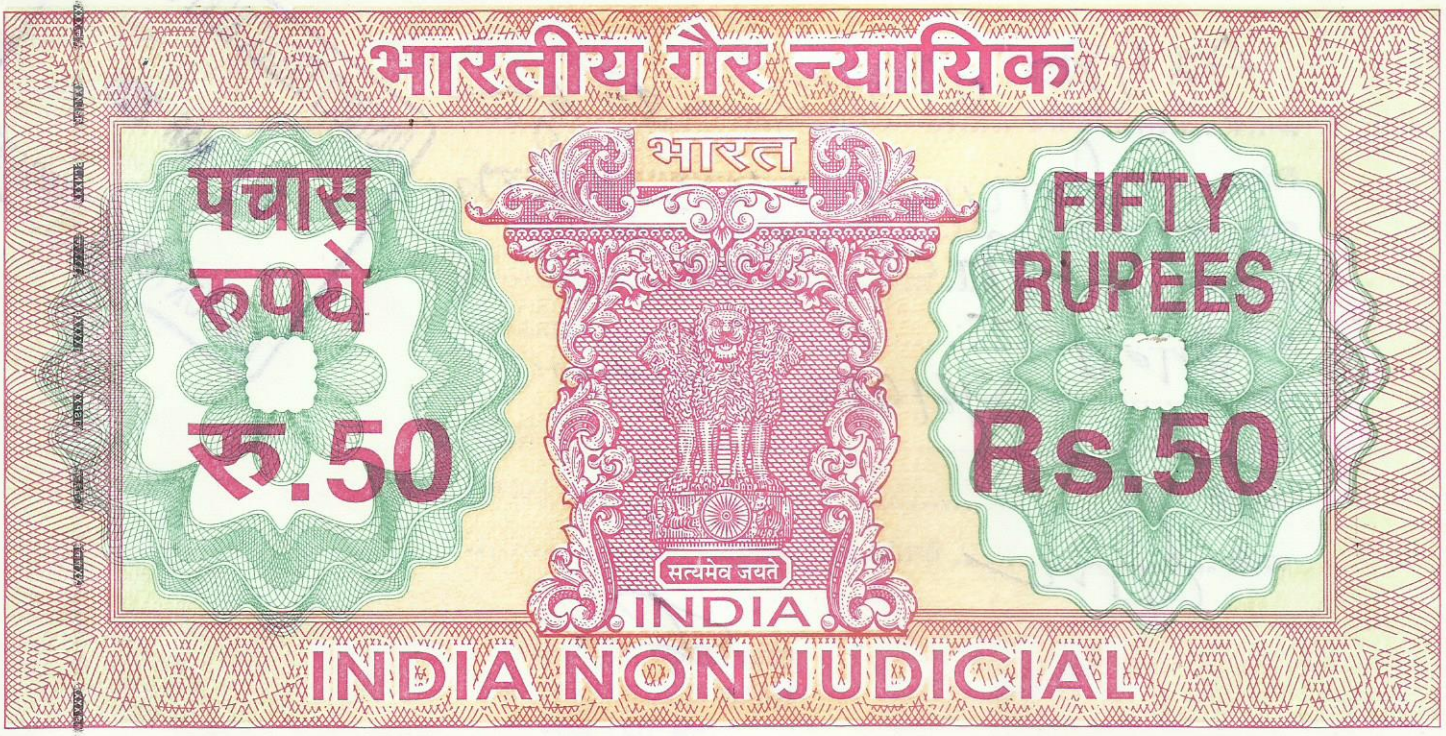
अधिकृत हस्ताक्षरकर्ता

द्वितीय पक्ष/उपभोक्ता

D.K. Rathore

अधिकृत हस्ताक्षरकर्ता

साक्षी (1) श्री पी. एल. वर्मा
(2) श्री अविरल तिवारी



छत्तीसगढ़ CHHATTISGARH

Y 315820

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is made to Operate Bricks Plant at Urla Industrial Area adjacent to Hira Power & Steels Ltd, and signed between:

M/s. Hira Power & Steels Limited, First Part
Plot no.511/1 , 512/2 Urla Industrial Area Raipur (C.G.)
is a Registered company established under Companies Act 1952 (Here in after called "HPSL" Or "Company")
Through Mr. D.P. Singh, Executive Director.

And

M/s. Shree Mahaveer Bricks,
Behind Om Hospital , Vikas Vihar, Raipura,
Distt-Raipur (CG) Through Mr. Jitendra Singh Kushwaha,
Proprietor & Bricks Manufacturer
GST NO.22APUPK0810PIZN, TIN: 22291311311 Second Part

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Whereas M/s. Hira Power & Steels Limited intended to establish a Bricks Plant for utilization of its wastes Fly Ash and A.O.D. Slag in manufacturing of Fly ash Bricks and Mr. Jitendra Singh Kushwaha, has expressed his interest by submitting his quotation offer to operate the same in mutual interest and benefit. Both parties have set their hands together on 16th day of March 2020 at Urla Industrial Area Raipur and agreed on following Terms And Conditions :-

For, Hira Power & Steels Ltd.
EXECUTIVE DIRECTOR

For, Shree Mahaveer Bricks
Proprietor

1.0 SCOPE OF WORK:

Following work will be done by Bricks Manufacturer in his account:

a) Construction of shed for storage for Bricks and Raw Materials.
b) Construction of boundary wall or Fencing for his bricks plant security.
c) Installation of Bricks manufacturing Machines for the capacity of 30,000 bricks per day.
d) Arrangement of Manpower as per requirement of the bricks plant.
e) Construction of office and hut mat.
f) Submission of PDCs for credit of 90 days.
g) Development of Land and Plantation / Beautification for pollution control.
h) Accommodation & Transportation: Bricks Manufacturer has to arrange at their own cost and risk.
i) Storage of all material of Bricks Manufacturer shall be responsibility of Bricks Manufacturer.
j) Consumption of Fly ash, old used waste Bed material, Jigging Slag, A.O.D Slag from HPSL only.
k) All Legal Formalities like factory license, Approval of Drawing, CECB Consent, EPF, ESIC, W.C , Labour license and other required approvals from State Govt will be taken by Bricks Manufacturer.
l) Bricks Plant will run 24 hours a day for production of 7.5 lakh bricks per month.

2.0 Payment Terms:

Rent and other charges will be paid on monthly basis to M/s Hira Power & Steels Ltd with in 90 days but this credit facility will be available only on submission of advance PDCs .

2.1 Labour Wages Payment:

Bricks Manufacturer will pay wages to his workers at the rates as prescribed by State Government from time to time.

3.0 Statutory Requirement:

3.1 Bricks Manufacturer will be sole responsible for all statutory liabilities and permissions required to operate a bricks plant like Labour License, EPF, Bonus, Gratuity, ESIC/ Workmen Compensation, Medical Facility, CECB Consent, Factory License ,GST Registration and compliance of provisions of contract labour (R&A) Act, Approval of Town and Country Planning and Municipal Tax and permission of Birgaon Municipal Corporation etc.

3.2 In case of any fatal accident occurred to workmen on duty, Bricks Manufacturer will have to borne all medical expenses and compensation of the injured workmen in case of disability/death.

3.3 Minimum age limit for the deployed labour shall be 18 years & maximum age limit shall be 60 Years.

3.4 The Bricks Manufacturer shall maintain a daily attendance register including the number and names of the workers engaged in the premises for work.

3.5 All legal disputes are subject to Raipur jurisdiction.

For, Hira Power & Steels Ltd.

EXECUTIVE DIRECTOR

For, Shree Mahaveer Bricks

Proprietor

4.0 Safety:-

4.1 Safety of employee is prime responsibility of The Bricks Manufacturer he will provide all the Personal Protective Equipments to working personnel like Safety Shoes, Helmets, Hand Gloves, Apron and Nose Masks and First-Aid facility etc. Hence All workers shall be registered in EPF & ESIC Scheme without fail.

4.2 The Bricks Manufacturer will immediately remove from the work site any workman who may be found to be suffering from infectious disease.

4.3 No labour will be allowed to enter in the security gate to report for duty under the influence of drugs, liquor or any intoxicating substance.

4.4 The Bricks Manufacturer will ensure that his supervisor must be aware about the safety rules and he should strictly follow the safety procedures .

4.5 In case of any accident including Fatal Accident or bodily Injury on duty total responsibility of medical treatment and payment of compensation will be on The Bricks Manufacturer's account. HPSL shall not be held liable for any responsibility of your worker.

5.0 General Terms & Conditions:-

5.1 The persons engaged by you should have Good health and adequate Skills & experience of relevant jobs.

5.2 Motor Vehicles used to transport Man power, Materials and Finished product shall be registered in RTO along with its fitness and proper insurance covered.

5.3 The Bricks Manufacturer will ensure that no property of the Company will be damaged by Motor Vehicles used to transport Man power, Materials and Finished product. If any damage of company property caused by Motor Vehicles used/engaged to transport of material being used by The Bricks Manufacturer , in such case The Bricks Manufacturer will make the damaged property in good condition or he will pay the cost incurred to make the damaged property in good condition.

5.4 The Bricks Manufacturer will also provide to HPSL a list of all personnel along with photographs with their brief Bio-data, driving license and experience certificate in details (if required to company).Temporary gate pass approved by HR department /CSO to workman will be provided.

5.5 The Bricks Manufacturer will ensure that wastage of water and electricity will be strictly restricted in all circumstances.

5.6 The Bricks Manufacturer will ensure that fugitive emission of dust, fly ash will be efficiently controlled in bricks plant area . No rainwater and air winds shall be contaminated with highly pollutant material fly ash and AOD slag dust.

5.7 The Bricks Manufacturer will ensure that personnel engaged do not cause any damage to Company property. They should maintain absolute discipline while be on duty and other wise. if anyone found breaching/violation of the same shall be replaced immediately.

5.8 The Bricks Manufacturer will also ensure that his worker shall not be indulging in any sort of anti social activities like theft, gambling, strike, Dharna, Gherao and fraud against the HPSL.

5.9 Construction / Fabrication of shed shall be done as per the drawings provided To HPSL Engineer.

5.10 This contract will be initially for a period of Three years .Further the contract can be extended for a suitable period as per the discretion and satisfaction of the management.

5.11 Company reserves the right to terminate this contract, at any time by giving a notice of 30 days and no compensation will be paid in lieu thereof in case of unsatisfactory performance and violation of terms of contract.

For, Hira Power & Steels Ltd.

EXECUTIVE DIRECTOR

For, Shree Mahaveer Bricks

Proprietor

5.12 If the Bricks Manufacturer wants to rescind the contract voluntarily or otherwise, he is required to give a notice of at least 60 days and clear all dues and liabilities with in this period.

5.13 The personnel deployed by The Bricks Manufacturer shall not have any right to claim of jobs in HPSL in any circumstances.

5.14 If under any enactment (including rules or regulations included there under) HPSL is held liable to pay any amount to the worker , The Bricks Manufacturer will reimburse the same to the company within a period of 15 days from the date of demand by the company. Demand shall be made in writing. And The Bricks Manufacturer indemnifies and agrees to keep indemnified the company against any such amount and any losses, charges and expenses incurred by the company on account thereof.

5.15 If due to any act of commission or omission, misfeasance or nonfeasance of any worker deployed by the Bricks Manufacturer any third party suffers loss or damages the The Bricks Manufacturer will make good the same.

5.16 The Bricks Manufacturer shall not assign/ sublet this contract to any other person without the written consent of the HPSL.

5.17 This agreement can be terminated by the company or shall deemed to be terminated by the company in any of the following events:-

a). If the company terminates the same with or without assigning any reason by giving 30 days notice to the 2ND Party in writing as from the date to be specified in the notice.

b). If the Bricks Manufacturer is adjudged insolvent.

c). If the company goes into liquidation voluntarily or through the court.

d). If the contract becomes illegal by virtue of any law.

e). If the authorities cancel the license of the Bricks Manufacturer .

f) If any difference of opinion arises between the company and The Bricks Manufacturer regarding this agreement and the implementation there of, the decision of the Executive Director of the company shall be final and binding on the 2ND Party .

5.18 These terms and conditions are subject to changed, modified, amended, altered by Management at any time without assigning any reason.

Whereas parties have set their hands together and accepted all above terms & conditions and signed this memorandum of Understanding in a healthy and peaceful environment with free mutual consent on this 16th day of March 2020 at Urla, Dist Raipur (C.G.)

For & on behalf of, HIRA POWER AND STEELS LIMITED For, Hira Power & Steels Ltd. (D. P. SINGH) EXECUTIVE DIRECTOR EXECUTIVE DIRECTOR PARTY NO.1	For & on behalf of, Shree Mahaveer Bricks For, Shree Mahaveer Bricks (Jitendra Singh Kushwaha) Proprietor / Bricks Manufacturer Proprietor PARTY NO.2

Witness 1. Name: Mr. P.L.VERMA, Address: Tarun Nagar Dangania ,Raipur (CG)

Witness 2. Name: Mr. Y.Chandra Kishore. Address: Diksha Nagar, Gudhiyari,Raipur (CG)

For, Shree Mahaveer Bricks

Proprietor

CHAPTER - 7

HAZARDS CONSIDERATION IN OPERATION/ PROCESS/ STORAGE, MSDS AND RISK ANALYSIS IN FACTORY

S. No.	OPERA-TION/ PROCESS EQUIPME-NT/AREAS	POSSIBLE HAZARDS	PRECAUTIONARY MEASURES IMPLEMENTED/EXISTING	MEASURES TO BE TAKEN IF MISHAP OCCURS.
01	Submerged Arc and Converting Furnace/LRF / Laddle Preheater	Fire hazard caused by flames Burnt may possible if directly come in contact.	1. Emergency Kit is kept ready and nearer to the Furnace 2. Fire Fighting Equipments powder/foam type extinguishers on vehicle and mounted on walls are kept readily available 3. Hydrant system provided At conspicuous places 4. Fire Fighting man is employed	a) Switch off the System. b) Information is delivered to the Manager/Director present in the Factory. c) First Aid is given to the victim and carrying to Hospital for further treatment. d) In case of any malfunct-ion Furnace get switched off automatically and can be restarted only after removing the faults.
02	Charging of RM, scrap and other materal in SA Furnace Converter And Moving Parts of other M/Cs	Cut/Burnt & hazards may possible (In SA Furnace RM Charged after Cheking % of Silica which is only responsible Of Boiling/ Splashing of Molten Mass) (Dust of Mn Coa sand are also harmful)	1.Workers charging the material In the furnace are equipped with Gloves, Nose Mask & proper equipments to handle & feed the Mn, other material, scrap and dust also Fire proof dress & proper equipment to handle the scrap and material 2. Bag Filters/Pollution Control Equipment had Provided to arrest Dust of Material. Use of safety Appliances is must for worker. 3.Fire proof system made available & fire fighting equipments like extinguisher and water hydrant with sufficient No of points easi accessible. 4.Furnace is operated by trained and qualified person	a) If any worker is hurt/ burnt during the process then Information is delivered to the Director/Manager available in Factory. c) Information given to the Doctor fix up by the Manageme d) First Aid is given to the victim by shift in charge/ trained person and then refer to the Doctor for further treat e) Entry of other person is prohibited and proper watch is kept by shift in-charge
03	Tapping of Molten metal In the Laddle/molds Process of casting	Burn due to Hot metal (boiling/splashi ng) is possible and some time explosion may possible	1. Fire proof system made available 2. Whole Process is operated by trained and qualified person. 3. During tapping entry of other person/worker is prohibited. 4. During the process of Heating & drying entry of other person/ worker is prohibited	a) Complete process is taken up in presence of shift in-charge and by his b) Even after if any worker get hurt then firstly first aid is given to him & then refer to Doctor/ Hospital for further treatment.

S. No.	OPERATION/ PROCESS EQUIPMENT/ AREAS	POSSIBLE HAZARDS	PRECAUTIONARY MEASURES IMPLEMENTED/EXISTING	MEASURES TO BE TAKEN IF MISHAP OCCURS.
04	Shifting of Ladle/moulds by crane and on Track /casted moulds	Serious injury may cause due to movement of moulds laddle by crane if mould are not fastened carefully	1. Laddle/ mould are placed where tapping is done and after tapping shifted to cooling place 2. Proper watches kept by shift In-charge during the process 3. Fastening & loosing of moulds from the crane is done by trained person under the guidance of shift in-charge. 4. Crane is not run till line clear is given.	q) The crane movement is don only after obtaining the line clearance b) If any injury may cause then after giving first aid to person/ worker refer for furthe treatmen to Doctor/Hospital
05.	Diesel Oil Transformer Oil, etc. Storage & Pumping to equipment	Fire hazard may possible if come in direct contact with fire.	A Fire proof system Made available like Foam extinguishers And hydrant System etc. keep Accessible. B. Stored in MS cylinder tank & kept away from any type of fire causing things.	Proper care to be taken in storing and keeping the drum of oil. Precautions should be adopted and taken as mentioned in chapter-8
06.	Welding Gas like Oxygen, Acetelen, LPG etc. And Liquid Oxygen & Argon in Builet	Fire hazard Caused by flames & leakage On inhalation Cause damage of Nosal system & lungs	1. Emergency Kit is kept ready and nearer to the Storage of cylinders 2. Fire Fighting Equipments powder/foam type extinguishers on vehicle and mounted on walls are kept readily available 3. Hydrant system provided At conspicuous places 4. Fire Fighting man is employed 5. precautions to ensure that cylinders are not allowed to clash with each other. 6. Cylinders are handled carefully without dropping or rolling 7. Sand bed cushion available for the purpose of unloading cylinders and point of transferring 8. Periodic inspection done to avoid accident of any kind.	Emergency kit is kept ready which consisting of:- 1.Tools for stopping leakage through storage tank/pipe line. 2.Self contained breathing apparatus Must be provided 3.Detector solution to detect percentage of leakage (available at site). 4. Installation ofInert gas (Nitrogen CO_2) equipments to take care of Fire hazards in the factory is being installed. 5 Hydrant point has been provided at the proximity of gas cylinders and also be kept Out side the factory too.

S. No.	OPERATION/ PROCESS EQUIPMENT/ AREAS	POSSIBLE HAZARDS	PRECAUTIONARY MEASURES IMPLEMENTED/ EXISTING	MEASURES TO BE TAKEN IF MISHAP OCCURS.
07.	Water Cooling Pond/cooling Tower	Drowning of a man possible. Burnt due to return-ing hot water may possible	A .Cooling pond should be fenced or covered. B.Workers must not be permitted for using the water pond for general utility. Railings are provided all round the tank	Drowned person should immediately be given first -Aid/CPR b) If any injury may cause th after giving first aid to person worker refer for furthe treatm to Doctor/Hospital
08.	Lab chemical like ammonia Sulpheric acid, HCL etc.	In case of breakage cause burns and damage to respiratory system	1. Proper care taken to store/ handle chemicals 2. Fire fighting equipments like extinguishers, sand bucket etc, keep available 3. First Aid box keep available at site.and First Aid personnel are employed.	Instructions are to be dis-played for the knowledge other man to take care of the situation in the event of occurance. (See Annexure `1')
09.	Control Rooms	Electrical shock Possible due to leakage.	A.Earth leakage Circuit breaker is installed. B. Shock precaution & treat ment chart are displayed. C. Operater should Be pro-vided with Insulated shoes. D. All instruments are properly Earthed. E. Electrification Layout & diagram is displayed.	In the event of electric leakage main supply should be immediately shut off. Shock Treatment & medical Aid shall be immediately provided.
10.	E.O.T. Crane	Hoist Rope Breakage possible.	A.No movement of Strange people in Crane bay will be Permitted. B. Frequent check of The rope and other Load bearing Material shall be Done. C. Light indication Movement of crane Shall be provided. D. Prescribed load Shall only be Allowed. E. Crane operator to Give alarm before Movement.	Weak rope shall be immediately replaced.

02. POWER PLANT DIVISION

S. No. (01)	OPERATION/ PROCESS EQUIPME-NT/AREAS (02)	HAZARDS IDENTIFICATION (03)	CONTROL MEASURES (IMPLEMENTED/EXISTING) (04)	MEASURESTO BE TAKEN (NORMALLY ADOPTED OR IF MISHAP/ HAZARDS OCCURS.) (05)
1.	FBC Boiler Turbo Generator	Leakage of CO gas. Fire hazards.	CO gas detector are installed to detect the leakage as it is poisonous gas. Due to leakage of oil or electrical short circuit.	Any case of poisoning CO gas will be given initiate first health treatment. The cause of CO leakage will be detected and eliminated/ rectified. The system will be shut down and will electrically disconnected till the complete remedy.
2.	Handling Storage and Feeding of Steam coal/ coal etc.	Fire hazards caused by flames if it come in direct contact with fire. (Coal, Sand & other Material dust)	1.Workers charging the material in the furnace are equippedwith Gloves, Nose Mask & proper equipments to Handle & feed the Coal and other material, also Fire proof dress & proper equipment to handle the scrap and material 2 Fire fighting equipments power/ foam type extinguishers on vehicle and mounted on walls are kept readily available. 3) Hydrant system provided at conspicuous places. 4) Precautions to ensure that storage is done of above maintained material are in proper way and at proper place away from electric installation.	a) Installation of inert gas (Nitrogen, Carbon Dioxide) equipments to take care of fire hazards in the factory area is being installed. b) Hydrant point has been provided at the proximity of gas cylinders, Husk and coal storage and are kept outside the main factory. c) All precautionary measures to be adopted and taken as mentioned in Chapter-8 d) Un burnt heap/stack will be removed and carry away from fired area.
3.	Leakage of steam /Ash (Hot) from Pipe Line/ Boiler/ Ash Silo	Leakage of Steam/Ash may cause superficial burn if victim directly come in contact	Emergency kit is kept ready which consisting of – a. Tools for stopping leakage through boiler/silo and pipe line. b. All the pipeline has covered with insulators/ piping. c. Detector solution to detect percentage of leakages (available at site).	a) Precautionary measure to be taken up as mentioned in Chapter-8. b) Ammonia tourch is used to find out the leakage. c) In the event of major leakage the production of steam /Ash Transfering to silo or to bulker will stopped and maintenance of leakage point may carry quickly.
4.	Control Rooms	Electrical shock possible due to -	a) Earth leakage circuit breaker is installed. b) Shock precaution and treatment chart are displayed. c) Operator should be provided with insulated shoes. d) All instruments are properly earthed. e) Electrification layout and diagram is displayed.	In the event of electric leakage main supply should be immediately shut off. Shock treatment and medical aid shall be immediately provided. Lightening Arrester Provided

S. No. (01)	OPERATION/ PROCESS EQUIPME-NT/AREAS (02)	HAZARDS IDENTIFICATION (03)	CONTROL MEASURES (IMPLEMENTED/EXISTING) (04)	MEASURES TO BE TAKEN (NORMALLY ADOPTED OR IF MISHAP/ HAZARDS OCCURS.) (05)
5.	Water cooling pond/ tower	Drowning of a man possible. Burnt due to returning hot water may possible.	a) Cooling pond should be fenced or covered. b) Must not be permitted for using the water pond for general utility. All workers are not permitted to the tank & hot water line. Railings are provided all round the tank. Victim are First Aided by trained person and then carried to Doctor.	Drowned person should immediately be given first aid. Even after, if any worker get hurt then firstly First Aid is given to him and then refer to Doctor/ Hospital for further treatment.
6.	Diesel Oil, TG Oil, Transformer oil etc.	Fire hazard may possible if come in direct contact of fire.	Fire proof system made available and fire fighting equipments like Foam Extinguishers and hydrant system etc. keep accessible.	Proper care is to be taken in storing and keeping the drum of oil. Precautions should be adopted and taken as mentioned in Chapter-8.
7.	Boiler, Dryer Generator, compressor, process tank/ Vat and other machines.	Hurt may possible if come in contact with any moving part.	All machines are compact and whole process is done under consistent watch of supervisors and by adopting all safety precaution and measures. All workers are not permitted to come nearer to the machines. Safety guards and railings are provided all round the machines. Victim are First Aided by trained person and then carried to Doctor.	Even after if any worker get hurt then First Aid is given to him and if hurt is serious then refer to the Doctor/ Hospital for further treatment and checkup.
8.	Handling of Acid and Chemical etc.	Hurt and minor injury may possible.	a) Workers are provided with gloves, shoes and proper equipments to handle the scrap at the time of unloading and charging to Vat/ Tank. b) Transferring of Caustic Soda from lorry to tank and then to reaction Vat is done by pumping and under direct supervision of Officer In-charge. c) Entry of other person is prohibited and proper watch is kept by Officer In-charge.	If any worker is hurt during the process – 1) Information is delivered to the Director/ Manager available in Factory. 2) First Aid is given to victim and if hurt is serious then refer to doctor/hospital for further treatment and checkup.
9.	Laboratory chemicals, Ammonia, Sulphuric Acid, HCl etc.	In case of breakage cause burns damage to respiratory system due to concentrated inhalation.	a) Proper care taken to store/ handle chemicals. b) Qualified and trained personnel are employed. c) First Aid Box available at site. d) Fire fighting equipments readily available at site.	Instruction Board to be displayed for the knowledge of other man to take care of the situation in the event of occurrence (as shown in Annexure-A)


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Annexure-XVI

FORM 21 (Annexure)
[prescribed under Rule(19)]
Health Register
(in respect of persons employed in occupation declared to be dangerous operation under section 87)
PRE-EMPLOYEMENT & PERIODIC MEDICAL EXAMINATION

Registration No : 604 **Date : 20-03-2024**

Name : ABHIJEET SHARMA | Age (Years): 27 | Gender : Male
Nature of Employment : | Employee No. : 2512
Date of Joining : | Last Medical Date :
Department : ADMIN | Designation : ADMIN
No. of Working Year : Previous Working : | Mobile No. :
ESIC Number : | Aadhar No. :

1. GENERAL EXAMINATION

HEIGHT : 169 cm	WEIGHT : 74 Kg	BMI : 25.91
CHEST INSPIRATION : 91 cm	EXPIRATION : 96 cm	BUILT : Average
THROAT : Normal	THYROID :	LYMPH NODES :
TOUNGE : Normal	TEETH : Normal	GUMS : Normal
TONSILS : Normal	ADDITIONAL FINDING IF ANY : Absent	

2. CARDIO-VASCULAR SYSTEM

PULSE : 80/min Regular	PERIPHERAL PULSE : Felt
BP : 123/86 mmHg	MURMUR IF ANY : Absent
HEART SOUND : Normal	ADDITIONAL FINDING IF ANY : Absent

3. RESPIRATORY SYSTEM

SHAPE OF CHEST : Normal	CHEST MOVEMENTS : Normal
TRACHEA : Normal	BREATH SOUNDS : Normal

4. GASTRO-INTESTINAL SYSTEM

LIVER : Not Palpabel	SPLEEN : Not Palpabel
ANY ABDOMINAL LUMP : Absent	

5. EXAMINATION OF EYE

EXTERNAL EXAMINATIN SQUINT : Normal	NYSTAGMUS : Normal
COLOUR VISION : Normal	FUNDUS : Normal
INDIVIDUAL COLOUR IDENTIFICATION : Normal	
DISTANT VISION (WITHOUT GLASSES)	**NEAR VISION (WITHOUT GLASSES)**
RIGHT : 6/6 LEFT : 6/6	RIGHT : N/6 LEFT : N/6
DISTANT VISION (WITH GLASSES)	**NEAR VISION (WITH GLASSES)**
RIGHT : LEFT :	RIGHT : 6/6 LEFT : 6/6

6. EXAMINATION EAR, NOSE & THROAT : EXTERNAL EXAMINATION :- Normal

7. GENITO URINARY SYSTEM

HERNIA : Absent	HYDROCELE / VERICOCELE : Absent	CRYPTORCHISISM : Absent
PHIMOSIS : Absent	VARICOSE VEIN : Absent	SIGNS OF STD : Absent
OTHER EXAMINATIN FOR FEMALES : MENSTRUAL HISTORY OBSTERIC HISTORY		
MENARCHE AT : YRS :	GRAVIDA :	PARA:
LMP :	MENSTRUL IRREGULARITY IF ANY :	

INVESTIGATION

8. LAB INVESTIGATION :

HEMOGRAM	LIPID PROFILE	HEPATIC PROFILE
HB : 13.9 gm %	Cholesterol : 141.0 mg/dl	Bilirubin : (Total) 0.25 mg %
TLC : 9500 cmm	Tryglyceride : 102.0 mg/dl	Bilirubin (Direct) : 0.10 mg %
DLC : P 70 L 28 E 01 M 01 B 00	HDL : 53.0 mg/dl	Bilirubin (Indirect) : 0.15 mg %
RBC : 5.2 million/cmm	LDL : 67.60 mg/dl	SGOT : 16.0 IU/L
Platelet : 258 lacs/cmm	VLDL : 20.40 mg/dl	SGPT : 24.0 IU/L
ESR : 05 mm/hr	CHO:HDL :	ALK PHOS 55.0 IU/L
Blood Group : O+ RH Type : Positive		
METABOLIC	**OTHER INVESTIGATION**	**URINE EXAMINATION**
B.Sugar (F) : 72.0 mg/dl	Anti HIV 1 & 2 :	Urine Albumin : Nil
B.Sugar (PP): 102.0 mg/dl	HBsAg :	Urine Sugar : Nil
Uric Acid : 3.7 mg/dl	Anti HCV :	Microscopy : Nil
Blood Urea : 20.0 mg/dl	Syphilis :	
SR CREAT : 0.69 mg/dl	THS :	
STOOL : mg/dl	WIDAL :	

9. OTHER INVESTIGATIONS :

a. **ECG** (In case of any abnormality further test should be carried out.) : Normal

b. **X ray chest** (In normal person once in 3 years, in case of any abnormality X ray can be done at shorter intervals.) : Normal

c. **Ultrasound whole abdomen** (In normal person once in 3 years, in case of any abnormality X ray can be done at shorter intervals.) : MILD FATTY LIVER. REST NIL SIGNIFICANT.

d. **Others** :

10. PULMONARY FUNCTION TESTS :

	FVC	FEC 1	FEC1/FVC
Predicted			
Measured			
% of Predicted	124	145	117

11. AUDIOMETRY EXAMINATION : Normal

THRESHHOLD IN dB	RIGHT	LEFT
AIR CONDUCTION	20	17
BONE CONDUCTION		
SPEECH		

12. MEDICAL EXAMINATION OF CANTEEN STAFF :

13. Detail of other specific medical examination carried out as mentioned in the respective in the respective schedules or rule 107 of CG factories rules 1962.

Remarks : MILD FATTY LIVER. REST NIL SIGNIFICANT.

Dr. PAVAN K. GAUTAM
M.D. (PHYSICIAN)
Reg. No.-CGMC/5685

Signature (with date) of factory medical officer

Signature (with date) of certifying surgeon





HIRA POWER & STEELS

Environment Policy-Hira Power and Steel Limited

HPSL believe that businesses are responsible for achieving good environment practices and operating in a sustainable manner.

We are therefore committed to reducing our environmental impact and continually improving our environmental performance as an integral and fundamental part of our business strategy and operating methods.

It is our priority to encourage our customers, suppliers and all business associates to do the same. Not only is this sound commercial sense for all; it is also a matter of delivering on our duty of care towards future generations.

Our policy is to

- Wholly support and comply with or exceed the requirements of current environmental legislation and code of practice.
- Minimize our waste and then reuse or recycle as much of it as possible.
- Minimize energy and water usage in our building, vehicles and processes in order to conserve supplies, and minimize our consumption of natural resources, especially where they are non-renewal.
- Operate and maintain company vehicles(where appropriate) with due regard to environmental issues as far as reasonably practical and encourages the use of alternative means of transport and car sharing as appropriate.
- Apply the principal of continuous improvement in respect of air, water, noise and light pollution from our premises and reduce and impacts from our operations on the environment and encourage others to do the same.
- As far as possible purchase product and services that do the least damages to the environment and encourage others to do the same.
- Assess the environmental impact of any new processes or products we intend to introduce in advance.

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

Executive Director

HIRA POWER & STEELS

EXTRACT FROM THE MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS OF M/S HIRA POWER AND STEELS LIMITED HELD ON 22.03.2024 AT THE REGISTERED OFFICE OF THE COMPANY AT KHASRA NO. 511/1, 512/2, URLA INDUSTRIAL AREA, RAIPUR (C.G)

APPROVAL OF ENVIRONMENT POLICY:

A draft Environment Policy of the Company with an aim to reduce our environmental impact and continually improving our environmental performance as an integral and fundamental part for our business strategy and operational methods has been placed before the Board.

The Board after detailed deliberations approved the Environment Policy and passed the following resolution:

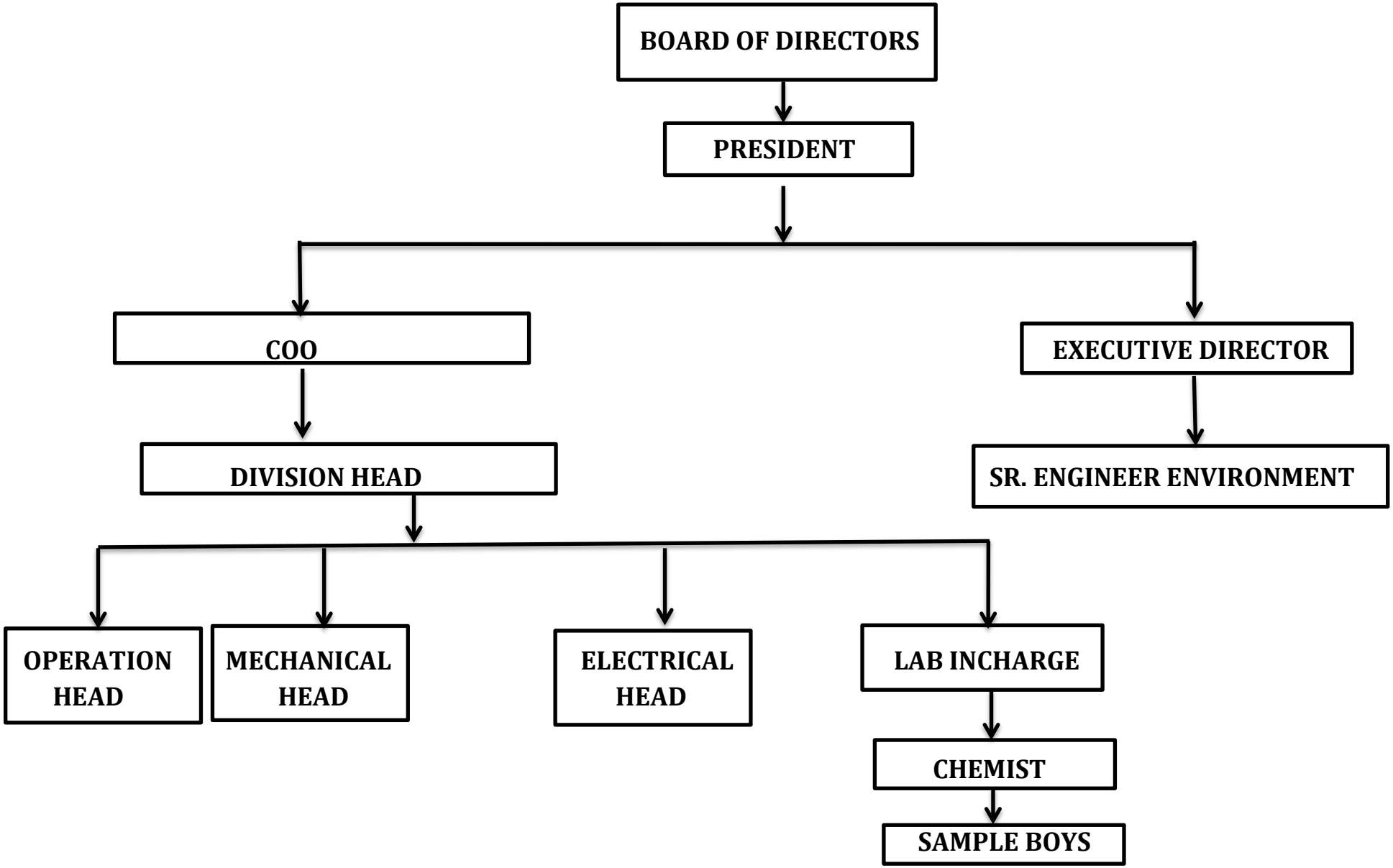
"RESOLVED THAT the Environment Policy with an aim to reduce our environmental impact and continually improving our environmental performance as an integral and fundamental part for our business strategy and operational methods of the Company as per the draft placed before the Board be and is hereby approved to be adopted by the Company."

For, HIRA POWER AND STEELS LIMITED

DIRECTOR/ AUTHORISED SIGNATORY

HIRA POWER AND STEELS LIMITED (HPSL)

ORGANISATION CHART OF ENVIRONMENT MANAGEMENT CELL



देश

उवाच

"सर्वाधिक गांजा अगर किसी राज्य में पाया जाता है, तो वो पंजाब है, जिसे आमतौर पर उड़ता पंजाब भी कहा जाता है। वहीं, अब बेंगलुरु भी कुछ इसी तरह की दुश्वारियों से जूझ रहा है।' उन्होंने कहा, 'नशीले पदार्थों के खतरों के संदर्भ में अधिकांश सवाल विधानसभा में पूछे जा चुके हैं:- **जी. परमेश्वर, गृह मंत्री कर्नाटक**





	तापमान	अधिकतम	न्यूनतम
	दिल्ली	20.0	06.8
	मुंबई	32.0	19.2
	कोलकाता	24.5	14.0
	चेन्नई	32.3	21.4

कांग्रेस का दावा-मोदी ना पहले ओबीसी थे और ना आज

नई दिल्ली, 9 फरवरी (देशबन्धु)। कांग्रेस ने प्रधानमंत्री नरेंद्र मोदी द्वारा खुद को ओबीसी बताए जाने पर कहा कि मोदी समाज ना पहले ओबीसी था और ना आज है। कांग्रेस ने शुक्रवार को खुलासा करते हुए कहा कि 1 जनवरी, 2002 को गुजरात सरकार द्वारा आरक्षण के लिए जोड़ी गई जातियों के अधिसूचना में कहीं भी मोदी समाज का जिक्र नहीं है। प्रधानमंत्री नरेंद्र मोदी अपनी जाति के नाम पर देश को गुमराह कर रहे हैं। मोदी ना पहले ओबीसी थे और ना आज हैं। मोदी जी सुपर अपर कास्ट से हैं। नई दिल्ली स्थित कांग्रेस मुख्यालय में प्रेस वार्ता करते हुए गुजरात कांग्रेस के प्रदेश अध्यक्ष व राज्य सभा सांसद शक्ति सिंह गोहिल ने कहा कि भाजपा बार-बार झूठ फैलाती है। लेकिन मोदी जी जन्म से ओबीसी नहीं हैं, यह सच्चाई है। गुजरात सरकार की अधिसूचना दिखाकर भाजपा पर



पलटवार करते हुए गोहिल ने कहा कि इस अधिसूचना की तारीख 1 जनवरी, 2002 है, जब गुजरात के मुख्यमंत्री स्वयं नरेंद्र मोदी थे। अधिसूचना के अनुसार नई जातियां जोड़ी गईं, उनमें घांची मुस्लिम, तेली, मोढ़ घांची, तेली साहू, तेली राठौर थीं। उन्होंने प्रश्न किया कि अगर 1999 में ये जातियां जोड़ी गईं थीं, तो गुजरात के मुख्यमंत्री ने 1 जनवरी, 2002 को यह अधिसूचना क्यों जारी की। गोहिल ने यह भी कहा कि 1 जनवरी, 2002 को जारी किए गए इस अधिसूचना में कहीं भी मोदी समाज का जिक्र नहीं है। भगवद्गोमण्डल के हिसाब से भी मोदी समाज पिछड़ी जाति में नहीं आता है। मोदी ना पहले ओबीसी थे और ना आज हैं।शक्ति सिंह गोहिल ने तथ्यों का हवाला देते हुए कहा कि मोदी जी ने प्रधानमंत्री के खवाब देखने से पहले कभी नहीं कहा कि मैं घांची हूँ या पिछड़ी जाति से आता हूँ। गुजरात में मोदी के मुख्यमंत्री बनने के बाद मुंबई में मोदी समाज की बैठक में कहा गया कि हमारी सुपर अपर कास्ट मोदी से पहली बार मुख्यमंत्री बना है। इसे लेकर मैगजीन में बाकायदा विज्ञापन दिए गए, जिन्हें तत्कालीन मुख्यमंत्री नरेन्द्र मोदी ने कभी नहीं नकारा। राहुल गांधी के खिलाफ केस करने वाले पूर्णेश मोदी ने सूरत कोर्ट में दिए दस्तावेज में स्पष्ट कहा था कि मोदी समाज के लोग मोढ़ वणिक (व्यापारी) हैं। वो सुपर अपर कास्ट व्यापारी वर्ग से हैं।

शक्ति सिंह गोहिल ने कहा कि पीएम मोदी अपनी जाति के नाम पर देश को गुमराह कर रहे हैं। गोहिल ने प्रधानमंत्री मोदी से सवाल पूछे कि अगर मोदी सबसे बड़े ओबीसी हैं तो अपने नाम के आगे मोदी घांची, मोदी तेली क्यों नहीं लिखते। 1 जनवरी, 2002 को जारी किए गए नोटिफिकेशन में कहीं भी मोदी समाज का जिक्र नहीं है। ऐसे में ये प्रधानमंत्री मोदी पर कैसे लागू होता है।

इस अधिसूचना की तारीख 1 जनवरी, 2002 है, जब गुजरात के मुख्यमंत्री स्वयं नरेंद्र मोदी थे। अधिसूचना के अनुसार नई जातियां जोड़ी गईं, उनमें घांची मुस्लिम, तेली, मोढ़ घांची, तेली साहू, तेली राठौर थीं। उन्होंने प्रश्न किया कि अगर 1999 में ये जातियां जोड़ी गईं थीं :-शक्ति सिंह गोहिल

डिप्टी सीएम पद को खत्म करने की मांग को लेकर सुप्रीम कोर्ट में याचिका दायर

नई दिल्ली, 9 फरवरी (एजेंसियां)। विभिन्न राज्यों में नियुक्त हुए उप-मुख्यमंत्रियों की नियुक्ति के विरोध में सुप्रीम कोर्ट में एक जनहित याचिका दायर की गई है। याचिका में कहा गया है कि संबंधित राज्य सरकारों ने भारत के संविधान और आर्टिकल 164 के प्रावधानों की अनदेखी करते हुए विभिन्न राज्यों में उपमुख्यमंत्रियों की नियुक्ति की है। ध्यान दें, भारतीय संविधान और संविधान का अनुच्छेद 164 में सिर्फ मुख्यमंत्री की नियुक्ति का ही प्रावधान है। अधिवक्ता मोहन लाल शर्मा द्वारा दाखिल की गई याचिका में स्पष्ट कहा गया है, 'अगर कथित उपमुख्यमंत्री की नियुक्ति की जाती है, तो इसका नागरिक और राज्य की जनता से कोई लेना-देना नहीं होगा।' याचिका में कहा गया है कि उपमुख्यमंत्रियों की नियुक्ति से बड़े पैमाने पर जनता में भ्रम पैदा होता है और राजनीतिक दलों द्वारा काल्पनिक विधान बनाकर गलत और अवैध उदाहरण स्थापित किए जा रहे हैं। उपमुख्यमंत्री कोई भी स्वतंत्र निर्णय नहीं ले सकता है। हालांकि, उपमुख्यमंत्री को मुख्यमंत्री के बराबर ही दिखाया जाता है। इसमें केंद्र सरकार से मांग की गई है कि वह राज्य के राज्यपालों से देश में कथित उपमुख्यमंत्रियों को शपथ दिलाने वाली ऐसी असंवैधानिक नियुक्तियों के खिलाफ कदम उठाए। 12 फरवरी को मुख्य न्यायाधीश डीवाई चंद्रचूड़ की अध्यक्षता वाली पीठ इस याचिका पर सुनवाई करेगी।



झारखंड हाईकोर्ट ने अमित शाह पर राहुल गांधी की टिप्पणी मामले में सुनवाई के बाद फैसला सुरक्षित रखा

रांची। झारखंड हाईकोर्ट ने कांग्रेस नेता राहुल गांधी की ओर से भाजपा के तत्कालीन राष्ट्रीय अध्यक्ष अमित शाह के खिलाफ की गई कथित तौर पर अपमानजनक टिप्पणी से जुड़े मामले में सुनवाई के बाद फैसला सुरक्षित रख लिया है। भाजपा नेता नवीन झा की ओर से कांग्रेस के पूर्व राष्ट्रीय अध्यक्ष राहुल गांधी के खिलाफ रांची सिविल कोर्ट में शिकायतवाद दर्ज कराया गया था। इससे पहले नवीन झा ने लीगल नोटिस देकर राहुल गांधी से उनके द्वारा अमित शाह के खिलाफ की गई टिप्पणी पर माफी मांगने को कहा था। राहुल गांधी द्वारा माफी नहीं मांगे जाने पर उन्होंने रांची सिविल कोर्ट में शिकायतवाद दर्ज कराया था। दरअसल, यह मामला राहुल गांधी द्वारा वर्ष 2018 में कांग्रेस के अधिवेशन में भाजपा के तत्कालीन राष्ट्रीय अध्यक्ष अमित शाह के खिलाफ टिप्पणी करने से जुड़ा है, जिसमें राहुल गांधी ने कहा था कि कांग्रेस में कोई हत्या राष्ट्रीय अध्यक्ष नहीं बन सकता है। कांग्रेसजन किसी हत्यारा को राष्ट्रीय अध्यक्ष स्वीकार नहीं कर सकते हैं। यह भाजपा में ही पॉसिबल है।

संसद से

परीक्षाओं में धांधली रोकने के विधेयक पर संसद की मुहर

नई दिल्ली, 9 फरवरी (एजेंसियां)। सरकारी सेवाओं की भर्ती परीक्षाओं को अनुचित साधनों से प्रभावित करने वाले अपराधियों के विरुद्ध कठोर दंडात्मक प्रावधानों वाले लोक परीक्षा (अनुचित साधनों का निवारण) विधेयक, 224 पर शुक्रवार को संसद की मुहर लग गयी। राज्यसभा में इस विधेयक को संक्षिप्त चर्चा के बाद ध्वनिमत से पारित किया गया जबकि लोकसभा इसे पहले ही पारित कर चुकी है। कार्मिक, जनशिकायत एवं पेंशन मामलों के राज्यमंत्री (स्वतंत्र प्रभार) डॉ. जितेन्द्र सिंह ने सदन में संक्षिप्त चर्चा के बाद कहा कि इस विधेयक से उच्च परीक्षाओं की तैयारी करने वाले युवाओं के हितों की रक्षा होगी और नियत समय के भीतर परिणाम आ सकेंगे। उन्होंने कहा कि सरकार युवाओं पर भरोसा करती है और इसलिए परीक्षा प्रक्रियाओं को सरल बनाया जा रहा है। सरकार ने कई सरकारी नौकरियों में साक्षात्कार समाप्त किया है जिससे भाई-भतीजावाद, भेदभाव और पक्षपात खत्म हुआ है। उन्होंने कहा कि विकसित भारत की मजबूत नींव रखने में यह विधेयक मदद करेगा। यह विधेयक सहकारी संघवाद का प्रतीक है। केंद्र किसी भी राज्य को इसे अपनाने के लिए मजबूर नहीं करेगा। किसी भी संवेदित अपराध की जांच उच्च अधिकारी करेगा। जांच में प्रौद्योगिकी का प्रयोग होगा।

जम्मू कश्मीर में आरक्षण से जुड़े विधेयक राज्यसभा से पारित

नई दिल्ली। राज्यसभा ने शुक्रवार को जम्मू-कश्मीर में अन्य पिछड़ा वर्ग (ओबीसी), अनुसूचित जातियों (एससी) और अनुसूचित जनजातियों (एसटी) से जुड़े तीन विधेयकों को ध्वनिमत से पारित कर दिया। केन्द्रीय गृह राज्य मंत्री नित्यानंद राय ने ओबीसी को स्थानीय निकायों में आरक्षण दिये जाने से संबंधित जम्मू-कश्मीर स्थानीय निकाय विधियां (संशोधन) विधेयक 224 पर हुयी चर्चा का जवाब दिया। इसके साथ ही, सामाजिक न्याय एवं अधिकारिता मंत्री वीरेन्द्र कुमार ने संविधान (जम्मू-कश्मीर) अनुसूचित जातियां आदेश (संशोधन) विधेयक, 224 और जनजाति मामलों के मंत्री अर्जुन मुंडा ने 'संविधान (जम्मू-कश्मीर) अनुसूचित जनजातियां आदेश (संशोधन) विधेयक, 224 पर चर्चा का उत्तर दिया। इसके बाद इन तीनों विधेयकों को सदन ने ध्वनिमत से पारित कर दिया। श्री राय ने चर्चा का जवाब देते हुए कहा कि धारा 37 हटने के बाद जम्मू-कश्मीर राष्ट्र की मुख्य धारा में शामिल हो गया और इसके बाद से सरकार वहां के सभी वर्गों के लोगों को देश के संविधान के अनुसार शेष देश में हासिल अधिकार और अवसर सुनिश्चित कराने की दिशा में काम कर रही है। उन्होंने कहा कि जम्मू-कश्मीर में ओबीसी को आरक्षण देने के लिए लाया गया यह विधेयक उसी कड़ी का हिस्सा है।

नाकामयाबी छुपाने को श्वेतपत्र लाई मोदी सरकार: गोगोई

नई दिल्ली। कांग्रेस नेता गौरव गोगोई ने शुक्रवार को कहा कि मोदी सरकार नाकामयाबी छुपाने के लिए आर्थिक श्वेत पत्र लाई है और वह प्रवर्तन निदेशालय-ईडी का इस्तेमाल सिर्फ विपक्ष के नेताओं को भारतीय जनता पार्टी में शामिल करने के लिए कर रही है। श्री गोगोई ने लोकसभा में नियम 342 के तहत लाए आर्थिक श्वेत प्रस्तुत प्रस्ताव पर चर्चा में हिस्सा लेते हुए कहा कि यह प्रस्ताव अपनी नाकामयाबी छुपाने का मोदी सरकार का एक सोचा समझा प्रस्ताव है लेकिन देश की जनता असलियत समझती है इसलिए इस तरह के प्रयास का कोई महत्व नहीं है। उन्होंने कहा कि इसी सरकार में कुछ महीने पहले देश के सबसे प्रतिष्ठित नियंत्रक और महालेखा परीक्षक-कैग ने द्वारका एक्सप्रेसवे में भ्रष्टाचार की बात कही थी लेकिन उस घोटाले को भी दबा दिया गया है।

सार संक्षेप

आंध्र सीएम ने पीएम मोदी से की मुलाकात, लंबित धनराशि जारी करने की मांग

अमरावती/नई दिल्ली। आंध्र प्रदेश के मुख्यमंत्री वाई.एस. जगन मोहन रेड्डी ने शुक्रवार को संसद में उनके चैंबर में प्रधानमंत्री नरेंद्र मोदी से मुलाकात की। सीएम ने पीएम मोदी से राज्य से संबंधित कई परियोजनाओं में तेजी लाने का अनुरोध किया है। उन्होंने बताया कि वित्त मंत्रालय पहले ही पोलावरम परियोजना पर कंपोनेंट वाइज एक्सपेंडिचर को हटाने और इसके पहले चरण को पूरा करने के लिए 12,911 करोड़ रुपए जारी करने पर सहमत हो चुका है। उन्होंने उनसे दो लंबित परियोजनाओं के लिए कैबिनेट से मंजूरी देने का आग्रह किया है।

तेलकोई से मौजूदा विधायक प्रेमानंद नायक ने बीजद छोड़ा

भुवनेश्वर। सत्तारूढ़ बीजू जनता दल (बीजद) को झटका देते हुए पूर्व मंत्री और तेलकोई से मौजूदा विधायक प्रेमानंद नायक ने पार्टी की प्राथमिक सदस्यता से इस्तीफा दे दिया है। नायक ने यहां बीजद अध्यक्ष और मुख्यमंत्री नवीन पटनायक को संबोधित एक पत्र में लिखा, 'मैं 'बीजू जनता दल' की प्राथमिक सदस्यता से इस्तीफा दे रहा हूं। आपके साथ बिताया गया बहुमूल्य समय मुझे अपने निर्वाचन क्षेत्र की बेहतर सेवा करने के लिए प्रेरित करेगा।' नायक ने शुक्रवार को मीडिया से बात करते हुए कहा कि पिछले कुछ वर्षों से उन्हें पार्टी में दरकिनार किया जा रहा था। हालांकि उन्होंने पिछले साल अक्टूबर में ईमेल के जरिए बीजद अध्यक्ष को अपना इस्तीफा भेजा था, लेकिन पार्टी से कोई भी जानकारी पर चर्चा करने के लिए उनके पास नहीं पहुंचा। नायक ने कहा कि पहले वह अपने मुद्दों के साथ-साथ अपने निर्वाचन क्षेत्र से संबंधित विभिन्न चिंताओं पर चर्चा करने के लिए पार्टी अध्यक्ष से मिल सकते थे, हालांकि, 219 के बाद पटनायक पार्टी विधायकों के लिए दुर्गम हो गए।



बंगलादेश के विदेश मंत्री ने मुर्मु से मुलाकात की

नई दिल्ली, 9 फरवरी (एजेंसियां)। बंगलादेश के विदेश मंत्री डॉ. हसन महमूद ने राष्ट्रपति भवन में राष्ट्रपति द्रौपदी मुर्मु से मुलाकात की। राष्ट्रपति भवन की एक विज्ञप्ति के अनुसार डॉ. महमूद का स्वागत करते हुए, राष्ट्रपति ने प्रधानमंत्री शेख हसीना को बंगलादेश के प्रधानमंत्री के रूप में उनके अभूतपूर्व लगातार चौथे कार्यकाल के लिए शुभकामनाएं दीं। श्रीमती मुर्मु ने विश्वास जताया कि सुश्री शेख हसीना के नेतृत्व में बंगलादेश प्रगति और समृद्धि के नए मील के पत्थर स्थापित करेगा। राष्ट्रपति ने कहा कि एक मजबूत, स्थिर और समृद्ध बंगलादेश भारत के हित में है और संबंधों को आगे बढ़ता देखने के लिए दोनों पक्षों में अपार राजनीतिक इच्छाशक्ति है। राष्ट्रपति ने सीमा और सुरक्षा, व्यापार, कनेक्टिविटी, बिजली, बुनियादी ढांचे, लोगों के बीच मेल-मिलाप आदि जैसे द्विपक्षीय सहयोग के लगभग सभी क्षेत्रों में हुई प्रगति पर संतोष व्यक्त किया।

सच में कितना बदल गया है कश्मीर

मासूमों की मौत पर कश्मीरी गुस्साए, अब हर मौत पर उबल रहा कश्मीर

जम्मू, 9 फरवरी (देशबन्धु)। कश्मीर अब बदल गया है। मासूमों की मौत पर खामोश रहने वाले कश्मीरी अब अपने गुस्से और रोष को जाहिर करने लगे हैं। तीन साल पहले जिन कश्मीरियों ने कभी लाल चौक में मामबत्तियां जला कर सीडीएस जनरल विपिन रावत को श्रद्धांजलि देने की हिम्मत दिखाई थी अब वे आतंकियों से सीधे तो नहीं भिड़ पा रहे पर मासूमों की मौत पर गुस्सा प्रकट करने कैंडल मार्च का सहारा जरूर ले रहे हैं। उन्हें गांधीगिरी का रास्ता ही भा रहा है। कश्मीर के पुलवामा और शोपियां जिले में आतंकवाद के खिलाफ नागरिकों और व्यापार मंडल ने कैंडल मार्च निकाला। लोगों ने कहा कि श्रीनगर में दो निर्दोष लोगों की हत्या कर दी गई। वे तो पंजाब से सिर्फ रोजगार की तलाश में कश्मीर आए थे। उनका क्या कसूर था, जो उनकी हत्या कर दी गई। इस तरह बेगुनाहों का खून बहाकर आखिर आतंकियों का कभी भला नहीं हो पाएगा। उन्होंने कहा कि वे और हिंसा बर्दाश्त नहीं कर सकते। अब वे कश्मीर में शांति चाहते हैं। बुधवार को श्रीनगर में आतंकवादियों द्वारा पंजाब के दो निवासियों की हत्या की निंदा करने और उनके परिवारों के साथ एकजुटता व्यक्त करने के लिए, पूरे कश्मीर में कई स्थानों पर कैंडललाइट मार्च आयोजित किए गए। नागरिक समाज के सदस्य, व्यापारी महासंघ और बारामुला के नागरिक कल



देर रात को एकत्र हुए और कल श्रीनगर में दो निर्दोष नागरिकों की हत्या की निंदा करते हुए कैंडललाइट मार्च निकाला। मार्च में लोगों की भारी भागीदारी देखी गई, प्रतिभागियों ने मोमबत्तियां पकड़ रखी थीं और मार्च मुख्य चौक से नानक भवन तक गुजरा, और लक्षित हत्याओं के निर्दोष नागरिकों के परिवारों के प्रति अपनी सहानुभूति व्यक्त की।

दृढ़ निश्चय के साथ, प्रतिभागियों ने अधिकारियों से इस घृणित कृत्य के लिए जिम्मेदार अपराधियों की शीघ्रता और लगन से पहचान करने और यह सुनिश्चित करने का आह्वान किया कि उन्हें कानून की पूरी सीमा के तहत जवाबदेह ठहराया जाए।

'हम' मोदी जी के साथ थें मोदी जी के साथ हैं और आगे भी साथ रहेगा: जीतनराम मांझी

पटना, 9 फरवरी (देशबन्धु)। हिन्दुस्तानी आवाम मोर्चा (HAM) के संरक्षक व बिहार के पूर्व सीएम जीतनराम मांझी ने अपनी पार्टी हम को लेकर लगाये जा रहे तमाम कयासों पर फुल स्टॉप लगा दिया है। अब मांझी ने साफ तौर पर कहा है कि उनकी पार्टी हम पीएम मोदी जी के साथ थें..पीएम मोदी जी के साथ हैं और आगे भी पीएम मोदी जी के साथ रहेगा।



■ महागठबंधन की ओर से उन्हें मुख्यमंत्री पद का ऑफर मिला था जिसे हमने ठुकरा दिया था

बता दें कि 28 जनवरी को बिहार में एनडीए की नई सरकार के गठन के बाद हम पार्टी के राष्ट्रीय अध्यक्ष व उनके पुत्र संतोष मांझी को मंत्री बनाया गया था। लेकिन जीतनराम मांझी दो मंत्री पद को मांग कर रहे थे। मांझी का कहना था कि एक रोटी से पेट नहीं भरता दो या तीन रोटी चाहिए। कम से कम दो रोटी तो चाहिए ही।

उन्होंने यह भी कहा था कि महागठबंधन की ओर से उन्हें मुख्यमंत्री पद का ऑफर मिला था जिसे हमने ठुकरा दिया था। इसलिए हमे कम से कम दो मंत्री पद मिलना चाहिए। ऐसा नहीं हुआ तो अन्याय होगा।

उनके इस बयान के बाद बिहार की सियासत तेज हो गयी है। जीतनराम मांझी भी इन दिनों काफी सुर्खियों में बने हुए थे। इस बात की चर्चा होनी शुरू हो गयी कि एक मंत्री पद मिलने से मांझी नाराज हैं और यही कारण है कि वो कम से कम दो मंत्री पद की मांग कर रहे हैं। मांझी के इस बयान के बाद मांझी की हम पार्टी को लेकर कई कयास लगाया जाने लगा। बिहार की राजनीतिक गलियारों में जो कयास लगाये जा रहे थे उस पर अब जीतनराम मांझी ने विराम लगा दिया है। मांझी ने कह दिया है कि मेरे लिए कोई सत्ता की कुर्सी मायने नहीं रखती। बस गरीबों, मजलूमो, दबे-कुचलों के हक़ और हक़क़ुक की आवाज उठती रहे उनका काम हो यही काफी है।

फ्लोर टेस्ट से ठीक पहले बुलाई गई जेडीयू विधानमंडल दल की बैठक

पटना, 9 फरवरी (देशबन्धु)। आगामी 12 फरवरी को बिहार की नई सरकार को विधानसभा में बहुमत साबित करना है लेकिन फ्लोर टेस्ट से पहले बिहार में बड़े खेल के दावे किए जा रहे हैं। तमाम तरह के कयासों के बीच मुख्यमंत्री नीतीश कुमार ने जेडीयू विधानमंडल दल की बैठक बुला ली है। इस बैठक में पार्टी के तमाम विधायक और विधान पार्षद को मौजूद रहने का निर्देश दिया गया है। दरअसल, बिहार की सत्ता से बेदखल होने के बाद आरजेडी और कांग्रेस लगातार दावा कर रहे हैं कि नीतीश सरकार फ्लोर टेस्ट में सफल नहीं हो सकेंगी। कांग्रेस ने पार्टी में टूट के डर से अपने सभी विधायकों को हैदराबाद शिफ्ट कर दिया है तो बीजेपी फ्लोर टेस्ट से पहले



■ 12 फरवरी को बिहार की नई सरकार को विधानसभा में बहुमत साबित करना है

अपने विधायकों को बोधगया शिफ्ट करने जा रही है। जेडीयू ने भी अपने विधायकों को एकजुट रखने की तैयारी की है। तमाम सियासी कयासों के बीच मुख्यमंत्री नीतीश कुमार ने फ्लोर टेस्ट से ठीक पहले जेडीयू विधानमंडल दल की बैठक बुला ली है। पार्टी के सभी विधायक और विधान पार्षद को बैठक में शामिल होने का निर्देश दिया गया है। आगामी 11 फरवरी को मंत्री विजय कुमार चौधरी के आवास पर विधानमंडल दल की बैठक आयोजित की जाएगी। जिसमें फ्लोर टेस्ट और और बजट सत्र को लेकर मुख्यमंत्री विधायकों को गुरु मंत्र देंगे।

बता दें कि बिहार में नई सरकार के गठन के बाद से ही फ्लोर टेस्ट के दिन बड़े खेला की बात कही जा रही है।

कार्यालय कार्यपालन अभियंता लोक निर्माण विभाग वि/यां संभाग रायपुर (छ.ग.)

जाप क्रमांक 753/ब.ले.लि. रायपुर, दिनांक 08/02/2024

शुद्धि पत्र

निविदा सूचना क्रमांक 516/NIT-21/2023-2024/ब.ले.लि. दिनांक 31/01/2024 में निम्नानुसार संशोधन किया जाता है :-

1) NIT-21/2023-2024 को अपिहार्य कारणों से निरस्त किया जाता है।

जी नं-07474

कार्यपालन अभियंता
लो.नि.वि.वि./यां.संभाग
रायपुर (छ.ग.)

जी नं-07693

कार्यालय कार्यपालन अभियंता, लोक स्वास्थ्य यांत्रिकी खण्ड, गरियाबंद छत्तीसगढ़

eegar-phe-cg@nic.in

'रुचि की अभिव्यक्ति' (EoI)

एकीकृत पंजीयन प्रणाली अंतर्गत सक्षम ठेकेदारों से प्रपत्र 'बी' में आईटम दर पर गरियाबंद जिले के विभिन्न विकासखण्डों में जल जीवन मिशन अंतर्गत वॉल पेन्टिंग/वॉल राईटिंग एवं कला जत्था, कला मण्डली, नाचा दल एवं उनसे संबंधित कार्य हेतु आनेवाईन 'रुचि की अभिव्यक्ति (EoI) आमंत्रित की जाती है-

वि.सू.क./ दिनांक	सिस्टम विविदा क्र.	कार्य का विवरण	अनुमानित लागत (रु. लाख में)
1031/ 08.02.2024	152710	गरियाबंद के विभिन्न 151 ग्रामों में वॉल पेन्टिंग/ वॉल राईटिंग एवं उनसे संबंधित कार्य।	9.38
1032/ 08.02.2024	152711	मैनपुर के विभिन्न 168 ग्रामों में वॉल पेन्टिंग/ वॉल राईटिंग एवं उनसे संबंधित कार्य।	10.43
1033/ 08.02.2024	152712	देवभोग के विभिन्न 93 ग्रामों में वॉल पेन्टिंग/ वॉल राईटिंग एवं उनसे संबंधित कार्य।	5.78
1034/ 08 02 2024	152713	छुरा के विभिन्न 157 ग्रामो में वॉल पेन्टिंग/वॉल राईटिंग एवं उनसे संबंधित कार्य।	9.75
1035/ 08 02 2024	152714	फिंगेश्वर के विभिन्न 97 ग्रामों में वॉल पेन्टिंग/ वॉल राईटिंग एवं उनसे संबंधित कार्य।	6.02
1036/ 08.02.2024	152715	मैनपुर के विभिन्न 168 ग्रामों में कला जत्था / कला मण्डली /नाचा दल एवं उनसे संबंधित कार्य।	8.32
1037/ 08.02.2024	152716	गरियाबंद के विभिन्न 151 ग्रामों में कला जत्था/ कला मण्डली / नाचा दल एवं उनसे संबंधित कार्य।	7.47
1038/ 08.02.2024	152717	फिंगेश्वर के विभिन्न 97 ग्रामों में कला जत्था/कला मण्डली/नाचा दल एवं उनसे संबंधित कार्य।	4.80
1039/ 08.02.2024	152718	छुरा के विभिन्न 148 ग्रामों में कला जत्था/कला मण्डली/नाचा दल एवं उनसे संबंधित कार्य।	7.33

नोट- उपरोक्त कार्यों की निविदा की सामान्य शर्तें, धरोहर राशि, विस्तृत निविदा विज्ञप्ति, निविदा दस्तावेज व अन्य जानकारी ई-प्रोक्योरमेंट वेबपोर्टल http://eproc.cgstate.gov.in दिए 10.02.2024 से देखी जा सकती है तथा बिड सबमिशन की तिथि दिनांक 15.02.2024 है।

कार्यपालन अभियंता
लोक स्वास्थ्य यांत्रिकी खण्ड,
गरियाबंद (छ.ग.)

जी-07681

भौतिक कब्जे की सूचना

ICICI Bank

शाखा कार्यालय: आईसीआईसीआई बैंक लिमिटेड, सैंक्चुअरी बिल्डिंग, चौथी मंजिल, 229C, एजेसी बोस रोड, पोस्टकोड- 700020, सीएजीएम नं: L65190GJ1994PLC021012, www.icicibank.com

जबकि

आईसाइसाईसी बैंक लिमिटेड के वित्तीय परिसंपत्तियों के प्रतिभूतिकरण एवं पुनर्निर्माण तथा प्रतिभूति हित प्रवर्तन अधिनियम, 2002 के अंतर्गत आईसीआईसीआई बैंक लिमिटेड के प्राधिकृत अधिकारी के रूप में तथा प्रतिभूति हित (प्रवर्तन) नियमावली, 2002 के नियम 3 के साथ पठित धारा 13(12) के अधीन प्रदत्त शक्तियों का प्रयोग करते हुए नीचे वर्णित कर्जदारों को मांग सूचनाएँ निर्गमित की थीं, जिसमें उक्त सूचना की प्राप्ति की तिथि से 60 दिनों के अंदर सूचना में वर्णित राशि को प्रतिभुगतान करने को कहा गया था।

कर्जदार/सह-कर्जदार/जमानतदार चूंकि का प्रतिभुगतान करने में विफल रहे हैं, अतएव एतद् द्वारा कर्जदार तथा जनसाधारण को सूचित किया जाता है कि अधोहस्ताक्षरकर्ता द्वारा भौतिक अधिग्रहण किया गया है जो कि उक्त अधिनियम की धारा 13(4) के सहत नियम 8 में दर्शाया गया है। संपत्ति तथा अग्रिहरण की तिथि नीचे दर्शाई गई है। एतद् द्वारा विशेष रूप से कर्जदार एवं जनसाधारण को संपत्ति के संव्यवहार नहीं करने के लिए सचेत किया जाता है तथा संपत्ति के साथ कोई भी संव्यवहार इसमें वर्णित राशि तथा उस पर आगे ब्याज हेतु आईसीआईसीआई बैंक लिमिटेड के प्रभार के अधीन होगा।

क्र. सं.	कर्जदार/ सह-कर्जदार का नाम/ ऋण खाता क्र.	संपत्ति का विवरण/ भौतिक कब्जे की तिथि	डिमांड नोटिस की तिथि/ हिताई नोटिस में राशि (रु.)	शाखा का नाम
1.	भंजय झा/ किरण झा/ मकान नंबर 319, सीनी हाउसिंग बोर्ड कॉलोनी, पो दोछड़ी कलाँ, थाना सिमानरभा दोछड़ी कलां, रायपुर छत्तीसगढ़, रायपुर- 493111/ LBRPR00002218308/ LBRPR00006144885/ LBRPR00003054329	एनआईपी प्लॉट नि2 फ्लोर- बीएल-47/203, नया रायपुर टाउनशीप सेक्टर नंबर 29, ग्राम- नवागांव/ खरभी पी.एम. 71/16 पर स्थित है। खसरा नंबर 554, 555, 561 आर.सी. मंदिर हसौद तहसील आरंग, जिला रायपुर, छत्तीसगढ़, रायपुर, निर्मित क्षेत्रफल 76.30 वर्ग मीटर या 819.23 वर्ग फुट, सुपर निर्मित क्षेत्र 84.96 वर्ग मीटर या 967.97 वर्ग फुट/ भौतिक कब्जे की तिथि: 06.02.2024	जुलाई 06, 2021 को रु. 24,37,347/-	रायपुर

जबकि कर्जदार/सह-कर्जदार/जमानतदारों ने उपरोक्त नोटिस की तिथि से 60 दिनों के अंदर राशि का भुगतान करें, कथनतः 30 दिनों की समाप्ति के पश्चात् अधिग्रहित संपत्ति की नीलामी कर दी जाएगी जो पूर्णतः नियम 8 और 9 प्रतिभूति हित (प्रवर्तन) नियमावली, 2002 के अंतर्गत है।

दिनांक : फरवरी 09, 2024
स्थान : रायपुर

प्राधिकृत अधिकारी
आईसीआईसीआई बैंक लि.

सूचना

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय द्वारा हीरा पॉवर एण्ड स्टील्स लिमिटेड, खसरा नंबर 156, 500, 508, 509, 510, 511/1, 511/2, 512/1, 512/2, 513/1-513/5 एवं अन्य, उरला औद्योगिक क्षेत्र, रायपुर, छत्तीसगढ़ को पत्र संख्या IA-J-11011/836/2008-IA-II (IND-I) दिनांक 05/02/2024 के माध्यम से फैले एलीएस संयंत्र की क्षमता को 48,000 टन प्रति वर्ष से 64,000 TPA टन प्रति वर्ष तक विस्तार करने के लिए पर्यावरण स्वीकृति प्रदान कर दी गई है। पर्यावरण स्वीकृति की प्रति पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय, भारत सरकार के पोर्टल http://parivesh.nic.in और कंपनी की वेबसाईट http://hpslindia.com पर उपलब्ध है।

हीरा पॉवर एण्ड स्टील्स लिमिटेड
खसरा नंबर 511/1, 511/2, और अन्य, उरला औद्योगिक क्षेत्र,
रायपुर- 492003, छत्तीसगढ़

कार्यालय जिला बाल संरक्षण अधिकारी जिला रायपुर

दावा-आपत्ति

1.	बच्चे का नाम-	बालक अनंत
2.	बच्चे का प्राप्ति दिनांक-	06/12/2023
3.	संस्था-	सेवाभारती मातृछाया कोटा, रायपुर
4	रंग-	गोरा
5	उम्र-	01 वर्ष 08 माह



ARNAV

उक्त बालिका दिनांक 06/12/2023 को बाल कल्याण समिति, रायपुर के पत्र क्र./2407/बा क.स./2022-23 रायपुर दिनांक 06/12/2023 से अस्थाई संरक्षण हेतु विशिष्ट दत्तक ग्रहण एजेन्सी, सेवाभारत, मातृछाया कोटा, रायपुर (छ.ग.) में रखा गया है।

सर्व संबंधित को जो कि बालिका के वैधानिक पालक / अभिभावक होने का दावा आपत्ति दर्ज कराना चाहते है प्रकाशन दिनांक से 30 दिवस के भीतर जिला बाल संरक्षण अधिकारी महिला एवं बाल विकास विभाग, पुराना पुलिस मुख्यालय, रोजगार कार्यालय के बाजू में जिला-रायपुर (छ.ग.) अथवा विशिष्ट दत्तक ग्रहण एजेन्सी सत्तुछाया कोटा, रायपुर (छ.ग) में दर्ज करा सकते हैं। उक्त समयावधि के पश्चात प्राप्त दावा-आपत्ति पर विचार नही किया जायेगा तथा दत्तक ग्रहण की कार्यवाही जारगी ।

यह विज्ञापन मेरे द्वारा जारी किया गया।

जिला बाल संरक्षण अधिकारी
जिला बाल संरक्षण समिति (इकाई)
महिला एवं बाल विकास विभाग
जिला-रायपुर (छ.ग.) मो.न.-9926110895

जी-07666

FROM THE FRONT PAGE

CM Sai-led BJP Govt...

farmers, landless labourers, and tribals, he said.

"Humne banaya hai, Hum hi sawaarenge, we have drafted 10 Fundamental Strategical Pillars which will assist us to achieve our midterm & long term goals by 2047," he added. With a total estimated income of Rs 1,47,500 crore, representing a growth of 22 per cent from the previous year, the Budget forecasts a corresponding increase in total expenditure to Rs 1,47,446 crore. Notably, revenue expenditure for the fiscal year 2024-25 is projected at Rs 1,24,840 crore, with a significant allocation of Rs 22,300 crore towards capital expenditure, reflecting a 20 per cent increase.

Highlighting the Government's commitment to prudent fiscal management, the Budget forecasts a revenue surplus of over Rs 1,060 crore, while the fiscal deficit is expected to stand at -Rs 16,296 crore, representing -2.90 per cent of the GSDP. The allocation of funds reflects a strategic approach to address key sectors, with significant provisions for education, agriculture, infrastructure, healthcare and rural development.

Key allocations include Rs 21,489 crore for the School Education Department, Rs 1,333 crore for Higher Education and Rs 690 crore for Skill Development, Technical Education, and Employment. Additionally, substantial sums have been earmarked for Agriculture Development and Farmer Welfare, Food and Civil Supplies, and Panchayat and Rural Development, among others.

Rs 13,435 crore will be allocated to Agriculture Development and Farmer Welfare Department, Rs 6,428 crore to Food and Civil Supplies Department, Rs 620 crore to Animal Husbandry and Diary Department and Rs 237 crore to Fisheries Department. Rs 17,529 crore will be allocated to Panchayat and Rural Development Department and Rs 266 crore to Village Industries Department. Rs 8,017 crore will be allocated to Public Works Department. Rs 5,048 crore to Public Health Engineering Department and Rs 3,166 crore, Rs 7,552 crore to Public Health and Family Welfare Department, Rs 2,663 crore to Water Resources Department, Rs 8,009 crore to Energy Department, Rs 7,570 crore to Home Department, Rs 6,044 crore to Urban Administration and Development Department, Rs 5,683 crore to Women and Child Development Department, Rs 3,281 crore to Forest Department and Rs 2,953 crore to Tribal Development Department.

A notable aspect of the Budget is the emphasis on leveraging digital technologies to enhance administrative efficiency and transparency. With a provision of Rs 266 crore allocated for digital advancements and IT-enabled services, the government aims to streamline administrative processes from the state headquarters to the grassroots level.



President Droupadi Murmu presents a certificate to a graduating student during the 62nd convocation of ICAR-Indian Agricultural Research Institute, in New Delhi on Friday. Union Minister of Tribal Affairs Arjun Munda is also seen. (ANI)

President calls for more action to lift farmers out of poverty

NEW DELHI, Feb 9 (PTI)

PRESIDENT Droupadi Murmu on Friday called for more action to lift some farmers out of poverty and ensure right price for their produce even as the Government is making speedy efforts to boost their income.

The comments came against the backdrop of thousands of farmers from Delhi-NCR region taking to the streets seeking hiked compensation for lands acquired by the Government and for accepting several demands, including enactment of a law to guarantee a minimum support price (MSP) for crops on Thursday.

Addressing the 62nd convocation of ICAR-Indian Agricultural Research Institute (IARI) here at Pusa complex, Murmu said farmers are not only "annadata" but also "jeevandata" who are contributing in making the country's economy strong.

"We are aware of problems faced by our farmers. Even today, many farmers are living in poverty. To ensure they get the right price (for their produce) and improve their livelihood, we need to work even harder in this direction," Murmu said. She expressed confidence that farmers will see the development as the country becomes a developed nation by 2047.

Stating that the Government is making speedy efforts to boost the farmers' income, the President said promotion of new farm methods, expansion of irrigation facilities and schemes like crop insurance, soil health card and Kisan Sampada Yojana -- all this will play a big role in doubling farmers' income. She stressed the importance of improving the livelihood of the farming community citing famous quotes of Mahatma Gandhi and Rabindranath Tagore.

Highlighting the contribution of IARI in the farm sector, the President said the institute has contributed for achieving the food security of the nation while appreciating initiative 'Mera Gaon, Mera Gaurav' (My Village, My Pride). She said different schools under IARI are working towards improving agriculture. It has developed more than 100 crop varieties and patented the same number between 2005 and 2020.

Sitting MLA from Telkoi, Premananda Nayak quits BJD

BHUBANESWAR, Feb 9 (IANS)

IN A jolt to the ruling Biju Janata Dal (BJD), former minister and sitting MLA from Telkoi, Premananda Nayak has resigned from the primary membership of the party.

"I am resigning from the primary membership of 'BIJU JANATA DAL.' A valuable time, that I spent with you will inspire me to serve my constituency better," Nayak wrote in a letter addressed to BJD President and Chief Minister Naveen Patnaik here. Nayak on Friday said that he was being sidelined in the party for the last few years.

96.88 crore people registered to vote for 2024 Lok Sabha election, says EC

NEW DELHI, Feb 9 (ANI)

THE Election Commission (EC) on Friday announced that 96.88 crore people are registered to vote for the forthcoming General Elections, marking it the largest electorate.

It also added over two crore youth electors in the age group of 18 to 29 years have been added in the voters' list.

After a months-long intensive Special Summary Revision 2024 exercise and ahead of the General Elections 2024, the Election Commission of India has published the electoral rolls in all States/UTs across the country with reference to January 1, 2024, as the qualifying date.

"This also included the successful completion of the revision of electoral rolls in Jammu and Kashmir and Assam, following the delimitation of constituencies. The endeavour, undertaken with meticulous planning, coordination and participation of political parties has yielded noteworthy achievements in terms of inclusivity, health and purity of the electoral rolls," the EC stated.

Meanwhile, the gender ratio has increased from 940 in 2023 to 948 in 2024, the poll panel said.

The Commission has put special emphasis on the purity and health of the Electoral Roll along with disclosures and transparency in the revision of electoral rolls.

It may be recalled that Chief Election Commissioner Rajiv Kumar, in first, held a press conference at Pune during the launch of the Special Summary Revision Exercise in November 2022.

He explained in detail the various tasks involved in the revision of electoral rolls along with the participation of political parties at every stage.

Moreover, it is noteworthy that there is an increase in female voter registrations, exemplifying a concerted effort towards gender parity and inclusivity within the electoral framework.

"The Electoral Roll gender ratio has surged positively, indicating the growing role of women in shaping the democratic fabric of the nation. Over 2.63 crore new electors have been included in the electoral roll, out of which around 1.41 crore are female electors which surpassed the newly-enrolled male voters (~ 1.22 crore) by over 15 per cent," it poll body said.

Crime Branch forms 2 teams to probe murder of Ghosalkar

MUMBAI, Feb 9 (PTI)

THE Crime Branch of Mumbai police has formed two teams to probe into the sensational murder of Shiv Sena (UBT) leader Abhishek Ghosalkar during a 'Facebook Live' by a local 'social activist', who also killed himself, an official said on Friday. One team headed by an inspector-rank official is investigating the murder of Ghosalkar, while the second team is probing into the "accidental" death of his killer Mauris Noronha, he said.

The Crime Branch probe will focus on several aspects, including how Noronha got the weapon and who provided it to him, if he was under the influence of alcohol at the time and the questioning of people who were present at the spot when Ghosalkar was fired upon, he said. A viral video of the incident, which took place at assailant Mauris Noronha's office in IC Colony in the northern suburb of Borivali (West) on Thursday evening, showed Ghosalkar being shot in the abdomen and shoulder.

KILLER HELD GRUDGE, USED BODYGUARD'S PISTOL TO COMMIT CRIME: A BODYGUARD of Mauris Noronha, who killed Ghosalkar during a 'Facebook Live' before taking his own life, has been detained by the Mumbai Crime Branch and is being questioned, an official said on Friday.

The pistol used by Noronha belongs to his bodyguard Amarendra Mishra. The weapon was made at an ordnance factory and its licence is in Mishra's name, he said.

Crime Branch officials have started questioning Mishra in this connection, he said.

The police have recorded the statements of Noronha's family members, including his wife, and learnt that he nursed a grudge against ex-corporator Abhishek Ghosalkar, son of former MLA Vinod Ghosalkar and a loyalist of the Uddhav Thackeray-led Sena (UBT).

Noronha, who faced many cases, was earlier arrested in a rape case and spent nearly five months behind bars.

GHOSALKAR'S MURDER DUE TO 'GANGWAR' WITHIN SENA (UBT), SAYS UDAY SAMANT: Industries Minister Uday Samant on Friday condemned the shocking murder of Shiv Sena (UBT) leader Abhishek Ghosalkar but attributed it to the ongoing "gang war" with the Uddhav Thackeray-led party.

Chargesheet filed against Hooda's ex- Principal Secy

NEW DELHI, Feb 9 (PTI)

THE CBI has filed a chargesheet against retired IAS officer Murari Lal Tayal, who was the Principal Secretary of former Haryana Chief Minister Bhupinder Singh Hooda, for allegedly amassing assets worth Rs 14 crore which were disproportionate to his known sources of income, officials said on Friday.

In its chargesheet filed before the Panchkula Special Court on Thursday, the CBI alleged that Tayal, his wife Savita and son Kartik acquired assets worth Rs 14.06 crore during 2006-14 which were 81.11 per cent above their legitimate sources of income, they said.

NOTICE

Hira Power and Steels Limited, situated at khasra No. 156, 500, 508,509,510,511/1,511/2,512/1, 512/2,513/1-513/5 and others, Urla Industrial Area, Raipur, Chhattisgarh has been granted Environment Clearance for Expansion of manufacturing of Ferro Alloys from 48,000 TPA to 64,000 TPA by the Ministry of Environment, Forest and Climate Change vide their Letter No. IA-J-11011/836/2008-IA-II-(IND-I) Dated 05/02/2024.Copy of Environment Clearance is available at http://parivesh.nic.in, Portal of Ministry of Environment, Forest and Climate Change, Government of India and at the website of the Company i. e. http://hpslindia.com.

Hira Power and Steels Ltd.
Khasra No. 511/1,512/2 and others, Urla Industrial Area, Raipur - 492003 (Chhattisgarh)

PUBLIC NOTICE

Under the instruction from my client namely **Smt. Priya Tiwari W/o Sanjiv Kumar Tiwari** R/o Gautam vihar, Devpuri, Raipur, Tehsil :- &, District :- Raipur (C.G.), issuing the following publication as the Land/property vide Khasra No. 9/162 (A part of previous Kh. No. 9/10), Total Area 0.005 Hec. (510 Sqft.), Situated at Birgoan, Metal Park Ward No. 09, P.C. No. 88, R.I.C. Dharsiva-1, Tah.- Raipur, Dist. Raipur, Dist. Raipur (C.G.) that the previous title deed (Seller-Avadhesh Jha S/o C.M. Jha & Purchaser-Atish Kumar Varma S/o Ganesh Ram Varma) vide sale deed as Vol. No. 48714, Sl. No. 5835 (KH), Page No. 19 to 28, dated 02.11.2010, SRO Raipur. The said deed date 02.11.2010 is lost/misplaced by Smt. Priya Tiwari W/o Sanjiv Kumar Tiwari from her house. If any person found the above said title deed, may return the same by may of registered post, to address given below or inform undersigned by telephone. In case any persons/Financial Institution having any claim/Interest in respect thereof by way of sale, exchange, gift, mortgage or any objection, please be inform the same in wtiting to the undersigned inthe below mentioned address with in 7 days from the date of publication, with relevant documents in support of their claim/objection. If I have not received any objection with in the stipulated days, beyond that on claim is entertained or binding on my client.

Date : 08/02/2024

Ravikant Seth
Advocate
Near of Gandhi Chowk
Gobra Nawapara (Rajim)
Distt.- Raipur (C.G.) 493881
Mob.: 98266-41364



Family members, relatives and supporters of Abhishek Ghosalkar during his funeral procession in Mumbai on Friday. (PTI)

SC judge recuses himself from hearing plea for allocation of funds for MGNREGA

NEW DELHI, Feb 9 (PTI)

SUPREME Court judge justice P S Narasimha on Friday recused himself from hearing a plea filed by a political party seeking a direction to the Centre to ensure that states have adequate funds to implement the rural employment guarantee scheme, MGNREGA.



The matter came for hearing before a bench comprising Justices P S Narasimha and Aravind Kumar.

As the case came on board, Justice Narasimha said he has appeared in the matter as a lawyer and the matter will have to be placed before the Chief Justice D Y Chandrachud for constitution of a fresh bench.

Justice Narasimha was elevated to the Supreme Court from bar on the recommendation of the collegium.

Advocate Prashant Bhushan appeared for the petitioner party. Swaraj Abhiyan, in its fresh plea, submitted that there is currently a grave crisis being faced by crores of workers under the Mahatma Gandhi National Rural Employment Guarantee Act, 2005 (MGNREGA) in the country, with their pending wages piling up along with negative balances in most of the States.

As of November 26, 2021, State Governments are facing a shortage of Rs 9,682 crore and 100 per cent of the allocated funds for the year have been exhausted before the conclusion of the year, it said. This is despite this excuse of shortage of funds being a gross violation of the law, it said and referred to the apex court judgement on MGNREGA wage payments.

कुशाभाऊ ठाकरे पत्रकारिता एवं जनसंचार विश्वविद्यालय, रायपुर (छत्तीसगढ़)

क्र.-1821/स्था./सुरक्षा-व्यवस्था/24

रायपुर, दिनांक : 09/02/2024

सुरक्षा व्यवस्था निविदा

सुरक्षा व्यवस्था 2024-25 हेतु पंजीकृत सुरक्षा एजेंसी से पंजीकृत डॉक/स्पीड पोस्ट से मुहरबंद निविदाएं आमंत्रित की जाती है। निविदा प्रपत्र राशि 5,000/- रु. शर्ते एवं विस्तृत जानकारी वेबसाईट www.ktujm.ac.in से डॉउनलोड करें।

HTR/CGS-39609/10.02.24

कुलसचिव

Violent protest in Sandeshkhali demanding arrest of absconding TMC leader in WB

BARASAT (WB), Feb 9 (PTI)

Locals began a sit-in outside the Sandeshkhali police station, stating that it would continue till Shajahan and his aides were arrested

PEOPLE agitated in Sandeshkhali in North 24 Parganas district on Friday, demanding the arrest of absconding TMC leader Sheikh Shajahan and his aides.

With sticks and brooms in their hands, locals took out processions in different areas of Sandeshkhali as protests intensified on the second day.

On Friday afternoon, Shajahan's aide Shiboprasad Hazra's house was vandalised and some furniture was torched, police said. A poultry farm in Zeliakhali belonging to Hazra was also set ablaze, they said. Superintendent of Police Hossain Mehedi Rahaman said forces were sent to the area and working to tackle the situation.

He said a complaint was lodged by the villagers against Shajahan and his aides on Thursday, and it was being looked into. Searches were on for them, the SP said.

Addressing a press conference, Additional Director-General (Law and Order) Manoj Verma urged people not to take the law into their own hands.

"Investigation is underway into all complaints that have been lodged and action will be taken. At the same time, if someone takes up the law into their hands, the law will take its own course. The situation is at present under control," he said.

Meanwhile, the locals began a sit-in outside the Sandeshkhali police station, stating that it would continue till Shajahan and his aides were arrested.

Shajahan went missing last month after a team of the Enforcement Directorate (ED) that went to raid his house in the alleged ration scam was attacked by a mob.

Locals alleged that Shajahan and his "gang" captured swathes of land by force, besides torturing people during their "reign".

Meanwhile, Shajahan's supporters also took to the streets, and police said they were trying to prevent a clash. The TMC claimed that the BJP and CPI (M) were inciting the people to foment unrest in the area.

Snapchat faces major outage globally, including India

NEW DELHI, Feb 9 (IANS)

POPULAR social media platform Snapchat on Friday suffered a major outage globally, including in India, with users reporting that they were unable to send messages, including texts and snaps, to each other.

According to the outage monitor website DownDetector, over 76 per cent of people reported problems while using the application, 19 per cent with login, and 5 per cent while using the website.

Numerous users went on to X and Reddit to report the issue.

भारतीय खाद्य निगम — FOOD CORPORATION OF INDIA

Regional Office : Vidhan Sabha Road, Kapa, Post - Pandri, Raipur (C.G.) 492005, Ph : 0771-2972740, Email : gmcg.fci@gov.in

No:-RO CG-31033.0/7/2024-Sales-RO CG Date : 09.02.2024

निविदा आमंत्रण सूचना

Food Corporation of India invites bids from Processor/Flour Millers/ Manufacturers/end user of **wheat** for sale of Wheat under OMSS (D) lying at its various Depots under FCI Chhattisgarh Region through e-auction. The Processor/Flour Millers/Manufacturers/end user of wheat for sale of Wheat may participate in the e-auction conducted by MJUNCTION on behalf of FCI on the website **www.valuejunction.in/fci** as per the following schedule:-

Schedule of Tender

Date of floating tender	Start Date for Submission of EMD	End Date for Submission of EMD	Online Bidding Start at	Online Bidding Ends at
09.02.2024	09.02.2024	12.02.2024 (Till 06:00 PM)	14.02.2024 (11:00 AM)	14.02.2024 (02:00 PM)

The Depot-wise offered quantity of wheat, as well as MTF for sale of wheat is available on **www.fci.gov.in** and **www.valuejunction.in/fci** detailed instructions to bidders and terms & conditions governing the e-auction may also be seen at **www.valuejunction.in/fci.** The empanelment of interested bidders is an ongoing and continuous process and those bidders who are interested to get themselves empaneled may contact help desk provided by MJUNCTION on Toll Free No. 0788-2221071, 07886540003 and 9009777860. **Further, Nodal Officer of FCI Chhattisgarh Region is Miss Nupur Anand, AGM (Sales) Phone No. 7995930023 & Nodal Officer of mjunction is Mr. Lokendra Kumbhakar, Phone No. 9424582539.**

General Manager (Region)

Annexure-XX

HIRA

HIRA POWER & STEELS

8/C

क्रमांक : 2272/एचपीएसएल/प्रशा./युनिट–II/2023-24/2272 दिनांकः 05.03.2024

प्रति,
श्रीमान आयुक्त महोदय,
नगर पालिक निगम, बीरगांव,
रायपुर (छ.ग.)

विषयः हमारे द्वारा प्राप्त पर्यावरण स्वीकृति के संबंध में।

महोदय,

उपरोक्त विषयांतर्गत आपको सूचित करना चाहते है कि हमारे संयंत्र **हीरा पावर एण्ड स्टील्स लिमिटेड, यूनिट–II**, खसरा नं. 511/1, 512/2, उरला इण्डस्ट्रीयल कॉम्प्लेक्स, रायपुर (छ.ग.) को पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय द्वारा क्षमता विस्तार हेतु पर्यावरण स्वीकृति प्रदान कर दी गई है।

आपके सुलभ संदर्भ हेतु पर्यावरण स्वीकृति की प्रति प्रेषित कर रहे है।

सधन्यवाद।

भवदीय।
वास्ते, हीरा पावर एण्ड स्टील्स लिमिटेड, यूनिट–II

अधिकृत हस्ताक्षरकर्ता
संलग्नक : उपरोक्तानुसार।

नगर पालिक निगम बीरगांव (छ.ग.)
05/03/24

COPY

O/C Sent on Mail on 27/9/24

Annexure-XXI

HIRA POWER & STEELS

Ref: 2109/HPSL/2024-25/2109 **Date: 27.09.2024**

To,
The Member Secretary,
Chhattisgarh Environment Conservation Board,
Paryavas Bhavan,
North Block , Sector - 19,
NAYA RAIPUR (C.G.) – 492002

C.E.C.B 03/10/2024

Sub: Submission of Environmental Statement (Form-V) for the Financial Year 2023-24.

Ref: 1. Consent of Board issued under Section 25/26 of the Water (Prevention & Control of Pollution) Act 1974 vide letter No.10518/TS/CECB/2024 Nava Raipur Atal Nagar, Dated 28 /03/ 2024

2. Consent of Board issued under Section 21 of the Air (Prevention & Control of Pollution) Act 1981 vide letter No. 10518/TS/CECB/2024 Nava Raipur Atal Nagar, Dated 28 /03/ 2024

Respected Sir,

With reference to the subject mentioned, please find enclosed herewith Environmental Statement in Form – V as prescribed under Rule 14 of the EPA Act, 1986 for the Financial Year 2023-24 of Hira Power & Steels Limited, Unit-II, Urla Industrial Complex, Raipur (C.G.)

Submitted for your kind information & record please.

Thanking You

Yours faithfully,
For, **HIRA POWER & STEELS LIMITED, UNIT–II**

AUTHORIZED SIGNATORY

H.O.C.G.E.C.B. Environment Conservation Board 3/10/24 Atal Nagar, Dist.-Raipur (C.G.)

Encl: A/a

CC to: The Regional Officer, Chhattisgarh Environment Conservation Board, New Office Building, Ring Road No. 2, Near CSEB Office, TATIBANDH, RAIPUR **(C.G.)–492099**

ENVIRONMENTAL STATEMENT

(FORM – V)

FOR THE FINANCIAL YEAR ENDING MARCH 31ST 2024 (2023-24)

HIRA POWER AND STEELS LIMITED

UNIT - II

URLA INDUSTRIAL COMPLEX

RAIPUR (C.G.) – 492 003

HIRA POWER & STEELS

Environmental Statement

(See Rule 14)

Environmental Statement for the financial year ending the 31st March 2024

Part – A

Name and address of the owner/ Occupier of the industry operation or process	Hira Power & Steels Limited, Unit – II, Urla Industrial Complex, District - Raipur (C.G.)– 492003	
Industry category Primary-(STC Code) Secondary- (STC Code)	Red	
Production Capacity- Units	1 X 3.0 MVA Submerged Arc Furnace 1 X 3.6 MVA Submerged Arc Furnace 2 X 5.5 MVA Submerged Arc Furnace 1 X 6.0 MVA Submerged Arc Furnace 12 MT/Heat CLU Converter	64,000 MTPA Ferro Alloys (including low / medium carbon ferro alloys) Or 56,000 MTPA Pig Iron
	Captive Power Plant	20 MW
Year of establishment	1 X 3.0 MVA Submerged Arc Furnace	02.02.1994
	1 X 3.6 MVA Submerged Arc Furnace	15.01.1996
	2 X 5.5 MVA Submerged Arc Furnace	19.05.2006
	1 X 6.0 MVA Submerged Arc Furnace	23.02.2010
	12 MT/Heat CLU Converter	24.09.2016
	Captive Power Plant	25.03.2006
Date of the last environmental statement submitted.	20.09.2023	

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

HIRA

HIRA POWER & STEELS

Part – B

Water and Raw Material Consumption

I. Water consumption in m^3/d

Process & Cooling	:	428.66 KLD
Domestic		84.81 KLD
Other	:	24.49 KLD

Name of the product	Process water consumption per unit of product	
	During the Previous Financial year (2022-2023)	During the current Financial Year(2023-24)
1. Ferro Alloys	Ferro Alloys (Including Low/Medium Carbon) – 2.73 KL/Tonne	Ferro Alloys (Including Low/Medium Carbon)- 2.07 KL/Tonne
	CPP – 0.339 KL/MWh	CPP – 0.270 KL/MWh

II. Raw material consumption

Name of the Raw Materials	Name of the Products	Consumption of raw material per unit of Output	
		During the Previous Financial year (2022-23)	During the Current financial year (2023-2024)
Ferro Alloys (including low / medium carbon ferro alloys)			
1 Manganese Ore	Ferro Alloys (including low / medium carbon ferro alloys)	2.593	2.385
2 Carbonaceous		0.728	0.670
3 Dolomite		0.016	0.046
4 Quartz		0.0004	0.0017
5 Iron Ore		0.0120	0.000
6. Mill scale		0.0093	0.0034
7 Carbon electrode paste		0.0139	0.0135
8 Ferro Silicon		0.0196	0.0170
9 Ferro Manganese		0.6689	0.5528
10. Silico Manganese		0.0987	0.0654
11 Calcined Dolomite		0.0669	0.0510
12. Calcined Lime		0.0714	0.0538
13. Fe-Mn Slag (Used in manufacturing of Si-Mn)		0.000	0.000
Pig Iron	Pig Iron	Not Produced	Not Produced
1 Iron Ore		NA	NA
2 Sinter		NA	NA
3 Coke		NA	NA
4 Limestone		NA	NA
Power Generation	Captive power generation	1.303 MT/MW	1.010 MT/MW
1 Coal & Dolochar			

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

HIRA

HIRA POWER & STEELS

*Industry may use codes if disclosing details of raw material would violate contractual obligations otherwise all industries have to name the raw materials used.

PART-C

Pollution discharged to environment/unit of output

(Parameter as specified in the consent issued)

Pollutants	Quantity of Pollutants discharged (mass/day)	Concentration of Pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with reasons
(a) Water	➢ Effluent generated from process, Softener backwash & CT Blow down water is being used for different purpose like sprinkling to control fugitive dust emission (Road, Unloading, All around stockpiles & raw materials etc.) after primary treatment. ➢ Domestic waste water is being treated through septic tank and followed by soak pit		
(b) Air	1. We have installed Bag Filters in all the furnaces to control Emission in Ferro Alloys Division. We have installed Electrostatic Precipitator in Captive Power Plant to control emission. Stack Emission Report of March 2024 is attached as **Annexure-I.**		
	2. Ambient Air Monitoring station is installed inside plant premises to have a regular check on the quality of Air as per the government norms. Ambient Air Monitoring Report is enclosed as **Annexure-II**		

PART – D

Hazardous Waste

(As specified under Hazardous waste, Management, Handling & Transboundary Movement Rules, 2008)

Authorization under Hazardous Waste (Management, Handling& Trans Boundary Movement) Rules, 2008 & as Amended Rules, 2010 has been granted (Authorization No. 340/HO/HSMD/CECB/ATAL NAGAR, RAIPUR) vide letter No 3641/HO/HSMD/CECB/2020 Dated: 21.07.2021.

	Total Quantity	
Hazardous Waste	**During the Previous Financial Year (2022-23)**	**During the Current Financial Year (2023-24)**
(a)From Process – **Used oil in Litres**	2400	3350
(b) From DM plant – **Resins in MT**	NIL	NIL

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Part – E

Solid Waste

Solid Waste		Total Quantity (MT)	
		During the Previous Financial year (2022-23)	During the Current financial year (2023-24)
(a)	From Process		
	i. Fe-Mn Slag	43791.839	51684.769
	ii. Fly Ash	58529.85	50408.56
	iii. Mn_3O_4	2049.564	1584.793
	iv. AOD Slag	9914.21	4613.69
(b)	From Pollution Control facilities	Bag Filter dust is recycled in the manufacturing process of Si-Mn & Fe-Mn	
	i. Bag filter dust	1483.7	2251.1
	ii. Fly Ash	58529.85	50408.56
(c)	i Qty recycled or reused within the unit.	Fe-Mn Slag is used as raw material for Si-Mn production	
	a. Bag filter dust	1335.33	0.00
	b. Mn_3O_4 Dust	2295.151	510.313
	ii. Sold		
	a. Fe-Mn Slag	44361.72	51187.55
	b. Mn_3O_4 Dust	150.00	1075
	c Fly Ash (At zero value)	58529.85	50408.56
	d AOD Slag	224.47	0.00
	iii Disposed	▸ Fly ash supplied to Bricks Manufacturers and used in environment friendly manner ▸ Si-Mn slag used as aggregate for civil work (sales) & filling of low lying area. ▸ 4613.69 MT Low Grade AOD Slag was dumped in low lying area presently which is not sellable.	
	a. Fly Ash	0.00	0.00
	b. AOD Slag	9914.21	4613.69

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Part-F

Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes

Hazardous Waste: No hazardous waste is generated from process except used oil which is drained from machineries / equipment and resin from DM Plant which is re-used in the process.

Solid Waste:

- Fly ash supplied to Bricks Manufacturers and used in environment friendly manner.
- Bag filter dust is recycled in the manufacturing process of Si-Mn & Fe-Mn
- Slag generated is non-hazardous in nature.
- Fe-Mn slag is used as raw material for Si-Mn production
- Si-Mn slag is used as aggregate for civil work & filling of low lying area.

Part-G

Impact of the pollution control measures taken on conservation of natural resources and consequently on the cost of production.

1. Extensive tree plantation, development of green belt & lawns in the factory premises which control the impact of air pollution & optimize the Ambient temperature of surrounding
2. Blow down water is being used for different purpose like floor washing & sprinkling to control the fugitive dust emission (like road, unloading area, raw material yard etc.)
3. Domestic waste water is being treated through Sewage Treatment Plant .

Part-H

Additional measures/investment proposal for environmental protection including abatement of pollution

1. For better control on fugitive emission pneumatic sweeping machine and water sprinkling on road.
2. Extensive plantation, development of green belt & lawns in plant premises
3. Adaptation of good housekeeping practices
4. Rain water harvesting system for Surface rain water has been developed.
5. 100% internal roads are constructed by concrete.
6. More than 17000 trees have been planted in premises and around 3000 outside the factory premises
7. Online Continuous emission monitoring system have been installed in all stacks
8. Continuous Ambient Air Quality Monitoring System has been installed inside plant premises
9. Raw material handling sections have been provided with dust suppression / dust collection system.
10. Acoustic hoods have been provided to most of the noise generating equipment & covered in closed structures, the noise transmitted outside would be still lower.
11. Plant operators working in high level noise zone have provided with ear plug / muff

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Part-I

MISCELLANEOUS:

Any other particulars in respect of environmental protection and abatement of pollution.

1 Training on EMS to all employees and contract labors to create awareness
2 Further gap filling is being done to improve the density of green belt.
3 Good housekeeping practices have been adopted.
4 Only PUC certified vehicles are allowed for transportation of Raw materials and Finished goods
5 Air, water, noise level and effluent monitoring is being done by NABL accredited lab
6 Celebration of environmental promotional activities (Environment Day).
7 Horticulture Department is taking care of tree plantation & green belt development.

HIRA POWER & STEELS LTD. RAIPUR (C.G.)

Annexure-I

Ultimate
HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

	REPORT NO	UES/TR/23-24/08777
To,	LAB REF NO	UES/23-24/ST/016915
Hira Power and Steels Limited (Unit-II)	DATE OF SAMPLING	15/03/2024
Khasra No. 511/1, 511/2, 512/1, 512/2	DATE OF RECEIPT	16/03/2024
and Others	DATE OF REPORT	20/03/2024
Urla Industrial Area, Raipur (Chhattisgarh)	DATE OF ANALYSIS	Start.16/03/2024 End.20/03/2024

SAMPLE DETAILS

Monitoring For	Stack Emission Monitoring
Customer Ref. No. & Date	P.O. No. 7200004821/u102, dated 10/06/2023
Sampling Location	3.0 & 3.6 MVA Submerged Arc Furnace 'A &B' (Combine Stack)
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2 1985 Reaffirmed 2009, Part 3 2008 Part 7 2005 Reaffirmed 2012, IS 5182 (Part 10) 2003
Sample Quantity/Packing	Thimble 1 X 1 No., SO_2 30 ml X 1 No. PVC Bottle NO, 25 ml X 1 No. PVC Bottle Rubber Bladder 1 X 1 No.

TEST REPORT

Stack details

Stack Identity	3.0 & 3.6 MVA SUBMERGED ARC FURNACE 'A & B' (COMBINE STACK)
Stack Attached To	BAG FILTER
Material of Construction	MILD STEEL PLATE
Height of the stack from ground level (Meter)	30.0 MTR
Stack Diameter	1.4 MTR
Stack Shape At Top	CIRCULAR
Type of Fuel	ELECTRICITY
Total Electrical Load (KW)	3.0 MVA & 3.6 MVA

Parameter	Unit	Method Reference	Limit	Result
Flue Gas Temperature	°C	IS 11255 (Part 3) 2008	-	89.6
Flue Gas Velocity	M/s	IS 11255 (Part 3) 2008		10.45
Total Gas Quantity	Nm^3/h	IS 11255 (Part 3) 2008	-	47570.0
Total Particulate Matter (TPM)	mg/Nm^3	IS 11255 (Part 1) 1985	40	34.8

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- *The use of the report for publication, arbitration or as legal dispute is forbidden*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer*
- *This is for information as the party has asked for above tests only*

For ULTIMATE ENVIROLYTICAL SOLUTIONS

REVIEWED BY

AUTHORIZED SIGNATORY

End of the test report

Ultimate

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

To, **Hira Power and Steels Limited (Unit-II)** **Khasra No. 511/1, 511/2, 512/1, 512/2 and Others** **Urla Industrial Area,** **Raipur (Chhattisgarh)**	REPORT NO	UES/TR/23-24/08778	
	LAB REF NO	UES/23-24/ST/016916	
	DATE OF SAMPLING	15/03/2024	
	DATE OF RECEIPT	16/03/2024	
	DATE OF REPORT	20/03/2024	
	DATE OF ANALYSIS	Start.16/03/2024	End 20/03/2024

SAMPLE DETAILS

Monitoring For	Stack Emission Monitoring
Customer Ref. No. & Date	P.O. NO. 7200004006/U102, DATED 16/06/2022
Sampling Location	5.5 & 5.5 MVA Submerged Arc Furnace 'C&D' (Combine Stack)
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2:1985 Reaffirmed 2009; Part 3:2008, Part 7:2005 Reaffirmed 2012, IS 5182 (Part 10): 2003
Sample Quantity/Packing	Thimble 1 X 1 No., SO_2- 30 ml X 1 No. PVC Bottle, NO_x 25 ml X 1 No. PVC Bottle Rubber Bladder 1 X 1 No

TEST REPORT

Stack details

Stack Identity	5.5 & 5.5 MVA SUBMERGED ARC FURNACE 'C &D' (COMBINE STACK)
Stack Attached To	BAG FILTER
Material of Construction	MILD STEEL PLATE
Height of the stack from ground level (Meter)	35.0 MTR
Stack Diameter	1.4 MTR
Stack Shape At Top	CIRCULAR
Type of Fuel	ELECTRICITY
Total Electrical Load (KW)	5.5 & 5.5 MVA

Parameter	Unit	Method Reference	Limit	Result
Flue Gas Temperature	°C	IS 11255 (Part -3) 2008	-	111.5
Flue Gas Velocity	M/s	IS 11255 (Part -3) 2008		7.62
Total Gas Quantity	Nm^3/h	IS 11255 (Part 3) 2008	-	32711.7
Total Particulate Matter (TPM)	mg/Nm	IS 11255 (Part 1) 1985	40	33.6

REMARKS: RESULTS ARE AS ABOVE

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For ULTIMATE ENVIROLYTICAL SOLUTIONS

REVIEWED BY

AUTHORIZED SIGNATORY

End of the test report

Ultimate

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

To,
Hira Power and Steels Limited (Unit-II)
Khasra No. 511/1, 511/2, 512/1, 512/2 and Others
Urla Industrial Area,
Raipur (Chhattisgarh)

REPORT NO	UES/TR/23-24/08779	
LAB REF NO	UES/23-24/ST/016917	
DATE OF SAMPLING	15/03/2024	
DATE OF RECEIPT	16/03/2024	
DATE OF REPORT	20/03/2024	
DATE OF ANALYSIS	Start:16/03/2024	End 20/02/2024

SAMPLE DETAILS

Monitoring For	Stack Emission Monitoring
Customer Ref. No. & Date	P.O. NO 7200004006/U102, DATED: 16/06/2022
Sampling Location	6 MVA Submerged Arc Furnace 'E'
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2:1985 Reaffirmed 2009; Part 3:2008, Part 7:2005 Reaffirmed 2012, IS 5182 (Part 10) :2003
Sample Quantity/Packing	Thimble: 1 X 1 No., SO_2: 30 ml X 1 No. PVC Bottle, NO: 25 ml X 1 No. PVC Bottle, Rubber Bladder: 1 X 1 No.

TEST REPORT

Stack details

Stack Identity	6 MVA SUBMERGED ARC FURNACE 'E'
Stack Attached To	BAG FILTER
Material of Construction	MILD STEEL PLATE
Height of the stack from ground level (Meter)	40.0 MTR
Stack Diameter	2.0 MTR
Stack Shape At Top	CIRCULAR
Type of Fuel	ELECTRICITY
Total Electrical Load (KW)	6.0 MVA

Parameter	Unit	Method Reference	Limit	Result
Flue Gas Temperature	°C	IS 11255 (Part 3) 2008	-	134.5
Flue Gas Velocity	M/s	IS 11255 (Part 3) 2008	-	10.12
Total Gas Quantity	Nm³/h	IS 11255 (Part 3) 2008	-	83656.8
Total Particulate Matter (TPM)	mg/Nm³	IS 11255 (Part 1) 1985	40	35.0

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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For ULTIMATE ENVIROLYTICAL SOLUTIONS

REVIEWED BY

AUTHORIZED SIGNATORY

----------End of the test report----------

Ultimate

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Name & Address Of The Customer			
To, Hira Power and Steels Limited (Unit-II) Khasra No. 511/1, 511/2, 512/1, 512/2 and Others Urla Industrial Area, Raipur (Chhattisgarh)	REPORT NO	UES/TR/23-24/08780	
	LAB REF NO	UES/23-24/ST/016918	
	DATE OF SAMPLING	15/03/2024	
	DATE OF RECEIPT	16/03/2024	
	DATE OF REPORT	20/03/2024	
	DATE OF ANALYSIS	Start:16/03/2024	End 20/03/2024

SAMPLE DETAILS

Monitoring For	Stack Emission Monitoring
Customer Ref. No. & Date	P.O. NO. 7200004006/U102, DATED 16/06/2022
Sampling Location	CLU Converter &Thermite (Combine Stack)
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2 1985 Reaffirmed 2009, Part 3 2008, Part 7 2005 Reaffirmed 2012, IS 5182 (Part 10) 2003
Sample Quantity/Packing	Thimble 1 X 1 No., SO_2: 30 ml X 1 No. PVC Bottle, NO_x: 25 ml X 1 No. PVC Bottle, Rubber Bladder: 1 X 1 No.

TEST REPORT

Stack details

Stack Identity	CLU CONVERTER & THERMITE (COMBINE STACK)
Stack Attached To	BAG FILTER
Material of Construction	MILD STEEL PLATE
Height of the stack from ground level (Meter)	35.0 MTR
Stack Diameter	2.295 MTR
Stack Shape At Top	CIRCULAR
Type of Fuel	ELECTRICITY
Total Electrical Load (KW)	650 KW

Parameter	Unit	Method Reference	Limit	Result
Flue Gas Temperature	°C	IS 11255 (Part -3) 2008	-	89.1
Flue Gas Velocity	M/s	IS 11255 (Part -3) 2008	-	10.71
Total Gas Quantity	Nm³/h	IS 11255 (Part -3) 2008	-	131194.2
Total Particulate Matter (TPM)	mg/Nm³	IS 11255 (Part -1 1985	40	32.1

REMARKS : RESULTS ARE AS ABOVE

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For ULTIMATE ENVIROLYTICAL SOLUTIONS

REVIEWED BY

AUTHORIZED SIGNATORY

End of the test report

Ultimate

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

To,
Hira Power and Steels Limited (Unit-II)
Khasra No. 511/1, 511/2, 512/1, 512/2 and Others
Urla Industrial Area,
Raipur (Chhattisgarh)

REPORT NO	UES/TR/23-24/08781	
LAB REF NO	UES/23-24/ST/016919	
DATE OF SAMPLING	15/03/2024	
DATE OF RECEIPT	16/03/2024	
DATE OF REPORT	20/03/2024	
DATE OF ANALYSIS	Start:16/03/2024	End:20/03/2024

SAMPLE DETAILS

Monitoring For	Stack Emission Monitoring
Customer Ref. No. & Date	P.O. NO. 7200004006/U102, DATED: 16/06/2022
Sampling Location	20 MW AFBC
Sample Collected By	Laboratory Chemist
Sampling Procedure	IS 11255 Part 1,2:1985 Reaffirmed 2009; Part 3 2008, Part 7 2005 Reaffirmed 2012, IS 5182 (Part 10) :2003
Sample Quantity/Packing	Thimble 1 X 1 No., SO_2: 30 ml X 1 No. PVC Bottle, NO, 25 ml x 1 No. PVC Bottle Rubber Bladder 1 X 1 No.,

TEST REPORT

Stack details

Stack Identity	20 MW AFBC
Stack Attached To	ESP
Material of Construction	RCC
Height of the stack from ground level (Meter)	73.0 MTR
Stack Diameter	2.83 MTR
Stack Shape At Top	CIRCULAR
Type of Fuel	COAL
Total Electrical Load (KW)	20 KW

Parameter	Unit	Method Reference	Limit	Result
Flue Gas Temperature	°C	IS 11255 (Part -3) 2008	-	150.0
Flue Gas Velocity	M/s	IS 11255 (Part -3) 2008	-	15.45
Total Gas Quantity	Nm^3/h	IS 11255 (Part -3 2008	-	246348.2
Sulphur Dioxide (SO_2)	mg/Nm^3	IS 11255 (Part 2) 1985	600	272
Oxides of Nitrogen (NOx)	mg/Nm^3	IS 11255 (Part 7) 2005	300	154
Total Particulate Matter (TPM)	mg/Nm^3	IS 11255 (Part 1) 1985	50	42.0
Carbon Monoxide (CO)	mg/Nm^3	IS 13270:2019	-	2.4
Hg	mg/Nm^3	USEPA Method No. 29	0.03	N.D

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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- *This is for information as the party has asked for above testing only.*

For ULTIMATE ENVIROLEGAL SOLUTIONS

REVIEWED BY

AUTHORIZED SIGNATORY

----------End of the test report----------

Annexure-II

Ultimate
HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

To,
Hira Power and Steels Limited (Unit-II)
Khasra No. 511/1, 511/2, 512/1, 512/2 and Others
Urla Industrial Area, Raipur (Chhattisgarh)

Report No.	UES/TR/23-24/08776
Lab Ref No.	UES/23-24/AAQM/016911-016914
Date of Sampling	15/03/2024 to 16/03/2024
Date of Receipt	16/03/2024
Date of Report	20/03/2024
Date of Analysis	Start: 16/03/2024 End: 20/03/2024

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring
Sampling Location	1. Near CHP Area 2. Beside Silo 3. Solar Panel Area 4. Near Main Gate
Customer Ref. No & Date	P.O. NO. 7200004821/U102, DATED: 10/06/2023
Duration Of Sampling	As per CPCB norms
Sample Collected By	Laboratory Chemist
Sampling Procedure	As Per Method Reference
Sample Quantity/Packing	Filter Paper (PM_{10}): 1X1 No., Filter Paper ($PM_{2.5}$): 1X1 No SO_2 30mlX1 No. PVC Bottle, NO_2 30mlX1 NO. PVC Bottle.

Test Method for Ambient Air Quality Monitoring

Parameter	Method Reference
Particulate Matter size less than 10 microns (PM10)	IS 5182 (Part-23) 2006 & CPCB Guidelines Vol -I
Particulate Matter size less than 2.5 microns (PM2.5)	IS 5182 (Part-24) 2019 & CPCB Guidelines Vol -I
Sulphur Dioxide (SO2)	IS 5182 (Part-2) 2001 & CPCB Guidelines Vol -I
Nitrogen Dioxide (NO2)	IS 5182 (Part-6) 2006 & CPCB Guidelines Vol -I
Carbon Monoxide (CO)*	IS 5182 (Part-10)

TEST REPORT

Parameter	Unit	NAAQM Standard	Results			
			Near CHP Area	Beside Silo	Solar Panel Area	Near Main Gate
PM_{10}	$\mu g/m^3$	100	66.2	68.5	66.6	70.5
$PM_{2.5}$	$\mu g/m^3$	60	32.0	34.7	32.9	34.8
SO_2	$\mu g/m^3$	80	16.6	18.8	16.5	18.2
NO_2	$\mu g/m^3$	80	22.8	23.4	22.8	24.0
CO	mg/m^3	4.0	0.54	0.74	0.64	0.64

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

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- *This is for information as the party has asked for above test(s) only.*

For ULTIMATE ENVIROLYTICAL SOLUTIONS

REVIEWED BY

AUTHORIZED SIGNATORY

End of the test report

Annexure-XXII

CHHATTISGARH ENVIRONMENT CONSERVATION BOARD

Paryavas Bhawan, Sector - 19
Atal Nagar, District - Raipur (C.G.)
E-mail - hocecb@gmail.com

==========

No. 10518 /TS/CECB/2024 Nava Raipur Atal Nagar, Dated 28 /03/ 2024

To,

M/s Hira Power and Steels Limited
Unit-II,
Urla Industrial Area,
District - Raipur (C.G.)

Sub: - "Permission to Establish" cum amendment in consent of the Board issued under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 for expansion in Ferro Alloys Plant – 48,000 Metric Tonnes Per Annum to 64,000 Metric Tonnes Per Annum [Including Low / Medium Carbon Ferro Alloys 48,000 Tonnes Per Annum].

Ref: - 1. "Permission to Establish" issued by Chhattisgarh Environment Conservation Board, Raipur (C.G.) vide letter no. 4629/TS/CECB/2014 Raipur, dated: 31/10/2014 for CLU Converter within the process to enrich the quality of Ferro Alloys by reducing the carbon for manufacturing of Low / Medium Ferro Alloys capacity of 18,000 Metric Tonnes/Annum.

2. Amendment in consent under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 vide letter no. 3614/TS/CECB/2016 Raipur, dated: 24/09/2016 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 3616/TS/CECB/2016 Raipur, dated: 24/09/2016 for CLU Converter within the process to enrich the quality of Ferro Alloys by reducing the carbon for manufacturing of Low / Medium Ferro Alloys capacity of 18,000 Metric Tonnes/Annum.

3. Clubbing consent issued under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 vide letter no. 208/TS/CECB/2018 Raipur, dated: 03/04/2018 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 210/TS/CECB/2018 Raipur, dated: 03/04/2018 for Ferro Alloys (including Low / Medium Ferro Alloys) - 18,000 Metric Tonnes/Annum and Ferro Alloys - 30,000 Metric Tonnes/Annum or Pig Iron from 2 x 5.5 MVA Submerged Arc Furnaces - 56,000 Metric Tonnes/Annum and Captive Power Plant – 20 MW.

4. Amendment in consent issued by, Chhattisgarh Environment Conservation Board, Raipur, vide letter no. 781/TS/CECB/2018 Raipur, dated: 10/05/2019 for Alumino Thermic Process - 600 Metric Tonnes/Annum for production of Low / Medium Carbon Ferro Manganese (Ferro Alloy).

5. Renewal of consent of the Board issued under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 968/TS/CECB/2023 Nava Raipur, dated: 16/05/2023 for Ferro Alloys [including Low / Medium Ferro Alloys and Alumino Thermic Process - 600

Metric Tonnes/Annum for production of Low / Medium Carbon Ferro Manganese (Ferro Alloy)] - 18,000 Tonnes Per Annum & Ferro Alloys - 30,000 Metric Tonnes/Annum or Pig Iron from 2 x 5.5 MVA Submerged Arc Furnaces - 56,000 Metric Tonnes Per Annum and Captive Power Plant – 20 Megawatt.

6. Environmental clearance issued by the Ministry of Environment, Forest and Climate Change, Government of India vide letter no. IA-J-11011/836/2008-IA-II(IND-I), dated: 05/02/2024 (EC Identification No. - EC23A1005CG5183604E).
7. Your online application dated 06/02/2024 and subsequent correspondence ending dated: 20/02/2024 (online application no. 14685492).

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Chhattisgarh Environment Conservation Board had issued amendment in "Permission to Establish" under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 4629/TS/CECB/2014 Raipur, dated: 31/10/2014 for CLU Converter within the process to enrich the quality of Ferro Alloys by reducing the carbon for manufacturing of Low / Medium Ferro Alloys capacity of 18,000 Metric Tonnes/Annum.

Subsequently, Chhattisgarh Environment Conservation Board had issued amendment in consent under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 vide letter no. 3614/TS/CECB/2016 Raipur, dated: 24/09/2016 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 3616/TS/CECB/2016 Raipur, dated: 24/09/2016 for CLU Converter within the process to enrich the quality of Ferro Alloys by reducing the carbon for manufacturing of Low / Medium Ferro Alloys capacity of 18,000 Metric Tonnes/Annum.

Combined consent issued under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 vide letter no. 208/TS/CECB/2018 Raipur, dated: 03/04/2018 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 210/TS/CECB/2018 Raipur, dated: 03/04/2018 for Ferro Alloys (including Low / Medium Ferro Alloys) - 18,000 Metric Tonnes/Annum and Ferro Alloys - 30,000 Metric Tonnes/Annum or Pig Iron from 2 x 5.5 MVA Submerged Arc Furnaces - 56,000 Metric Tonnes/Annum and Captive Power Plant – 20 MW. These consents are valid up to 31/03/2022.

Further, Amendment in consent was issued by Chhattisgarh Environment Conservation Board vide letter no. 781/TS/CECB/2018 Raipur, dated: 10/05/2019 for Alumino Thermic Process - 600 Metric Tonnes/Annum for production of Low / Medium Carbon Ferro Manganese (Ferro Alloy).

The renewal of consent for Ferro Alloys [including Low / Medium Ferro Alloys and Alumino Thermic Process - 600 Metric Tonnes/Annum for production of Low / Medium Carbon Ferro Manganese (Ferro Alloy)] - 18,000 Tonnes Per Annum & Ferro Alloys - 30,000 Metric Tonnes/Annum or Pig Iron from 2 x 5.5 MVA Submerged Arc Furnaces - 56,000 Metric Tonnes Per Annum and Captive Power Plant – 20 Megawatt vide letter no. 968/TS/CECB/2023 Nava Raipur, dated: 16/05/2023. The above consent is valid up to 31/03/2024.

Now, industry has submitted application for obtaining permission to establish cum amendment in consent of the Board under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air

(Prevention and Control of Pollution) Act, 1981 for expansion in Ferro Alloys Plant – 48,000 Metric Tonnes Per Annum to 64,000 Metric Tonnes Per Annum [Including Low / Medium Carbon Ferro Alloys 48,000 Tonnes Per Annum] through online application dated 06/02/2024 and subsequent correspondence ending dated: 20/02/2024 (online application no. 14685492).

Regional Officer, Chhattisgarh Environment Conservation Board, Raipur (C.G.) informed that industry has installed adequate air and water pollution control systems. Regional Officer, Chhattisgarh Environment Conservation Board, Raipur (C.G.) has recommended for permission to establish cum amendment in consent for expansion in Ferro Alloys Plant – 48,000 Metric Tonnes Per Annum to 64,000 Metric Tonnes Per Annum.

The facts submitted by the industry have been examined. After careful consideration of the facts & materials in record and in the view of the above, consent letter issued under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 vide letter no. 208/TS/CECB/2018 Raipur, dated: 03/04/2018 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 210/TS/CECB/2018 Raipur, dated: 03/04/2018 are hereby amended as follows for expansion in Ferro Alloys Plant – 48,000 Metric Tonnes Per Annum to 64,000 Metric Tonnes Per Annum [Including Low / Medium Carbon Ferro Alloys 48,000 Tonnes Per Annum], subject to fulfillment of the terms & conditions mentioned in the consent letter, renewal of consents, amendment in consents and following additional terms & conditions:-

(1) The consent shall be valid for following : -

S. No.	Name	Production Capacity
01	Ferro Alloys [Including Low / Medium Carbon Ferro Alloys 48,000 Tonnes Per Annum	64,000 Tonnes Per Annum (Sixty Four Thousand Tonnes Per Annum)
	Or	Or
	Pig Iron From 2 x 5.5 MVA Submerged Arc Furnaces	56,000 Tonnes Per Annum (Fifty Six Thousand Tonnes Per Annum)
02	Captive Power Plant	20 Megawatt (Twenty Megawatt)

(2) This consent shall be valid up-to 28/02/2025.

Additional Conditions

A. Water consent as per the Water (Prevention and Control of Pollution) Act, 1974

(1) Industry shall achieve increase in production of Ferro Alloys by improvement in efficiency and using better quality of raw materials without any change in plant and machinery. Industry shall ensure that after operation of expansion activity including existing Ferro Alloys, pollution load shall not exceed the existing load for which consent to operate had already been granted.

(2) Industry shall ensure completion of mitigation measures prescribed by CECB and adhere to the stipulations incorporated in the order issued by the Chhattisgarh Environment Conservation Board vide letter no.

8175/TS/CECB/2019 Nava Raipur Atal Nagar, dated: 17/12/2019 within the stipulated time schedule.

(3) Industry shall not use coal, pet-coke, furnace oil, LSHS as a fuel etc. (solid or liquid) as fuel under any circumstances. Industry shall not increase the quantity of coal in the power plant.

(4) Industry shall provide adequate effluent treatment system for treatment of industrial and domestic effluent. Industry shall operate and maintain the effluent treatment system regularly. Industry shall ensure treated effluent quality within the standards prescribed by Board published in Gazette Notification dated 25.03.88. Treated effluent shall be used in process or in beneficial uses within plant premises. Industry shall not discharge any treated / untreated effluent in to the river or any surface water bodies. No effluent shall be discharged outside of the factory premises in any circumstances; hence zero discharge condition shall be maintained at all the time. Chhattisgarh Environment Conservation Board may further stipulate stringent limit depending upon environmental conditions.

(5) Water shall be sourced from CSIDC limited. No ground water shall be used for industrial activities. Industry shall make arrangements like installation of digital water meter separately for underground as well as surface water, reuse of non potable water etc. as per NGT order dated 15/11/2022 on OA no. 392/2022 for use of water.

(6) Closed cycle cooling system shall be provided. Minimum water for makeup purposes shall be ensured. Industry shall provide adequate measuring arrangements for the measurement of water utilized in different categories and effluent generated before commissioning of the expansion activity. Industry shall only use treated effluent for preparation of lime / neutralization slurry / other slurry for use in ETP. No fresh water shall be utilized for such purposes. Industry shall use treated effluent for make-up of cooling water / process water as maximum as possible. Industry shall ensure no change in water consumption, sewage and industrial effluent generation.

(7) Industry shall install continuous monitoring of effluent quality / quantity as per CPCB guidelines for relevant parameters (like pH, Flow, Temperature, TOC/COD etc.) without delay and shall be connected to CECB / CPCB server. Industry shall also provide flow meter. Industry shall submit monitoring report of effluent regularly. Calibration and validation of data shall be carried out of all CWQMS and industry shall ensure availability of real time data in CECB / CPCB server.

(8) Industry shall use fly ash brick, fly ash block and fly ash based products in the construction/repairing activities. Industry shall also use fly ash for filling low-lying areas within plant premises.

(9) All raw materials/ finished products shall be stored above ground level with pucca platform in covered area. Industry shall provide safe and scientific arrangement for handling, storage and disposal of all solid wastes such as; slag and dust collected in air pollution control devices etc. Ferro silicon slag shall be provided to cast iron foundries for further utilization. Slag produced in Ferro Manganese (Fe –Mn) production, shall be used in manufacturing silico manganese (Si – Mn). All other solid wastes including broken refractory mass shall be properly disposed off in environment friendly manner. Oily waste shall be provided to authorized recyclers /re-processors. Industry shall obtain authorization from Board

for management and handling of hazardous materials as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (as amended) and comply with the rule. Industry shall strictly comply with all the measures specified in guidelines for spent solvent management, spent acid management, and other guidelines / directions published from time to time by CECB / CPCB / MoEF&CC. Industry shall ensure transportation of Hazardous Wastes through GPS mounted vehicles.

(10) Industry shall ensure transportation of raw materials, fuel, dust generating products by properly covered vehicles. Industry shall also ensure use of mechanically covered vehicles for transportation of raw materials, fuel, dust generating products on or before 12/07/2024.

(11) All internal roads shall be maintained pucca. Industry shall adopt good housing keeping practice. Vehicle movement areas / roads within premises shall be maintained pucca from drain to drain to avoid dusting without delay.

(12) Industry shall enhance the capacity of rainwater-harvesting structures in the project area and residential area (if any) for recharge of ground water. Industry shall develop rainwater-harvesting structures and reservoirs / ponds to harvest the rainwater for utilization in the lean season as well as to recharge the ground water table. Industry shall ensure recharging of ground water by rainwater harvesting of at-least double the quantity of water use by them in expansion activities, which shall be done within or outside the premises.

(13) Wide green belt of broad leaf local species shall be developed along the plant premises. As far as possible maximum area of open spaces shall be utilized for plantation purposes. Green belt / plantation shall be developed within the plant premises in at-least 40% area of total plant area. Development of green belt / plantation outside project premises in adjacent areas such as avenue plantation, plantation in vacant areas, social forestry, etc. shall also be ensured.

(14) Industry shall submit performance test report pollution control equipments conducted by IoR (IIT/NIT/NABL Accredited) etc. every year.

(15) Industry shall submit third party verification report of CTE/CTO condition every year.

(16) Industry shall submit certificate regarding adequacy of roads based on carrying capacity of transportation of roads from concerned government authority within one month.

(17) Industry shall ensure compliance of mitigation measures and stipulation of conditions issued by Ministry of Environment, Forest and Climate Change, Government of India (MoEF&CC) / Central Pollution Control Board (CPCB) from time to time regarding environmental management of critically polluted areas.

(18) If industry fails to comply any of the above condition(s), the bank guarantee submitted by industry may be forfeited and this amendment in consent may be cancelled without further notice.

B. <u>Air Consent as per the Air (Prevention and Control of Pollution) Act, 1981</u>

(1) Industry shall achieve increase in production of Ferro Alloys by improvement in efficiency and using better quality of raw materials without any change in plant and machinery. Industry shall ensure that after operation of expansion activity including existing Ferro Alloys, pollution load shall not exceed the existing load for which consent to operate had already been granted.

(2) Industry shall ensure completion of mitigation measures prescribed by CECB and adhere to the stipulations incorporated in the order issued by the Chhattisgarh Environment Conservation Board vide letter no. 8175/TS/CECB/2019 Nava Raipur Atal Nagar, dated: 17/12/2019 within the stipulated time schedule.

(3) Industry shall not use coal, pet-coke, furnace oil, LSHS as a fuel etc. (solid or liquid) as fuel under any circumstances. Industry shall not increase the quantity of coal in the power plant.

(4) Industry shall install appropriate air pollution control systems to ensure the particulate matter emission from any point source below 25 mg/Nm^3 all the time. Industry shall provide appropriate dust suppression/dust extraction system with bag filters at all fugitive dust emission sources such as material / wastes loading, unloading, handling, conveying system, transfer points/junction points, stock house etc. Good housekeeping practices shall be adopted by the industry. Industry shall also maintain the ambient air quality within the factory premises within prescribed limits. Chhattisgarh Environment Conservation Board may further stipulate stringent particulate matter emission limit depending upon environmental conditions.

(5) The minimum height of stack(s) shall be based on $H=14(Q)^{0.3}$ (where Q is emission rate of SO_2 in Kg/Hr. and H is Stack height in meters) or as per guidelines of Ministry of Environment, Forest and Climate Change, Government of India/Central Pollution Control Board or 30 meters (whichever is higher).

(6) Industry shall provide appropriate dust suppression / dust extraction system at all fugitive dust emission sources such as raw material handling, product and wastes handling section, conveying system, transfer points/junction points, stock house etc. All conveyor belt, all transfer points, all junction points etc. shall be completely closed to avoid fugitive emission. All transfer points / junction points shall be fitted with dust suppression system followed by bag filter. Industry shall also install water sprinkler system for dust suppression at all vulnerable points / areas to control fugitive dust emission.

(7) Industry shall adhere to sector specific guidelines / SOP published by CPCB from time to time for effective fugitive emission control. Industry shall maintain fugitive dust emissions to the minimum level in the areas of road transportation routes of raw materials and wastes to ensure Ambient Air Quality within latest prescribed standard. Black topping/asphalting/concreting and maintenance with requisite water sprinkling arrangements shall be ensured.

(8) Industry shall ensure regular running of Continuous Emission Monitoring System - CEMS (as per CPCB guidelines for relevant parameters) in all the stack(s) of existing and shall be connected with CECB/CPCB server. Calibration and validation of data shall be carried out of all CEMS / CAAQMS and industry shall ensure availability of real time data in CECB / CPCB server.

(9) Industry shall use fly ash brick, fly ash block and fly ash based products in the construction/repairing activities. Industry shall also use fly ash for filling low-lying areas within plant premises.

(10) All raw materials/ finished products shall be stored above ground level with pucca platform in covered area. Industry shall provide safe and scientific arrangement for handling, storage and disposal of all solid wastes such as; slag and dust collected in air pollution control devices etc. Ferro silicon slag shall be provided to cast iron foundries for further utilization. Slag produced in Ferro Manganese (Fe –Mn) production, shall be used in manufacturing silico manganese (Si – Mn). All other solid wastes including broken refractory mass shall be properly disposed off in environment friendly manner. Oily waste shall be provided to authorized recyclers /re-processors. Industry shall obtain authorization from Board for management and handling of hazardous materials as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (as amended). Industry shall strictly comply with all the measures specified in guidelines for spent solvent management, spent acid management, and other guidelines / directions published from time to time by CECB / CPCB / MoEF&CC. Industry shall ensure transportation of Hazardous Wastes through GPS mounted vehicles.

(11) Industry shall ensure transportation of raw materials, fuel, dust generating products by properly covered vehicles. Industry shall also ensure use of mechanically covered vehicles for transportation of raw materials, fuel, dust generating products on or before 12/07/2024.

(12) All internal roads shall be maintained pucca. Industry shall adopt good housing keeping practice. Vehicle movement areas / roads within premises shall be maintained pucca from drain to drain to avoid dusting without delay.

(13) Wide green belt of broad leaf local species shall be developed along the plant premises. As far as possible maximum area of open spaces shall be utilized for plantation purposes. Green belt / plantation shall be developed within the plant premises in at-least 40% area of total plant area. Development of green belt / plantation outside project premises in adjacent areas such as avenue plantation, plantation in vacant areas, social forestry, etc. shall also be ensured.

(14) Industry shall submit performance test report pollution control equipments conducted by IoR (IIT/NIT/NABL Accredited) etc. every year.

(15) Industry shall submit third party verification report of CTE/CTO condition every year.

(16) Industry shall submit certificate regarding adequacy of roads based on carrying capacity of transportation of roads from concerned government authority within one month.

(17) Industry shall ensure compliance of mitigation measures and stipulation of conditions issued by Ministry of Environment, Forest and Climate Change, Government of India (MoEF&CC) / Central Pollution Control Board (CPCB) from time to time regarding environmental management of critically polluted areas.

(18) If industry fails to comply any of the above condition(s), the bank guarantee submitted by industry may be forfeited and this amendment in consent may be cancelled without further notice.

The other terms and conditions mentioned in consent letter issued under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 vide letter no. 208/TS/CECB/2018 Raipur, dated: 03/04/2018 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 210/TS/CECB/2018 Raipur, dated: 03/04/2018, renewal of consents, amendment in consents shall remain unchanged. Please keep this letter along with original consent letters.

Please acknowledge the receipt of this letter.

For & on behalf of
Chhattisgarh Environment Conservation Board

Member Secretary
Chhattisgarh Environment Conservation Board
Atal Nagar, District - Raipur (C.G.)

Endt. No. 10519 /TS/CECB/2024 Nava Raipur Atal Nagar, Dated 28 /03/ 2024

Copy to: -

Regional Officer, Regional Office, Chhattisgarh Environment Conservation Board, Raipur (C.G.). Please inspect the industry and ensure compliance of consent / renewal condition(s) and take action as per law, if any condition/conditions are violated by the industry.

Sd/-
Member Secretary
Chhattisgarh Environment Conservation Board
Atal Nagar, District - Raipur (C.G.)

HIRA POWER & STEELS

क्रमांक : 2002/एचपीएसएल/2024-25/2002 दिनांक : 06.04.2024

प्रति,
श्रीमान क्षेत्रीय अधिकारी,
छ.ग.पर्यावरण संरक्षण मण्डल,
न्यू ऑफिस बिल्डिंग, रिंग रोड नं.2,
टाटीबंध, रायपुर–492099 (छ.ग.)

विषयः "छत्तीसगढ़–विजन-2047" के अंतर्गत कार्ययोजना तैयार किये जाने बावत् बैठक।

संदर्भः (1) मंडल मुख्यालय का पत्र पृष्ठांकन क्रमांक 10402 दिनांक 22.03.2024 (प्राप्त दिनांक 28.03.2024)
(2) आपका पत्र क्रमांक 20/क्षेका/तक/छ.ग.प.मं./2024 रायपुर दिनांक 01.04.2024

महोदय,

आपके द्वारा **"छत्तीसगढ़–विजन-2047"** के अंतर्गत चाही गई जानकारी प्रेषित प्रपत्र में संलग्न कर सादर प्रेषित है।

सधन्यवाद

भवदीय,
वास्ते, हीरा पॉवर एण्ड स्टील्स लिमिटेड, यूनिट–2

अधिकृत हस्ताक्षरकर्ता

संलग्नः उपरोक्तानुसार

प्रतिलिपिः श्रीमान सदस्य सचिव, छ.ग. पर्यावरण संरक्षण मण्डल, पर्यावास भवन, नार्थ ब्लॉक, सेक्टर-19, नया रायपुर (छ.ग.)-492002

थर्मल पावर प्लांट (स्टेण्ड अलोन) सेक्टर हेतु "छत्तीसगढ़-विजन 2047" के अंतर्गत कार्ययोजना तैयार किये जाने बाबत प्रस्तावित बैठक में चर्चा के बिन्दु

उद्योग का नाम एवं पता – हीरा पावर एण्ड स्टील्स् लिमिटेड, उरला इण्डस्ट्रीयल कॉम्प्लेक्स, उरला, रायपुर (छ.ग.)
वार्षिक टर्न ओवर – कैप्टिव उपयोग (कुल वार्षिक उत्पादन – 101087498 युनिट)

सं. क्रमांक	चर्चा के बिंदु	अनुपालन	टिप्पणियाँ
1.	उत्पादन योजना (उत्पादन क्षमता में वृद्धि (01 वर्ष, प्रत्येक 05 वर्ष, कुल 25 वर्ष हेतु)		
	01 वर्ष हेतु	20 MW (Existing)	
	05 वर्ष हेतु	20 MW (Existing)	
	25 वर्ष हेतु	Solar Plant	
2.	वर्तमान एवं भविष्य की उत्पादन प्रक्रिया (तकनीकी उन्नयन के दृष्टिकोण से 01 वर्ष, प्रत्येक 05 वर्ष, कुल 25 वर्ष हेतु) -		
	(क) वर्तमान हेतु	Thermal Power Plant	We shall adopt the next level of latest technologies which will be available in India, for our presently installed Pollution Control Equipment to improve air and water quality up to 2047. It is well known fact that we have improved in past, the air and water quality by using latest technology in our Pollution control equipment. It is evident that we have reduced Pollution of stack from 120 Nm3/Hr in the year 2000 to 50 Nm3/Hr in the year 2024.
	(ख) 01 वर्ष की अवधि हेतु	Thermal Power Plant	
	(ग) प्रथम 05 वर्ष,	Thermal Power Plant	
	(घ) द्वितीय 05 वर्ष,	Solar Plant	
	(च) तृतीय 05 वर्ष,	Solar Plant	
	(छ) चतुर्थ 05 वर्ष	Solar Plant	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	Solar Plant	
3.	वर्तमान एवं भविष्य में की जाने वाली वायु प्रदूषण नियंत्रण व्यवस्था यथा ई.एस.पी., ई.एस.पी. कम बैग हाउस (हाईब्रिड सिस्टम), फ्लू गैस डि-सल्फराईजेशन, लो एन.ओ. एक्स बर्नर आदि की स्थापना-		

	(क) वर्तमान हेतु	ESP	We shall adopt the latest technologies which will be available in India, for our presently installed Pollution Control Equipment to improve air and water quality up to 2047.It is well known fact that we have improved in past, the air and water quality by using latest technology in our Pollution control equipment. It is evident that we have reduced Pollution of stack from 120 Nm3/Hr in the year 2000 to 50 Nm3/Hr in the year 2024.
	(ख) 01 वर्ष की अवधि हेतु	ESP	
	(ग) प्रथम 05 वर्ष,	ESP	
	(घ) द्वितीय 05 वर्ष,	-	
	(च) तृतीय 05 वर्ष,	-	
	(छ) चतुर्थ 05 वर्ष एवं	-	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	-	
4.	वर्तमान एवं भविष्य में की जाने वाली जल प्रदूषण नियंत्रण व्यवस्था यथा बायलर, डी.एम. प्लांट, कूलिंग टावर, कोल हैण्डलिंग प्लांट, एश हैण्डलिंग प्लांट, एश डाईक, वर्कशॉप, कालोनी आदि से उत्पन्न दूषित जल के उपचार हेतु पर्याप्त क्षमता का ई.टी.पी. एस.टी. पी एवं पुर्नउपयोग व्यवस्था (शुन्य निस्सारण की स्थिति बनाये जाने)-		
	(क) वर्तमान हेतु	Siltation Tank and Sewage Treatment Plant is installed and zero liquid discharge is maintained. Ash is transported to fly ash silo through dry ash conveying system.	Earlier we had water cooled technology but now We have reduced our water consumption by adopting air cooled technology due to which drift loss got reduced from 0.75 % to 0.3 %.
	(ख) 01 वर्ष की अवधि हेतु	Siltation Tank and Sewage Treatment Plant is installed and zero liquid discharge is maintained. Ash is transported to fly ash silo through dry ash conveying	

		system.	
	(ग) प्रथम 05 वर्ष,	Siltation Tank and Sewage Treatment Plant is installed and zero liquid discharge is maintained. Ash is transported to fly ash silo through dry ash conveying system.	
	(घ) द्वितीय 05 वर्ष,	-	
	(च) तृतीय 05 वर्ष,	-	
	(छ) चतुर्थ 05 वर्ष एवं	-	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	-	
5.	वर्तमान एवं भविष्य में प्रस्तावित चिमनी उत्सर्जन स्तर (पर्टिकुलेट मेटर एवं मानक अनुसार अन्य प्रदूषक)		
	(क) वर्तमान हेतु	50 mg/Nm3	We shall adopt the next level of latest technologies which will be available in India, for our presently installed Pollution Control Equipment to improve air and water quality up to 2047.It is well known fact that we have improved in past, the air and water quality by using latest technology in our Pollution control equipment. It is evident that we have reduced Pollution of stack from 120 Nm3/Hr in the year 2000 to 50 Nm3/Hr in the year 2024.
	(ख) 01 वर्ष की अवधि हेतु	50 mg/Nm3	
	(ग) प्रथम 05 वर्ष,	50 mg/Nm3	
	(घ) द्वितीय 05 वर्ष,	No emission(Solar plant)	
	(च) तृतीय 05 वर्ष,	No emission (Solar Plant)	
	(छ) चतुर्थ 05 वर्ष एवं	No emission(Solar Plant)	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	No emission(Solar Plant)	
6.	वर्तमान एवं भविष्य में प्रस्तावित फ्यूजिटिव डस्ट उत्सर्जन के नियंत्रण हेतु व्यवस्था (कोल हैण्डलिंग प्लांट, स्टेकर रिकलेमर, क्रशर, एश हैण्डलिंग प्लांट, एश साईलो, विभिन्न ट्रांस्फर पाईदूस आदि)		

	(क) वर्तमान हेतु	We have installed coal handling Plant and Ash Silo	
	(ख) 01 वर्ष की अवधि हेतु	We have installed coal handling Plant and Ash Silo	
	(ग) प्रथम 05 वर्ष,	We have installed coal handling Plant and Ash Silo	
	(घ) द्वितीय 05 वर्ष,	Not required	we will be installing Solar Plant.
	(च) तृतीय 05 वर्ष,	Not required	
	(छ) चतुर्थ 05 वर्ष एवं	Not required	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	Not required	
7.	वर्तमान एवं भविष्य में प्रस्तावित परिवेशीय वायु गुणवत्ता मॉनिटरिंग परिणाम (पीएम$_{10,}$ पीएम$_{2.5,}$ सल्फर डाई आक्साईड, नाईट्रोजन आक्साईड) -		
	(क) वर्तमान हेतु	PM10- 70.5 ug/m3,PM2.5-34.8 ug/m3, SO2-18.2 ug/m3,NO2-24.0 ug/m3	
	(ख) 01 वर्ष की अवधि हेतु	PM10- 70.5 ug/m3,PM2.5-34.8 ug/m3, SO2-18.2 ug/m3,NO2-24.0 ug/m3	
	(ग) प्रथम 05 वर्ष,	PM10- 70.5 ug/m3,PM2.5-34.8 ug/m3, SO2-18.2 ug/m3,NO2-24.0 ug/m3	
	(घ) द्वितीय 05 वर्ष,	No emission (Solar Plant)	We will be installing Solar Plant.
	(च) तृतीय 05 वर्ष,	No emission (Solar Plant)	
	(छ) चतुर्थ 05 वर्ष एवं	No emission (Solar Plant)	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	No emission (Solar Plant)	
8.	वर्तमान एवं भविष्य में प्रस्तावित उपचारित दूषित जल की मात्रा, गुणवत्ता तथा अपवहन की व्यवस्था -		
	(क) वर्तमान हेतु	Domestic – 23.2 KL (Septic Tank and Soak pit),Cooling blow down- 47.3 KLD (Recycled) and Boiler blow down- 12 KLD Neutralization Pit.	Earlier we had water cooled technology but now We have reduced our water consumption by adopting air cooled technology due to which drift loss got reduced
	(ख) 01 वर्ष की अवधि हेतु	Domestic – 23.2 KL (Septic Tank and Soak	

		pit),Cooling blow down- 47.3 KLD (Recycled) and Boiler blow down- 12 KLD Neutralization Pit.	from 0.75 % to 0.3 %.
	(ग) प्रथम 05 वर्ष,	Domestic – 23.2 KL (Septic Tank and Soak pit),Cooling blow down- 47.3 KLD (Recycled) and Boiler blow down- 12 KLD Neutralization Pit.	
	(घ) द्वितीय 05 वर्ष,	No usage of water	We will be installing Solar Plant.
	(च) तृतीय 05 वर्ष,	No usage of water	
	(छ) चतुर्थ 05 वर्ष एवं	No usage of water	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	No usage of water	
9.	वर्तमान एवं भविष्य में परिसर एवं आसपास भू-जल स्त्रोत्र का स्तर, स्तर बनाये रखनें हेतु उपाय एवं गुणवत्ता --		
	(क) वर्तमान हेतु	Source of Groudwater-Borewell, RWH structures are provided to harvest the rain water around the plant area and roof top.The collected rain water is being utilized for plant uses to minimize the raw water requirement from the source. Industry have already installed 06 New Rain Water Harvesting systems for Rain water Harvesting purposes.	
	(ख) 01 वर्ष की अवधि हेतु	Source of Groudwater-Borewell, RWH structures are provided to harvest the rain water around the plant area and roof top.The collected rain water is being utilized for plant uses to minimize the raw water requirement from the source. Industry have already installed 06 New Rain Water Harvesting systems for Rain water Harvesting purposes.	

	(ग) प्रथम 05 वर्ष,	Source of Groudwater-Borewell, RWH structures are provided to harvest the rain water around the plant area and roof top.The collected rain water is being utilized for plant uses to minimize the raw water requirement from the source. Industry have already installed 06 New Rain Water Harvesting systems for Rain water Harvesting purposes.	
	(घ) द्वितीय 05 वर्ष,	Not required	
	(च) तृतीय 05 वर्ष,	Not required	
	(छ) चतुर्थ 05 वर्ष एवं	Not required	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	Not required	
10.	वर्तमान एवं भविष्य में प्रस्तावित राखड़ (फ्लाई एश एवं बॉटम एश) की मात्रा, भारत सरकार के अधिसूचना दिनांक 31/12/2021 के अनुसार विभिन्न कार्यों में उपयोग की मात्रा तथा शेष मात्रा के अपवहन की व्यवस्था-		
	(क) वर्तमान हेतु	Fly Ash- 28912.34 MT(Jan'2023 to Dec'2023)	Ash compliance report is already submitted to competent authority prepared by NIT, Uttarkhand.
	(ख) 01 वर्ष की अवधि हेतु	-	
	(ग) प्रथम 05 वर्ष,	-	
	(घ) द्वितीय 05 वर्ष,	-	
	(च) तृतीय 05 वर्ष,	-	
	(छ) चतुर्थ 05 वर्ष एवं	-	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	-	
11.	वर्तमान में क्रियाशील एश डाईक की संख्या, क्षेत्रफल, कुल भराव क्षमता, वर्तमान में भराव की मात्रा एवं शेष भराव हेतु उपलब्ध क्षमता, एश वाटर रि-सर्कुलेशन सिस्टम, राखड़ उड़ने		

	से रोकने हेतु व्यवस्था, वृक्षारोपण -		
	(क) वर्तमान हेतु	Not applicable	
	(ख) 01 वर्ष की अवधि हेतु	Not applicable	
	(ग) प्रथम 05 वर्ष,	Not applicable	
	(घ) द्वितीय 05 वर्ष,	Not applicable	
	(च) तृतीय 05 वर्ष,	Not applicable	
	(छ) चतुर्थ 05 वर्ष एवं	Not applicable	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	Not applicable	
12.	वर्तमान में निष्क्रिय राखड़बांधों की संख्या, क्षेत्रफल, मिट्टी की परत बिझाए जाने का क्षेत्रफल एवं वृक्षारोपण एवं इसके अन्य उपयोग किये जाने की दिशा में प्रस्ताव -		
	(क) वर्तमान हेतु	Not applicable	
	(ख) 01 वर्ष की अवधि हेतु	Not applicable	
	(ग) प्रथम 05 वर्ष,	Not applicable	
	(घ) द्वितीय 05 वर्ष,	Not applicable	
	(च) तृतीय 05 वर्ष,	Not applicable	
	(छ) चतुर्थ 05 वर्ष एवं	Not applicable	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	Not applicable	
13.	वर्तमान एवं भविष्य में प्रस्तावित वृक्षारोपण की जानकारी (कुल प्लांट परिसर का क्षेत्रफल, वृक्षारोपण हेतु उपलब्ध भूमि क्षेत्रफल, रोपित वृक्षों की संख्या एवं प्रकार, जीवित वृक्षों की संख्या एवं प्लांट परिसर की तुलना में वृक्षारोपण का प्रतिशत, बड़े वृक्ष यथा बरगद, पीपल, नीम, ऑवला आदि का रोपण की स्थिति एवं प्रस्ताव)-		
	(क) वर्तमान हेतु	Plant area = 44 acres, Area available for plantation= 17.59 acres, Total Plantation done = 23651 No. Inside=20503 No. ,Alive plants=18413 No. Outside=3148 No.,Alive Plants=1958 No.	Types of Plants =Badam, Neem, Amla, Gulmohar, tikoma,Peltapharm, karang, Bottle brush, lily, sisam, kaner, arjun, coconut, Nilgiri,

		Plantation is done in more than 40% of plant area as per the norms.	bamboo, bargad, peepal, kadam,sykas,bottle palm, sishoo etc.
	(ख) 01 वर्ष की अवधि हेतु	200 No. in the upcoming monsoon	
	(ग) प्रथम 05 वर्ष,	Gap filling	
	(घ) द्वितीय 05 वर्ष,	Gap filling	
	(च) तृतीय 05 वर्ष,	Gap filling	
	(छ) चतुर्थ 05 वर्ष एवं	Gap filling	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	Gap filling	
14.	कोयले का रेल से परिवहन सुनिश्चित करने एवं रेल वेगन को ढंककर परिवहन सुनिश्चित करने बाबत जानकारी-		
	(क) वर्तमान हेतु	Transportation by railway wagon is done by tarpaulin covers.	
	(ख) 01 वर्ष की अवधि हेतु	Transportation by railway wagon will be done by tarpaulin covers.	
	(ग) प्रथम 05 वर्ष,	Transportation by railway wagon will be done by tarpaulin covers.	
	(घ) द्वितीय 05 वर्ष,	Not required as we will shift to solar power	
	(च) तृतीय 05 वर्ष,	Not required as we will shift to solar power	
	(छ) चतुर्थ 05 वर्ष एवं	Not required as we will shift to solar power	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	Not required as we will shift to solar power	
15.	01 वर्ष, प्रत्येक 05 वर्ष, 25 वर्ष हेतु पर्यावरण संरक्षण एवं प्रदूषण नियंत्रण हेतु उपरोक्त बिन्दुओं को सम्मिलित करते हुये विस्तृत कार्ययोजना-		
	(क) वर्तमान हेतु	**Measures to control pollution** • All internal concrete road have been constructed as per specification.	1. We shall adopt the next level of latest technologies which will be available in India, for our presently installed

		green belt. • Effluent disposal- Process water from all the units is taken to neutralization tank where it is treated and send to siltation tank from where it is reused for dust suppression, Ash conditioning etc. • Domestic water to be Treated in Sewage treatment Plant and utilized for Plantation.	
	(ख) 01 वर्ष की अवधि हेतु	As per above	
	(ग) प्रथम 05 वर्ष,	As per above	
	(घ) द्वितीय 05 वर्ष,	As per above	
	(च) तृतीय 05 वर्ष,	As per above	
	(छ) चतुर्थ 05 वर्ष एवं	As per above	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	As per above	
16.	फ्लाई ऐश के उपयोग से संबंधित भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली की अधिसूचना दिनांक 31/12/2021 के अनुसार खुली कोयला खदान में ओव्हर बर्डन एवं बेक फिलिंग हेतु राखड़ उपलब्ध कराये जाने की योजना (मात्रा सहित) –		
	(क) वर्तमान हेतु	We are supplying generated fly ash to the bricks manufacturing units and no balance fly ash is left to supply to abandoned mines.	
	(ख) 01 वर्ष की अवधि हेतु	We will be supplying generated fly ash to the bricks manufacturing units and no balance fly ash is left to supply to abandoned mines.	
	(ग) प्रथम 05 वर्ष,	We will be supplying generated fly ash to the bricks manufacturing units and no balance fly ash is left to supply to abandoned mines.	

		• Stack is well equipped with continuous emission monitoring system along with remote calibration facility for gaseous parameters. • Fugitive as well ambient air quality monitoring is being/will be carried out on regular basis to ensure the compliance with National Ambient Air Quality Standards (NAAQS). The ambient air quality within the factory premises shall not exceed the standards (PM_{10} 100 mg/m_3, $PM_{2.5}$ 60 mg/m_3 SO_2 80mg/m_3 and NO_x 80 mg/m_3 prescribed by CPCB. • Water sprinklers are installed on all internal roads, raw material storage yard to control fugitive dust emission. • Proper dust masks are being/will be provided to workers coming in direct contact of fugitive emissions • Adequate greenbelt will be developed in the plant area. Greenbelt acts as a surface for settling of dust particles and thus reduces the concentration of particulate matter in air. • Ambient air quality is being/will be regularly monitored, so as to keep a check on the emissions of different pollutants. • Noise pollution control measures will be provided in respective departments by way of providing silencers soundproofs cubicles / covers and proper selection of less noise prone machinery and by development of	Pollution Control Equipment to improve air and water quality up to 2047.It is well known fact that we have improved in past, the air and water quality by using latest technology in our Pollution control equipment. It is evident that we have reduced Pollution of stack from 120 Nm3/Hr in the year 2000 to 50 Nm3/Hr in the year 2024. 2. Earlier we had water cooled technology but now We have reduced our water consumption by adopting air cooled technology due to which drift loss got reduced from 0.75 % to 0.3 %.

	(घ) द्वितीय 05 वर्ष,	No generation of fly ash as we will shift to solar generation.	
	(च) तृतीय 05 वर्ष,	No generation of fly ash as we will shift to Solar generation.	
	(छ) चतुर्थ 05 वर्ष एवं	No generation of fly ash as we will shift to Solar generation.	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	No generation of fly ash as we will shift to Solar generation.	
17.	औद्योगिक स्वास्थ्य एवं सुरक्षा के दृष्टि से वर्तमान एवं भविष्य में प्रस्तावित पीपीई के उपयोग का विवरण -		
	(क) वर्तमान हेतु	Handgloves=165 Nos. Shoes gumboots=180 Nos. Apron=90 Nos. Goggles=160 Pairs Nosemask=120 Nos. Earplus=155 Nos. Helmet=180 Nos. Flush and showers=04 Points	
	(ख) 01 वर्ष की अवधि हेतु	As per the requirements	
	(ग) प्रथम 05 वर्ष,	As per the requirements	
	(घ) द्वितीय 05 वर्ष,	As per the requirements	
	(च) तृतीय 05 वर्ष,	As per the requirements	
	(छ) चतुर्थ 05 वर्ष एवं	As per the requirements	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	As per the requirements	
18.	वर्तमान एवं भविष्य में प्रस्तावित उत्पादन हेतु अकुंशल/अर्धकुशल /कुशल मानव संसाधन की आवश्यक संख्या (नियमित एवं कांन्ट्रेक्ट आधार पर) -		
	(क) वर्तमान हेतु	Permanent = 523 Nos. Temporary= 183 Nos. Total=706 Nos.	
	(ख) 01 वर्ष की अवधि हेतु	Permanent = 523 Nos.	

		Temporary= 183 Nos. Total=706 Nos.	
	(ग) प्रथम 05 वर्ष,	Permanent = 523 Nos. Temporary= 183 Nos. Total=706 Nos.	
	(घ) द्वितीय 05 वर्ष,	Reduce manpower as we will shift to Solar Power generation.	
	(च) तृतीय 05 वर्ष,	Reduce manpower as we will shift to Solar Power generation.	
	(छ) चतुर्थ 05 वर्ष एवं	Reduce manpower as we will shift to Solar Power generation.	
	(ज) पंचम 05 वर्ष की अवधि हेतु।	Reduce manpower as we will shift to Solar Power generation.	

HIRA POWER & STEELS LTD.
RAIPUR (C.G.)

Annexure-XIX




"EK PED MA KE NAAM"


"EK PED MA KE NAAM"