



A Maharatna Company

एन टी पी सी लिमिटेड

(भारत सरकार का उद्यम)

NTPC Limited

(A Govt. of India Enterprise)

एन टी पी सी, बरौनी /NTPC, Barauni

संदर्भसंख्या/Ref No:Ref:/BARAUNI TPS/EMG/2024/EC/02

दिनांक/Date 26.11.2024

To,

Regional Office (East Central Zone),
Ministry of Environment, Forest & Climate Change,
Bungalow No. A2, Shyamil Colony,
Ranchi – 834002
Email: ro.ranchi-mef@gov.in

Subject : Half Yearly Compliance Report of condition stipulated in Environmental Clearance of 2X250 MW Barauni (Extension) Thermal Power Station at Barauni Block, District Begusarai & Patna, Bihar for the period of April,2024 to September,2024.

MOEF&CC Ref: EC letter no. J-13012/143/2008-IA.II(T) dated 08.05.2014 and 22.04.2020

Dear Sir,

Kindly find enclosed Half Yearly Compliance Report regarding compliance of conditions stipulated in Environmental Clearance accorded by MOE&CC vide letter no. J-13012/143/2008-IA.II(T) dated 08.05.2014 and 22.04.2020 for Barauni TPS Stage-II (2x250 MW) for the period 01.04.2024 to 30.09.2024.

This is for your kind information please.

Thanking You

Yours faithfully

(Sankalp Srivastava)

Sr. Manager (EMG & AU)

For & on behalf of Barauni TPS

SANKALP SRIVASTAVA / संकल्प श्रीवास्तव
SENIOR MANAGER / वरिष्ठ प्रबंधक
(EMG & AU) / पर्यावरण प्रबंधन एवं राख उपयोगिता
NTPC Limited / एन टी पी सी बरौनी
Begusarai-851116 / बेगूसराय-851116

Encl : As above

Copy to : (i) Regional Office, Bihar Pollution Control Board, Barauni, Dist. Begusarai.
(ii) Regional Director, CPCB, Kolkata

बरौनी थर्मल पावर स्टेशन, बीटीपीएस, बरौनी, जिला- बेगूसराय – 851116 (बिहार),

Barauni Thermal Power Station, BTPS, Barauni, Dist. - Begusarai - 851116 (Bihar)

Registered Office: NTPC Bhawan, SCOPE Complex, 7 Institutional Area, Lodhi Road, New Delhi- 110003

Corporate Identification Number- L40101DL1975GO1007966, Website- www.ntpc.co.in

**HALF-YEARLY COMPLIANCE REPORT OF BARAUNI THERMAL POWER
PLANT STAGE-II (2x250 MW) of NTPC LIMITED
(April'2024 to September'2024)**

COMPLIANCE STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS

Vide Letter No. J- 13012/143/2008-IA. II (T) Dated 08^h May 2014

SI No	MoEF&CC STIPULATIONS	STATUS AS ON 30.09.2024
A. Specific Conditions:		
(i)	Vision document specifying prospective plan for the site shall be formulated and submitted to the Regional Office of the Ministry within six months.	Complied. NTPC vide its letter dated 19.04.2019 has submitted a Project Vision Document to the Regional Office of Ministry of Environment and Forest & Climate Change (MoEF&CC) at Ranchi.
(ii)	Scheme for implementation for harnessing solar power within the premises of the plant particularly at available roof tops shall be formulated and status of implementation shall be submitted periodically to the Regional Office of the Ministry from time to time.	The contract for 900 KW roof top solar system has been awarded. About 162 KWe capacity of Soal Roof top has been commissioned. Solar road lights at various places in township has been installed.
(iii)	Sulphur and ash contents in the coal to be used in project shall not exceed 0.6% and 40.1% respectively at any given time. In case of variance of coal quality at any point of time fresh reference shall be made to the Ministry for suitable amendments to environmental clearance Condition(S) wherever necessary.	Complied. As per MoEF&CC Notification dated 21.05.2020, stipulations with regard to ash content in coal used by Thermal Power Plants are waived-off. However, the details of coal received w.r.t source and distance from FY2020-21, 2021-22, 2022-23, 2023-24 is enclosed herewith as Annexure-I .

SI No	MoEF&CC STIPULATIONS	STATUS AS ON 30.09.2024
(iv)	A stack of 275 m height shall be provided with continuous online monitoring equipment for SO _x , NO _x , and PM _{2.5} & PM ₁₀ . Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack shall also be monitored on periodic basis.	Complied. Equipment for continuous online monitoring of PM _{2.5} & PM ₁₀ in stack emissions is not available in market. Therefore, continuous online monitoring equipment for SO _x , NO _x , and PM has been installed in stack. However, flue gas velocity is more than 22 m/sec and Mercury emissions from stack are being monitored periodically by third party lab approved by BSPCB and MOEF&CC. Copy of stack monitoring report during compliance period is enclosed as Annexure-II .
(v)	High Efficiency Electrostatic Precipitator (ESPs) shall be installed to ensure that particulate emission from the proposed plant does not exceed 50 mg/Nm ³ .	Complied. High Efficiency Electrostatic Precipitator (ESPs) are under operation.
(vi)	Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points transfer areas and other vulnerable dusty areas shall be provided.	Dust suppression has been commissioned in coal handling plant, coal stock yard area, ash handling points and conveyor belts and transfer points for control of fugitive dust emissions. Water sprinkling is being done on roads to minimize dust emissions. Dust extraction system is under Trial operation stage.
(vii)	Fly ash shall not be used for agricultural purpose. No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted. Prior from an institute of repute and adequate	Complied. Pond ash is being utilized in road construction, highway, ROB etc. Therefore, the option for mine void filling is not adopted. Fly ash has not been used in agriculture during compliance period.

SI No	MoEF&CC STIPULATIONS	STATUS AS ON 30.09.2024
	<p>clay lining area shall be ascertained by the State Pollution Control Board and implementation done in close coordination with the State Control Board.</p>	
(viii)	<p>Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry form. Mercury and other heavy metals (As. Hg. Cr. Pb etc). will be monitored in the bottom ash as also in the effluents emanating from the existing pond, No ash shall be disposed off in low lying area.</p>	<p>Complied. Two Number of Ash Silos of 1300 MT capacity each are under operation for storing and evacuation of fly ash.</p> <p>Heavy metal monitoring is being done in Bottom ash (pond) periodically. Fly ash is being lifted by Cement Industries, ash brick industries and Pond Ash in NHA, road projects etc. Ash water from ash pond is completely recycled to power plant for ash slurry preparation. No effluent is being discharge from existing ash ponds.</p>
(ix)	<p>Ash pond shall be lined with HDPE/LDPE or any other suitable impermeable media so that no leachate takes place at any point of time. A strong embankment shall be constructed around the ash dyke and TPP to prevent any flood water entering the site. The stability of these embankment shall be studied by reputed institutes like CWPRS, Pune and the recommendations of the institute shall be accordingly implemented.</p>	<p>The 56 Acres contingency dyke has two lagoons. Impermeable LDPE lining work in Lagoon-I & II has been done and Lagoon-I in operation.</p> <p>Embankment has been constructed by Water Resources Department Govt. of Bihar and erstwhile BSPGCL. Same is being maintained by NTPC.</p> <p>Annual Certification of stability of the ash dyke embankment was studied by NIT Patna in February,2024 and recommendation given by them are being followed.</p> <p>The construction of 290 Acres permanent ash dyke is under suspended state due to land possession issues. The new dyke will be constructed using state of the art technologies.</p>

SI No	MoEF&CC STIPULATIONS	STATUS AS ON 30.09.2024
(x)	Fugitive emission of fly ash (Dry or wet system) shall be controlled such that no agricultural or non agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided in consultation with the local Panchayat.	Complied. Regular water sprinkling is being done through a network of sprinklers along with covering of dry patches of ash pond with waste polypropylene sheet. No agriculture/Non-agriculture land is affected due to ash. Tractor propelled water tankers are also deployed to control dust emissions from ash transportation road.
(xi)	A long term study of heavy metal and radioactivity contents on coal shall be carried out through a reputed institute and results thereof analyzed every two years and reported along with monitoring reports. Thereafter mechanism for in built continuous monitoring of radio activity and heavy metals in coal and fly ash(including bottom ash) will be put in place.	Report of Radio activity analysis of Coal and Ash by BARC in FY 2023-24 attached as Annexure-III . Heavy metal testing in coal, ash, and water is being done. Copy enclosed as Annexure-IV . Equipment for continuous monitoring of heavy metals in coal and ash is not available in market.
(xii)	No water bodies (including natural drainage system) in the area shall be disturbed due to activities associated with the setting up/operation of the power plant.	Complied. No natural water bodies has been diverted/disturbed for installation of Power Plant.
(xiii)	COC of 5.0 shall be adopted.	Complied.
(xiv)	A well designed rain water harvesting system will be put in place within six months , which shall comprise of rain water collection from built up and open area in the plant premises and detailed record of quantity of water collected and its use. Action plan and road map for its implementation shall be submitted to regional office of Ministry.	Complied. 12 no of rainwater harvesting pits are constructed. A large storm water pit of 8000 Cum capacity has been constructed to collect rainwater from storm water drains for in plant use. Balance two nos. storm water pits are also under construction.
(xv)	Hydrogeology of the area shall be reviewed annually from an	Complied. Surface and ground water

SI No	MoEF&CC STIPULATIONS	STATUS AS ON 30.09.2024
	<p>institute /organization of repute to assess impact of surface water and ground regime (especially around ash dyke) in Case any deterioration is observed specific mitigation measures shall be undertaken and reports/ data of water quality monitored regularly and maintained shall be submitted to the Regional Office of the Ministry.</p>	<p>Quality monitoring is being done periodically and reports are enclosed. There is no deterioration is observed in water quality around ash dyke. Hydrogeological Study is under progress. Groundwater quality monitoring data nearby villages of ash dyke is enclosed at Annexure-V.</p>
(xvi)	<p>Monitoring surface water quality in the area shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.</p>	<p>Report of groundwater analysis and Surface water are attached as Annexure-V &VI.</p>
(xvii)	<p>Wastewater generated from the plant shall be treated before discharge to comply limits prescribed by the SPCB.</p>	<p>An effluent management scheme (ETP, STP and Coal Slurry Settling pit) has been implemented. No wastewater is being discharged from plant and it is being completely recycled/reused within plant itself.</p>
(xviii)	<p>No discharge in the River is permitted except if the quality of the effluent is of the quality or better as that of River.</p>	<p>Complied. The plant is Zero Liquid effluent Discharge (ZLD) Plant, and no effluent is being discharged from project boundary. All effluents are being recycled and reused within plant.</p>
(xix)	<p>Additional soil for levelling of the proposed site shall be generated within the sites (to the extent possible) so that natural</p>	<p>Complied.</p>

SI No	MoEF&CC STIPULATIONS	STATUS AS ON 30.09.2024
	drainage system of the area is protected and improved.	
(xx)	Green Belt consisting of three tiers of plantations of native species around plant and at least 50 m width shall be raised. Wherever 50 m width is not feasible a 20 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not be less than 2500 per with survival rate not less than 80%.	<ul style="list-style-type: none"> • Complied. • Cumulative trees (inhouse and External area plantation) planted By Barauni TPS at its project area as well as Baegusarai division is 77400 Nos. till September, 2024.
(xxi)	The project proponent shall also adequately contribute in the development of the neighboring villages. Special package with implementation schedule for free potable drinking water supply in the nearby villages and schools shall be undertaken in a time bound manner.	Being Complied. Various community development work like construction of Boundary wall of Govt. schools, Toilets, Infrastructure development etc. has been done. Computer lab in Govt. ITI for computer skill development in youths has been set-up. Scholarship to Govt. school students, organizing sprots activities, mobile medical camps, distribution of wheelchairs to Divyangjan etc. has been done for welfare of community.
(xxii)	As committed an amount of Rs 21.996 Crores as one time capital investment shall be earmarked for activities to be taken up under CSR during construction phase of the Project. Recurring expenditure for CSR thereafter shall be RS. 3.66 crores per annum or as per CSR guidelines of Govt of India, whichever is more till the life of the plant.	A budgetary provision of 22 Crore is kept in the stage-II DCO for CSR activities. A plan for community development has been approved by District Magistrate, Begusarai. Hence development work under progress as per approved plan & directions of district administration along with other activities.
(xxiii)	For proper and periodic monitoring of CSR activities, a CSR committee or a Social Audit committee or a suitable credible external agency shall be appointed. CSR activities shall be	For monitoring and implementation of CSR/CD schemes, A dedicated CSR department is in place and it is functioning under HR dept of Barauni. Corporate R&R, CSR

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	evaluated by an independent external agency. The evaluation shall be both concurrent and final.	dept. also monitor the CD/CSR activities of NTPC Barauni.
(xxiv)	CSR Schemes identified based on need based assessment shall be implemented in consultation with the village panchayat and the District Administration starting from the development of project itself. As part of CSR prior identification of local employable youth and eventual employment in project after imparting relevant training shall be also undertaken. Company shall provide budget for Community development activities and income generating programmers.	CSR/CD Scheme has been finalized as per recommendation of DM Begusarai. The scheme was approved by DM, Begusarai vide letter dated 12.06.2020 and copy of same has been submitted along with half yearly compliance to R.O., MOEF&CC vide our letter dated 30.12.2020. A Need Assessment Survey for CD/CSR activities has been done in 2021 for detail analysis of CD/CSR requirement in the area.
(xxv)	An Environmental Cell comprising of at least one expert in environmental science / engineering occupational health and social scientist shall be created preferably at the project site itself and shall be headed by an officer of appropriate superiority and qualification. It shall be ensured that the Head of the Cell directly report to the head of the organization who would be accountable for implementation of environmental regulation and social impact improvement mitigation measures.	Environment Cell is headed by an Additional General Manager level Executive Which directly report to Head of Plant. One Senior Manager level executive is M.Tech in Environmental Sc. & Engg.

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B. General Conditions		
(i)	The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.	Complied. Treated effluents conforming to the prescribed standards only are being re-circulated and reused within the plant. As per ZLD scheme effluents drains and storm water drains do not get mixed.
(ii)	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising green belt/plantation.	Complied. A STP in plant has been installed.
(iii)	Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.	Hydrant system for covering the entire power station including all the auxiliaries and buildings in the plant area has been commissioned. Key plan for fire protection system was submitted in Half yearly compliance report dated 06.12.2021.
(iv)	Storage facilities for auxiliary liquid fuel such as LDO/HFO/LSHS shall be made in the plant area in consultation with department of Explosives, Nagpur; Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.	Complied. A detailed Disaster Management Plan has been prepared and submitted to Chief Inspector of factories Bihar for approval.
(v)	First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Complied. Rest rooms, toilets and occupational centre is under operation. First Aid box has been provided at designated locations of plant.
(vi)	Noise levels emanating from turbines shall be limited to 85 dB (A) from source. For people working in the high noise area,	Personal protective equipment has been arranged through contractors/safety department during execution of works.

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	<p>requisite personal protective equipment like ear plugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc. shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non noisy/less noisy areas.</p>	<p>The operators working in turbine area, compressor etc. or high noisy area are provided ear plugs/ earmuffs by contractors/safety Department. Periodic medical examination of operators are being done for operators working in Turbine area, air compressors etc. for operational Unit.</p>
(vii)	<p>Regular monitoring of ambient air ground level concentration of SO₂, NO_x, PM_{2.5} & PM₁₀ and Hg shall be carried out in the impact zone and record maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional office of this Ministry. The data shall also be put on the website of the company.</p>	<p>Regular monitoring of AAQ is being done in and around plant area. The CAAQMS have been Implemented in 3 locations. Ambient Air Quality Data (October2023 -March 2024) are available on NTPC Website.</p> <p>Ambient air quality data (April,2024 – September,2024) from MOEF&CC and BSPCB approved lab is attached as Annexure-VII and same shall be uploaded on NTPC website along with current Half yearly Compliance Report.</p>
(viii)	<p>Provision shall be made for the housing of construction labor (as applicable) within the site with all necessary infrastructures and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structure to be removed after the completion of the project.</p>	<p>Complied. NTPC has constructed labour restrooms with required facilities within the site.</p> <p>Infrastructure facilities such as sanitation, medical facilities, drinking water has been made available to workers. Canteen facilities has been provided to all persons working in plant.</p>
(ix)	<p>The project proponent shall advertise in at least two local news papers widely circulated in</p>	<p>Complied. The information regarding Environmental Clearance was</p>

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	<p>the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in</p>	<p>published by previous project proponent i.e. BSPGCL. NTPC is project proponent of Barauni Thermal Power Station since 15.12.2018.</p>
(x)	<p>A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila parishad/Municipal Corporation, urban local body and the Local NGO, if any, from whom suggestions/representations, if any, received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.</p>	<p>Complied. A copy of the clearance letter has been sent to District Collector, Begusarai dated 14.05.2014 and Mukhiya Malhipur Panchyat, Mukhia Kasha Diyara Panchyat and Adhyaska Nagar Parisad, Mokama vide dated 13.05.2014 by earlier project proponent BSPGCL. The Environmental Clearance (EC) copy is available on NTPC website.</p>
(xi)	<p>The proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM (PM_{2.5} & PM₁₀), SO₂, NO_x (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.</p>	<p>Complied. The latest Half Yearly Compliance (HYC) status report of the stipulated environmental clearance conditions is being submitted to the Regional Office of MOEF&CC at Ranchi and monitoring data are enclosed with this half yearly compliance and will be available on NTPC website after submission. The Arrangement for Digital display of ambient air quality for PM₁₀, PM_{2.5}, SO₂ and NO_x and Stack emissions (PM, SO₂ and NO_x) near Plant main gate has been made at main gate.</p>

SI No	MoEF STIPULATION	STATUS AS ON 30.09.2024
(xii)	<p>The environment statement for each financial year ending 31stMarch in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.</p>	<p>Complied. The environment statement for financial year (2023-24) ending 31stMarch in Form-V has been submitted to the Bihar State Pollution Control Board vide letter dated 27.09.2024. A copy of same is also sent by email to Regional office, Ranchi, MOEF&CC.</p>
(xiii)	<p>The project proponent shall submit six monthly reports on the status of the implementations of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by email to Regional office, Ministry of Environment and Forests.</p>	<p>Complied. Latest Half yearly Compliance status for Period April,2024-September,2024 of the stipulated environmental clearance conditions is being submitted to the Regional Office of MOEF&CC at Ranchi & other authorities and same will be available on NTPC website after submission.</p>
(xiv)	<p>Regional office of the Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and</p>	<p>Complied. A Copy of EIA/EMP has been submitted to the Regional Office of MoEF&CC at Ranchi. Latest Half yearly Compliance status for Period April,2024-September,2024 will be available</p>

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		on NTPC website after submission.
	Environment Management plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will up-load the compliance status in their website and up-date the same from time to time at least six monthly basis. Criteria pollutants levels including NOx (from stack & ambient air) shall be displayed at the main gate of the power plant.	<p>Complied.</p> <p>EMP already submitted to RO, MOEF&CC.</p> <p>Latest Half yearly Compliance status for Period April,2024-September,2024 will be available on NTPC website after submission.</p> <p>Criteria pollutants levels including NOx (from stack & ambient air) have been displayed on digital display board at the main gate of the power plant.</p>
(xv)	Separate funds shall be allocated for implementation of environmental protection measures along with item wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purpose and year-wise expenditure should be reported to the ministry.	<p>Complied.</p> <p>Implemented Measures</p> <ol style="list-style-type: none"> 1. Installation of ESPs of 99.78 % efficiency to limit the RSPM concentrations below 50 mg/Nm³; 2. 275m stack for wider dispersion of gaseous emissions. (Rs.40 Crore) 3. ETP for treatment of waste water. 4. Coal slurry settling pond. 5. Dry ash Extraction system. 6. STP for treatment of sewage. 7. Dust suppression has been commissioned in coal handling area including coal stock yard area, ash handling points for control of fugitive dust emissions. 8. Continuous emission monitoring system(CEMS) and Effluent Quality Monitoring System(EQMS).(Rs.53 Lakhs) 9. Ambient Air quality monitoring system(AAQMS). (Rs.5 Crore)

SI No	MoEF STIPULATION	STATUS AS ON 30.09.2024
		<p>Implemented</p> <ol style="list-style-type: none"> 1.Asphalting of the roads within the plant area. 2.Rainwater harvesting system /pit. 3.Zero liquid discharge system. (Rs.60 Lakhs) 5. Dust extraction system being commissioned at transfer points of conveyor system. 6. Plantation in Begusarai division through DFO with provision of expenditure of Rs. 2.2 Crores from CSR/CD expenses in FY2020-24. 7. Plantation in Begusarai Division through DFO with provision of expenditure of Rs. 1.27 Crores in FY 2022-26. 8. Total cost Rs. 12.785 Crore for NOx modification of both units. Unit#8 & 9 combustion modification completed. <p>Systems under tendering/implementation</p> <ol style="list-style-type: none"> 1. Technoeconomic feasibility is being explored for alternate technologies for SO₂ reduction. Estimated cost Rs. 350 Crore. 3.Contract for Roof Top Solar awarded for Rs. 4.2 Crore. Work is under progress. 4. Renovation of Hazardous Waste Shed is under progress with cost about Rs.40 lakhs.

SI No	MoEF STIPULATION	STATUS AS ON 30.09.2024
(xvi)	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.	Complied. Financial Closure achieved in 2015 with PFC. Commercial operation declaration of Unit # 8 Barauni Stage-II was done w.e.f 01.03.2020. Commercial operation declaration of Unit # 9 Barauni Stage-II was done w.e.f 01.11.2021.
(xvii)	Full cooperation shall be extended to the Scientists/officers from the Ministry / Regional Office of the Ministry/ CPCB /SPCB who would be monitoring the compliance of environmental status.	Full cooperation is being extended to the Scientists/ officers from the Ministry / Regional Office of the Ministry at Ranchi/ the CPCB / the SPCB during monitoring of the project.
6.	The Ministry of Environment and Forests reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry. The Ministry may also impose additional environmental conditions of modify the existing ones, if necessary.	Noted.
7.	The environmental clearance accorded shall be valid for a period of 5 years from the date of issue of this letter to start operations by the power plant.	Noted.
8.	Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection)Act, 1986.	Noted.

SI No	MoEF STIPULATION	STATUS AS ON 30.09.2024
9.	In case of any deviation or alteration in the project proposed including coal transportation system from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.	Noted.
10.	The above stipulations would be enforced among others under the water (prevention and Control of pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act,1981, the Environment(Protection) Act,1986 and rules there under, Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008 and its amendments, the public Liability Insurance Act,1991 and its amendments.	Noted.
11.	Any appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within 30 days as prescribed under Section 16 of the National Green Tribunal Act,2010.	Noted.
C. Other Observation		
(i)	PP should get the Environmental Clearance transferred in their name as per para 11 of EIA notification 2006.	Environmental Clearance has been transferred in the Name of NTPC Limited Vide MOEF&CC letter dated 22.04.2020.

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(ii)	PP should ensure Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas of BTPS stage I Plant. PP should also furnish up to date status to the ministry in the matter (Specific condition vi)	Dust suppression system has been commissioned in coal handling area including coal stock yard area, ash handling points for control of fugitive dust emissions. Dust suppression system has been commissioned for conveyor belts and transfer points. Dust extraction system under commissioning.

COMPLIANCE STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS

Vide Letter No. J-13012/143/2008-IA.II(T) dated 22.04.2020

SI No	MoEF STIPULATION	STATUS AS ON 30.09.2024
Additional Condition		
(i)	The necessary pollution control measures shall be implemented to comply with revised emission norms and specific water consumption as per the Ministry's Notifications S.O.3305(E) dated 07.12.2015 and GSR 593(E) dated 28.06.2018. The progress of its implementation (physical and Financial) and extensions received from CPCB/MOEF&CC, if any shall be submitted as part of compliance report.	The following pollution control measures has been implemented to comply new emission norms. <ul style="list-style-type: none"> i. Installation of ESPs of 99.78 % efficiency to limit the RSPM concentrations. ii. Combustion modification for reduce NOx emissions in Unit#8 and Unit#9 completed. iii. Technoeconomic feasibility is being explored for alternate technologies for SO₂ reduction. iv. AWRS System and recycle of treated effluents to achieve specific water consumption norms.

Source wise coal received by Barauni Stage-II(2x250MW) in FY2020-21, 2021-22, 2022-23, 2023-24, 2024-25(up to october) Coal Data											
	Coal Received (MT)	FY-2020-21	Avg. Chargeble Dist. (KM) FY-2020-21	FY-2021-22	Avg. Chargeble Dist. (KM) FY-2021-22	FY-2022-23	Avg. Chargeble Dist. (KM) FY-2022-23	FY-2023-24	Avg. Chargeble Dist. (KM) FY-2023-24	FY-2024-25 (up to october)	Avg. Chargeble Dist. (KM) FY-2024-25
	PBCMP	522924.97	311	992845.64	311	2007615.41	311	2194031.91	311	1297819.09	315
	CCL	152040.3	416	303976.6	411	66455.25	411	57748.32	499	3949.28	509
	ECL	178163.83	291	310777.21	218	333913.42	226	86081.98	230	22988.05	255
	BCCL (Dvt_in)	0		11801.95	319	0		22568.69	317	0	
	MCFL (Dvt_in)	0		0		0		14614.97	636	0	
	Total	853129.10	339	1619401.40	315	2407984.08	316	2375045.87	399	1324756.42	360

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TEST REPORT

Ref. No. STH/TR/24-25/355	Dt: 16.04.2024	Your PO No. 4000283588-057-1019	Dt: 20.07.2022		
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI - 851 116				
[b] Details of Sample	Monitoring of Stack Emission				
[c] Sample Collected by	By Chitranjan Kumar (Lab Representative) of Shiva Test House on 08.04.24				
[d] Sampling Location	From Duct of Stack at Unit # 8 (1 * 250 MW)				
[e] Method of Sampling	IS 11255 (Part-1, 2, 3 & 7)				
[f] Sampling Environmental Condition	Temp. (°C)	24	Humidity (%) 51		
[g] Details of Sample Container (No. & Type of Container)	Thinable & Sample Carriage Bottle				
[h] Instrument ID	STH/Equip/117				
[i] Sample Quantity	60 ml				
[j] Sample Code	ST-355/04/24				
[k] Sample Condition on Receipt	Fit for Analysis				
[l] Items required to be tested	As per contract				
[m] Whether any specific Method of Test has been suggested by the customer	No				
[n] Date of receiving the sample in Laboratory	09.04.24				
[o] Analysis Start Date / Analysis Completion Date	09.04.24 / 14.04.24				
Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		ID Fan		
7. Material of Construction	---		MS		
8. Ambient Temperature	°C		33.0		
9. Flue Gas Temperature	°C		122.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	23.0		
11. Volumetric flow Rate	NM ³ /hr		1220236.0		
12. Sampling Point	---		Duct cross section		
			Limit or per E (P) Rules, Schedule I		
			Concentration		
			Emission Rate (Kg/hr)		
13. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	28.8	22.5
14. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	907.7	1051.3
15. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	315.9	304.94
16. Carbon Dioxide (CO ₂)	%		Not Specified	11.8 %	241103.3
17. Carbon Monoxide (CO)	%	IS 13270 - 1992	Not Specified	0.2%	25.57

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category "C" therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. 4PM norms as stipulated in Environmental Clearance dated 08.05.2014.

Shibeswar Prasad
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Shibeswar Prasad
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Shreyase Prasad
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Date: 2024.03.03
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Verified by:
Dr. Shibeswar Prasad
Technical Manager

Authorized Signatory
Dr. (Mrs.) Shreyase Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/355(A)	Di: 16.04.2024	Your PO No. 4000283588-057-1019	DL: 20.07.2022		
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI - 851 116				
[b] Details of Sample	Monitoring of Stack Emission				
[c] Sample Collected by	By Chitranjan Kumar (Lab Representative) of Shiva Test House on 08.04.24				
[d] Sampling Location	From Duct of Stack at Unit # 8 (1 * 250 MW)				
[e] Method of Sampling	IS 11255 (Part-1, 2, 3 & 7)				
[f] Sampling Environmental Condition	Temp. (°C)	24	Humidity (%)	51	
[g] Details of Sample Container (No. & Type of Container)	Tumble & Sample Carriage Bottle				
[h] Instrument ID	STH/Equip/117				
[i] Sample Quantity	60 ml				
[j] Sample Code	ST-355/04/24				
[k] Sample Condition on Receipt	Fit for Analysis				
[l] Items required to be tested	As per contract				
[m] Whether any specific Method of Test has been suggested by the customer	No				
[n] Date of receiving the sample in Laboratory	09.04.24				
[o] Analysis Start Date / Analysis Completion Date	09.04.24 / 14.04.24				
Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		ID Fan		
7. Material of Construction	---		MS		
8. Ambient Temperature	°C		33.0		
9. Flue Gas Temperature	°C		122.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	23.0		
11. Volumetric flow Rate	NM ³ /hr		1220236.0		
12. Sampling Point	---		Duct cross section		
			Limit as per EPI Rules, Schedule I		
			Concentration		
			Emission Rate (Kg/hrs)		
13. Oxygen (O ₂)	%		Not Specified	7.0 %	115458.6
14. Moisture Content	%		Not Specified	2.15%	---
15. Mercury as Hg	mg / NM ³	US EPA (Method 20)	0.03 mg / NM ³	0.007	0.008

Note: *As per MoEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category "C" therefore, the timeline for compliance of PM & NOx emissions have been extended up to 31.12.2024 and for SO2 up to 31.12.2026. RPM norms as stipulated in Environmental Clearance dated 06.05.2014.

Shibeshwar Prasad

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Verified by :
Dr. Shibeshwar Prasad
Technical Manager



Shreyasee Prasad

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Prasad
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Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/356	Dt: 16.04.2024	Your PO No. 4000283588-057-1019	Dt: 20.07.2022		
[a] Name and address of the Customer	NTFC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI-851 116				
[b] Details of Sample	Monitoring of Stack Emission				
[c] Sample Collected by	By Chhtranjan Kumar (Lab Representative) of Shiva Test House on 08.04.24				
[d] Sampling Location	From Duct of Stack at Unit # 9 (1 * 250 MW)				
[e] Method of Sampling	IS 11255 (Part-1,2,3 & 7)				
[f] Sampling Environmental Condition	Temp. (°C)	24	Humidity (%) : 51		
[g] Details of Sample Container (No. & Type of Container)	Thinable & Sample Carriage Bottle				
[h] Instrument ID	STHEquip/117				
[i] Sample Quantity	60 ml				
[j] Sample Code	ST-356/04/24				
[k] Sample Condition on Receipt	Fit for Analysis				
[l] Items required to be tested	As per contract				
[m] Whether any specific Method of Test has been suggested by the customer	No				
[n] Date of receiving the sample in Laboratory	09.04.24				
[o] Analysis Start Date / Analysis Completion Date	09.04.24 / 14.04.24				
Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro-Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3612 x 3412 mm ²		
6. Draft	—		ID Fan		
7. Material of Construction	—		MS		
8. Ambient Temperature	°C		33.0		
9. Flue Gas Temperature	°C		117.0		
10. Velocity	m/sec	IS 11255 (Part-3)	23.3		
11. Volumetric flow Rate	NM ³ /hr		1254528.5		
12. Sampling Point	—		Duct cross section		
			Limit as per E (P) Rule Schedule		
			Concentration		
			Emission Rate (Kg/hr)		
13. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	28.6	24.65
14. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	866.6	1081.96
15. Oxides of Nitrogen (NOx)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	274.4	328.17
16. Carbon Dioxide (CO ₂)	%		Not Specified	11.9%	258361.81
17. Carbon Monoxide (CO)	%	IS 13270 - 1992	Not Specified	0.1%	12.64

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category "C", therefore, the timeline for compliance of PM & NOx emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. *PM means as stipulated in Environmental Clearance dated 08.05.2014.

Shibeswar Prasad

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Shreyasee Prasad

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Verified by :
Dr. Shibeswar Prasad
Technical Manager

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/356(A)	Dt: 16.04.2024	Your PO No. 4000283588-057-1019	Dt: 20.07.2022
[a] Name and address of the Customer	NTFC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI-851116		
[b] Details of Sample	Monitoring of Stack Emission		
[c] Sample Collected by	By Chitrangan Kumar (Lab Representative) of Shiva Test House on 08.04.24		
[d] Sampling Location	From Duct of Stack at Unit # 9 (I * 250 MW)		
[e] Method of Sampling	IS 11255 (Part-1,2,3 & 7)		
[f] Sampling Environmental Condition	Temp. (°C)	24	Humidity (%) 51
[g] Details of Sample Container (No. & Type of Container)	Thimble & Sample Carriage Bottle		
[h] Instrument ID	STHEquip/117		
[i] Sample Quantity	60 ml		
[j] Sample Code	ST-356/04/24		
[k] Sample Condition on Receipt	Fit for Analysis		
[l] Items required to be tested	As per contract		
[m] Whether any specific Method of Test has been suggested by the customer	No		
[n] Date of receiving the sample in Laboratory	09.04.24		
[o] Analysis Start Date / Analysis Completion Date	09.04.24 / 14.04.24		
Parameters	Unit	Method of Test	Results
1. Type of Fuel			Coal
2. Stack Connected to			Electro Static Precipitator (ESP)
3. Height of Stack (as reported)	Meter		275.0 m.
4. Dia of Stack at Top (as reported)	Meter		4.9 m.
5. ID fan to chimney duct cross section			3812 x 3412 mm ²
6. Draft	---		ID Fan
7. Material of Construction	---		MS
8. Ambient Temperature	°C		33.0
9. Flue Gas Temperature	°C		117.0
10. Velocity	m/sec.	IS 11255 (Part-3)	23.3
11. Volumetric flow Rate	NM ³ /hr		1254528.5
12. Sampling Point	---		Duct cross section
			Limit as per E (PI) Rules, Schedule I
			Concentration
			Emission Rate (Kg/hr)
13. Oxygen (O ₂)	%		Not Specified
14. Moisture Content	%		7.9%
15. Mercury as Hg	mg / NM ³	US EPA (Method 29)	2.20%
			0.007
			0.008

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category "C" therefore, the timeline for compliance of PM & NOx emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. APM norms as stipulated in Environmental Clearance dated 08.05.2014.

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Technical Manager



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Authorized Signatory
Dr. (Mrs.) Shreyase Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/230	Date 31.05.2024	Year PO No. 4000283588-057-1019	Date 20.07.2022		
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116				
[b] Details of Sample	Monitoring of Stack Emission				
[c] Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 07.05.24				
[d] Sampling Location	From Duct of Stack at Unit # 8 (1 * 250 MW)				
[e] Method of Sampling	IS 11255 (Part-1, 2, 3 & 7)				
[f] Sampling Environmental Condition	Temp. (°C)	38	Humidity (%)	60	
[g] Details of Sample Container (No. & Type of Container)	Thimble & Sample Carriage Bottle				
[h] Instrument ID	STH/Equip/117				
[i] Sample Quantity	60 ml				
[j] Sample Code	ST-230/05/24				
[k] Sample Condition on Receipt	Fit for Analysis				
[l] Items required to be tested	As per contract				
[m] Whether any specific Method of Test has been suggested by the customer	No				
[n] Date of receiving the sample in Laboratory	08.05.24				
[o] Analysis Start Date / Analysis Completion Date	08.05.24 / 13.05.24				
Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		ID Fan		
7. Material of Construction	---		MS		
8. Ambient Temperature	°C		36.0		
9. Flue Gas Temperature	°C		128.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	22.7		
11. Volumetric flow Rate	NM ³ /hr		1189134.5		
12. Sampling Point	---		Duct cross section:		
			Unit as per IS (7) (Sub. Schedule)	Concentration	Emission Rate (kg/hr)
13. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	26.8	22.5
14. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	880.4	1051.3
15. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	299.7	304.94
16. Carbon Dioxide (CO ₂)	%	IS 13270 – 1982	Not Specified	11.6 %	20958.19
17. Carbon Monoxide (CO)	%		Not Specified	0.4%	457.70

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category 'C' therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. #PM norms as stipulated in Environmental Clearance dated 08.05.2014.

Shibeswar Prasad

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Verified by :

Dr. Shibeshwar Prasad
Technical Manager

Shreyasee Prasad

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Authorized Signatory

Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/230(A)	Dt. 31.05.2024	Your PO No. 4000283588-057-1019	Dt. 20.07.2022
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI - 851116		
[b] Details of Sample	Monitoring of Stack Emission		
[c] Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 07.05.24		
[d] Sampling Location	From Duct of Stack at Unit # 8 (1 * 250 MW)		
[e] Method of Sampling	IS 11255 (Part-1,2,3 & 7)		
[f] Sampling Environmental Condition	Temp. (°C)	38	Humidity (%) 60
[g] Details of Sample Container (No. & Type of Container)	Dumble & Sample Carriage Bottle		
[h] Instrument ID	STH/Equip/117		
[i] Sample Quantity	60 ml		
[j] Sample Code	ST-230/05/24		
[k] Sample Condition on Receipt	Fit for Analysis		
[l] Items required to be tested	As per contract		
[m] Whether any specific Method of Test has been suggested by the customer	No		
[n] Date of receiving the sample in Laboratory	08.05.24		
[o] Analysis Start Date / Analysis Completion Date	08.05.24 / 13.05.24		
Parameters	Unit	Method of Test	Results
1. Type of Fuel			Coal
2. Stack Connected to			Electro Static Precipitator (ESP)
3. Height of Stack (as reported)	Meter		275.0 m.
4. Dia of Stack at Top (as reported)	Meter		4.9 m.
5. ID fan to chimney duct cross section			3612 x 3412 mm ²
6. Draft	--		ID Fan
7. Material of Construction	--		MS
8. Ambient Temperature	°C		36.0
9. Flue Gas Temperature	°C		128.0
10. Velocity	m/sec.	IS 11255 (Part-3)	22.7
11. Volumetric flow Rate	NM ³ /hr		1189134.5
12. Sampling Point	--		Duct cross section
			Concentration
			Emission Rate (Kg/hr)
13. Oxygen (O ₂)	%	Limit as per EPI Rules, Schedule I	Not Specified
14. Moisture Content	%		7.8 %
15. Mercury as Hg	mg / NM ³	US EPA (Method 29)	Not Specified
			2.16%
			0.03 mg / NM ³
			0.007
			0.008

Note: *As per MoEF&CC Notification dated 05.09.2020, Domestic TPS falls in Category 'C' therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2025. 4PM norms as stipulated in Environmental Clearance dated 08.05.2014.

Shibeswar
Prasad

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Verified by :

Dr. Shibeswar Prasad
Technical Manager



Shreyasee Prasad

Digitally signed by
Shreyasee Prasad
Date: 2024.06.01
12:03:54 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

— END OF TEST REPORT —

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Contact us : 122-C, Aastha, Road No. 5A, Patliputra Colony, Patna - 800 013 (Bihar)
Mob: +918876886249, +919431047908 Email: shprasad@shiva-test.com, info@shivatest.com
Website: www.shivatest.com | www.shivatesthouse.com



**SHIVA TEST HOUSE**

(Serving since 1988)

RECOGNISED AS ENVIRONMENTAL LABORATORY BY MoEFCC, GOVT. OF INDIA, UNDER ENVIRONMENT (PROTECTION) ACT 1986, DEPTT. OF INDUSTRY, FORESTS & ENVIRONMENT, GOVT. OF BIHAR AND BIHAR STATE POLLUTION CONTROL BOARD

TEST REPORT

Ref. No. STH/TR/24-25/231	DC: 31.05.2024	Your PO No. 4000283588-057-1019	DC: 20.07.2022	
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI - 851 116			
[b] Details of Sample	Monitoring of Stack Emission			
[c] Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 07.05.24			
[d] Sampling Location	From Duct of Stack at Unit # 9 (1 * 250 MW)			
[e] Method of Sampling	IS 11255 (Part-1,2,3 & 7)			
[f] Sampling Environmental Condition	Temp. (°C)	38	Humidity (%)	60
[g] Details of Sample Container (No. & Type of Container)	Thimble & Sample Carriage Bottle			
[h] Instrument ID	STH/Equip/117			
[i] Sample Quantity	80 ml			
[j] Sample Code	ST-231/05/24			
[k] Sample Condition on Receipt	Fit for Analysis			
[l] Items required to be tested	As per contract			
[m] Whether any specific Method of Test has been suggested by the customer	No			
[n] Date of receiving the sample in Laboratory	08.05.24			
[o] Analysis Start Date / Analysis Completion Date	08.05.24 / 13.05.24			
Parameters	Unit	Method of Test	Results	
1. Type of Fuel			Coal	
2. Stack Connected to			Electro Static Precipitator (ESP)	
3. Height of Stack (as reported)	Meter		275.0 m.	
4. Dia of Stack at Top (as reported)	Meter		4.9 m.	
5. ID fan to chimney duct cross section			3812 x 3412 mm ²	
6. Draft	---		ID Fan	
7. Material of Construction	---		MS	
8. Ambient Temperature	°C		36.0	
9. Flue Gas Temperature	°C		122.0	
10. Velocity	m/sec.	IS 11255 (Part-3)	23.1	
11. Volumetric flow Rate	NM ³ /hr		1227798.2	
12. Sampling Point	---		Duct cross section	
			Concentration	Emission Rate (Kg/hrs)
13. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	34.1
14. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	1134.2
15. Oxides of Nitrogen (NOx)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	380.9
16. Carbon Dioxide (CO ₂)	%	IS 13270 - 1992	Not Specified	21038.095
17. Carbon Monoxide (CO)	%		Not Specified	843.27

Note: *As per MOEF&CC Notification dated 03.09.2022, Barauni TPS falls in Category "C" therefore, the timeline for compliance of PM & NOx emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2025. *PM norms as stipulated in Environmental Clearance dated 08.05.2014

Shibeswar Prasad

Digitally signed by
Shibeswar Prasad
Date: 2024.06.01
11:53:10 +05'30'

Verified by:

Dr. Shibeshwar Prasad
Technical Manager



Shreyasee Prasad

Digitally signed by
Shreyasee Prasad
Date: 2024.06.01
12:06:44 +05'30'

Authorized Signatory

Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/231(A)	Date: 31.05.2024	Your PO No. 4000283588-057-1019	Date: 20.07.2022		
(a) Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI - 851 116				
(b) Details of Sample	Monitoring of Stack Emission				
(c) Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 07.05.24				
(d) Sampling Location	From Duct of Stack at Unit # 9 (1 * 250 MW)				
(e) Method of Sampling	IS 11255 (Part-1, 2, 3 & 7)				
(f) Sampling Environmental Condition	Temp. (°C)	38	Humidity (%) 60		
(g) Details of Sample Container (No. & Type of Container)	Bottle & Sample Carriage Bottle				
(h) Instrument ID	STH/Equip/117				
(i) Sample Quantity	60 ml				
(j) Sample Code	ST-231/05/24				
(k) Sample Condition on Receipt	Fit for Analysis				
(l) Items required to be tested	As per contract				
(m) Whether any specific Method of Test has been suggested by the customer	No				
(n) Date of receiving the sample in Laboratory	08.05.24				
(o) Analysis Start Date / Analysis Completion Date	08.05.24 / 13.05.24				
Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		ID Fan		
7. Material of Construction	---		MS		
8. Ambient Temperature	°C		36.0		
9. Flue Gas Temperature	°C		122.0		
10. Velocity	m/sec.	IS-11255 (Part-3)	23.1		
11. Volumetric flow Rate	NM ³ /hr		1227708.2		
12. Sampling Point	---		Duct cross section		
			Unit as per I-01 Rules, Schedule I		
			Concentration		
			Emission Rate (kg/hr)		
13. Oxygen (O ₂)	%		Not Specified	7.8%	10200.24
14. Moisture Content	%		Not Specified	2.20%	---
15. Mercury as Hg	mg / NM ³	US EPA (Method 20)	0.03 mg / NM ³	0.005	0.006

Note: *As per MOEF&CC Notification dated 05/09/2022, Barauni TPS falls in Category 'C' therefore, the timeline for compliance of PM & NOx emissions have been extended up to 31.12.2024 and for SO2 up to 31.12.2026. #PM norms as stipulated in Environmental Clearance dated 08.03.2014.

Shibeswar PrasadDigitally signed by
Shibeswar Prasad
Date: 2024.06.01
11:53:27 +05'30'

Verified by:

Dr. Shibeswar Prasad
Technical Manager**Shreyasee Prasad**Digitally signed by
Shreyasee Prasad
Date: 2024.06.01
12:07:22 +05'30'

Authorized Signatory

Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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cao@shivatesthouse.in



Annexure-II

OMSHIVA TEST HOUSE PVT LT



STH/24/07/139

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : Stack Emission
Location of Sampling : From Duct of Stack at Unit #
K (1 * 150 MW)
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/07/139
Date of Sampling 09.07.2024
Sample Received on 10.07.2024
Method of Sampling IS 11255 (Part-1,2,3 & 7)
Env. Condition Temp. 33°C Humidity 61%
Instrument ID STH/Equip/117
Sample Quantity & Container 60 ml; Thimble & Sample Glass Carriage
Sample Collected by Mr. Chitranjan Kumar; Lab Representative

Analysis Details :

Sample Code STH/24/07/139
Analysis Start Date 10.07.2024
Analysis Completion Date 15.07.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested Fit for analysis
Any Specific Test Method No
Reporting Date 22.07.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia. of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		Natural		
7. Material of Construction	---		M.S.		
8. Ambient Temperature	°C		33.0		
9. Flue Gas Temperature	°C		122.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	25.7		
11. Volumetric flow Rate	NM ³ /hr		1364886.9		
12. Sampling Point	Meter		Duct cross section		
			<i>Limit as per E (P) Rates, Schedule I</i>	<i>Concentration</i>	<i>Emission Rate (Kg/hr)</i>
12. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	29.9	40.8
13. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	967.5	1320.5
14. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	315.1	430.1
15. Carbon Dioxide (CO ₂)	%		Not Specified	11.7 %	21038.00
16. Carbon Monoxide (CO)	%	IS 13270 - 1992	Not Specified	0.3 %	343.2
17. Oxygen (O ₂)	%		Not Specified	7.8 %	10200.2
18. Moisture Content	%		Not Specified	2.14 %	-
19. Mercury as Hg	mg / NM ³	US EPA Method 29	0.03 mg / NM ³	0.005	0.006

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS, Bihar Category (C), therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. *PM value is stipulated in Environmental Clearance dated 08.05.2014.



[Signature]
Reviewed by :

[Signature]
Authorized Signatory :
Abhishek Kumar, Sec. I/c (Air Proximate)

[Signature]
Authorized Signatory :
Sagar Gokhe, Sec. I/c (Metal)

[Signature]
Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

----- END OF REPORT -----

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Annexure-II

OMSHIVA TEST HOUSE PVT LTD



STH/24/07/140

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : Stack Emission
Location of Sampling : From Duct of Stack at Unit # 9 (1 * 250 MW)
W.O No.: 4000283688-057-1010
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number : STH/TR/24-25/07/140
Date of Sampling : 09.07.2024
Sample Received on : 10.07.2024
Method of Sampling : IS 11255 (Part-1,2,3 & 7)
Env. Condition : Temp. 33°C Humidity 61%
Instrument ID : STH/Equip/117
Sample Quantity & Container : 60 ml; Thimble & Sample Glass Carriage
Sample Collected by : Mr. Chitranjan Kumar; Lab Representative

Analysis Details :

Sample Code : STH/24/07/140
Analysis Start Date : 10.07.2024
Analysis Completion Date : 15.07.2024
Sample Condition on Receipt : Fit for analysis
Items required to be Tested : Fit for analysis
Any Specific Test Method : No
Reporting Date : 22.07.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia. of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		Natural		
7. Material of Construction	---		M.S.		
8. Ambient Temperature	°C		33.0		
9. Flue Gas Temperature	°C		117.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	21.1		
11. Volumetric flow Rate	NM ³ /hr		1133283.8		
12. Sampling Point	Meter		Duct cross section		
			Limit as per E (P) Rates, Schedule I	Concentration	Emission Rate (Kg/hr)
12. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	27.2	30.9
13. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	865.9	981.3
14. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	257.1	291.3
15. Carbon Dioxide (CO ₂)	%		Not Specified	12.0 %	21577.4
16. Carbon Monoxide (CO)	%	IS 13270 - 1992	Not Specified	0.3 %	343.27
17. Oxygen (O ₂)	%		Not Specified	8.0 %	10461.78
18. Moisture Content	%		Not Specified	2.20 %	-
19. Mercury as Hg	mg / NM ³	US EPA Method 29)	0.03 mg / NM ³	0.007	0.007

Note: *As per MDEF&CC Notification dated 05.09.2022, Bureau of Testing & Control (BTPC) has been notified as "Bureau of Testing & Control" therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. *PM output is reported as per Environmental Clearance dated 08.05.2014.



[Signature]
Reviewed by :

[Signature]
Authorized Signatory :
Abhishek Kumar, Sec. In-charge (Air Proximate)

[Signature]
Authorized Signatory :

Sagar Gokha, Sec. In-charge (Metal)

[Signature]
Quality Manager :

Dr. (Mrs.) Shreyasee Prasad

--- END OF REPORT ---

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Annexure-II

OMSHIVA TEST HOUSE PVT LT



STH/24/07/155

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : Stack Emission
Location of Sampling : From Duct of Stack at Unit #
8 (1 = 250 MW)
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/07/155
Date of Sampling 10.07.2024
Sample Received on 11.07.2024
Method of Sampling IS 11255 (Part-1,2,3 & 7)
Env. Condition Temp. 33°C Humidity 61%
Instrument ID STH/Equip/117
Sample Quantity & Container 60 ml; Thimble & Sample Glass Carriage
Sample Collected by Mr. Chitranjan Kumar, Lab Representative

Analysis Details :

Sample Code STH/24/07/155
Analysis Start Date 11.07.2024
Analysis Completion Date 16.07.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested Fit for analysis
Any Specific Test Method No
Reporting Date 22.07.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia. of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		Natural		
7. Material of Construction	---		M.S.		
8. Ambient Temperature	°C		33.0		
9. Flue Gas Temperature	°C		124.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	26.5		
11. Volumetric flow Rate	NM ³ /hr		1401785.6		
12. Sampling Point	Meter		Duct cross section		
			<i>Limit as per E-TP Rules, Schedule I</i>	<i>Concentration</i>	<i>Emission Rate (Kg/hr)</i>
12. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	30.1	42.1
13. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	1006.3	1410.6
14. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	319.6	448.1
15. Carbon Dioxide (CO ₂)	%	IS 13220 - 1992	Not Specified	11.9 %	21397.62
16. Carbon Monoxide (CO)	%		Not Specified	0.3 %	343.27
17. Oxygen (O ₂)	%		Not Specified	7.9 %	10331.01
18. Moisture Content	%		Not Specified	2.14 %	--
19. Mercury as Hg	mg / NM ³	US EPA (Method 29)	0.03 mg / NM ³	0.004	0.005

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category 'B' therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. *PM norms as specified in Environmental Clearance dated 08.05.2014.

Reviewed by :

Authorized Signatory :
Abhishek Kumar, Sec. I/c (Air Proximate)

Authorized Signatory :
Sagar Gokha, Sec. I/c (Metal)

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

--- END OF REPORT ---

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Annexure-II

OMSHIVA TEST HOUSE PVT LTD



STH/24/07/156

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : Stack Emission
Location of Sampling : From Duct of Stack at Unit #
9 (1 * 250 MW)
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/07/156
Date of Sampling 10.07.2024
Sample Received on 11.07.2024
Method of Sampling IS 11255 (Part-1,2,3 & 7)
Env. Condition Temp. 33°C Humidity 61%
Instrument ID STH/Equip/117
Sample Quantity & Container 60 ml; Thimble & Sample Glass Carriage
Sample Collected by Mr. Chitranjan Kumar; Lab Representative

Analysis Details :

Sample Code STH/24/07/156
Analysis Start Date 11.07.2024
Analysis Completion Date 16.07.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested Fit for analysis
Any Specific Test Method No
Reporting Date 22.07.2024

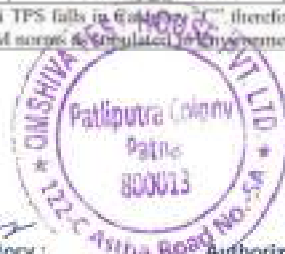
ANALYSIS RESULTS

Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia. of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		Natural		
7. Material of Construction	---		M.S.		
8. Ambient Temperature	°C		33.0		
9. Flue Gas Temperature	°C		120.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	21.6		
11. Volumetric flow Rate	NM ³ /hr		1153850.1		
12. Sampling Point	Meter		Duct cross section		
			<i>Limit as per E (P) Rules, Schedule I</i>	<i>Concentration</i>	<i>Emission Rate (Kg/hr)</i>
12. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	27.2	31.4
13. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	881.7	1017.3
14. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	257.1	296.6
15. Carbon Dioxide (CO ₂)	%	IS 13270 - 1992	Not Specified	11.7 %	21038.00
16. Carbon Monoxide (CO)	%		Not Specified	0.4 %	457.7
17. Oxygen (O ₂)	%		Not Specified	8.0 %	10461.78
18. Moisture Content	%		Not Specified	2.20 %	-
19. Mercury as Hg	mg / NM ³	US EPA (Method 29)	0.03 mg / NM ³	0.006	0.007

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category 'A', therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. #PM norms as stipulated in Environmental Clearance dated 08.05.2014.

Reviewed by :

Authorized Signatory :
Abhishek Kumar, Sec. In-charge (Air Proximate)



Authorized Signatory :
Sagar Gokhe, Sec. In-charge (Metal)

Quality Manager :
Dr. (Mrs.) Shreyesee Prasad

--- END OF REPORT ---

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Annexure-II



OMSHIVA TEST HOUSE PVT LTI



STH/24/08/110

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer :

Name / Nature of Sample : Stack Emission
Location of Sampling : From Duct of Stack at Unit #
9 (1 * 250 MW)
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number : STH/TR/24-25/08/110
Date of Sampling : 07.08.2024
Sample Received on : 09.08.2024
Method of Sampling : IS 11255 (Part-1,2,3 & 7)
Env. Condition : Temp. 37°C Humidity 70%
Instrument ID : STH/Equip/117
Sample Quantity & Container : 60 ml; Thimble & Sample Glass Carriage
Sample Collected by : Mr. Chitranjan Kumar, Lab Representative

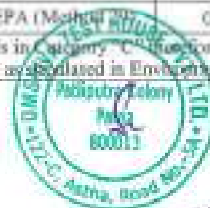
Analysis Details :

Sample Code : STH/24/08/110
Analysis Start Date : 09.08.2024
Analysis Completion Date : 14.08.2024
Sample Condition on Receipt : Fit for analysis
Items required to be Tested : Fit for analysis
Any Specific Test Method : No
Reporting Date : 16.08.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia. of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		Natural		
7. Material of Construction	---		M.S.		
8. Ambient Temperature	°C		37.0		
9. Flue Gas Temperature	°C		126.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	23.2		
11. Volumetric flow Rate	NM ³ /hr		1220092.1		
12. Sampling Point	Meter		Duct cross section		
			Limit as per E (P) Rates, Schedule I	Concentration	Emission Rate (Kg/hr)
12. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	50 mg / NM ³	26.9	32.8
13. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	887.1	1082.4
14. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	287.6	350.9
15. Carbon Dioxide (CO ₂)	%		Not Specified	11.7	21038.0
16. Carbon Monoxide (CO)	%	IS 13270 – 1992	Not Specified	0.3	343.27
17. Oxygen (O ₂)	%		Not Specified	7.9	10331.0
18. Moisture Content	%		Not Specified	2.17	—
19. Mercury as Hg	mg / NM ³	US EPA (Method 2)	0.03 mg / NM ³	0.012	0.0146

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category 'C' therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. *PM norms as stipulated in Environmental Clearance dated 08.05.2014.



Vijay Sharma
Reviewed by :

Abhishek Kumar
Authorized Signatory :
Abhishek Kumar, Sec. In (Air Proximate)

Sagar Gokha
Authorized Signatory :
Sagar Gokha, Sec. In (Metal)

Shreyasee Prasad
Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

--- END OF REPORT ---

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Annexure-II

OMSHIVA TEST HOUSE PVT LTD



STH/24/88/111

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : Stack Emission
Location of Sampling : From Duct of Stack at Unit #
8 (1 * 250 MW)
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number : STH/TR/24-25/08/111
Date of Sampling : 07.08.2024
Sample Received on : 09.08.2024
Method of Sampling : IS 11255 (Part-1, 2, 3 & 7)
Env. Condition : Temp. 37°C Humidity 70%
Instrument ID : STH/Equip/117
Sample Quantity & Container : 60 ml; Thimble & Sample Glass Carriage
Sample Collected by : Mr. Chitranjan Kumar, Lab Representative

Analysis Details :

Sample Code : STH/24/08/111
Analysis Start Date : 09.08.2024
Analysis Completion Date : 14.08.2024
Sample Condition on Receipt : Fit for analysis
Items required to be Tested : Fit for analysis
Any Specific Test Method : No
Reporting Date : 16.08.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia. of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		Natural		
7. Material of Construction	---		M.S.		
8. Ambient Temperature	°C		37.0		
9. Flue Gas Temperature	°C		132.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	23.9		
11. Volumetric flow Rate	NM ³ /hr		1238301.1		
12. Sampling Point	Meter		Duct cross section		
			Limit as per E (P) Rates, Schedule I	Concentration	Emission Rate (kg/hr)
12. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	22.0	27.3
13. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	900.5	1115.0
14. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	297.4	368.2
15. Carbon Dioxide (CO ₂)	%	IS 13270 - 1992	Not Specified	11.5	20678.38
16. Carbon Monoxide (CO)	%		Not Specified	0.5	572.1
17. Oxygen (O ₂)	%		Not Specified	8.0	10461.0
18. Moisture Content	%		Not Specified	2.20	--
19. Mercury as Hg	mg / NM ³	US EPA (Method 29)	0.03 mg / NM ³	0.014	0.0173

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category 'A' zone, therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. *NPM norms as specified in Environmental Clearance dated 08.05.2014.



Wahid Shrivastava
Reviewed by :

Abhishek Kumar
Authorized Signatory :
Abhishek Kumar, Sec. In-charge (Air Proximate)

Bagar Gokhe
Authorized Signatory :
Bagar Gokhe, Sec. In-charge (Metal)

Shreyas Prasad
Quality Manager :
Dr. (Mrs.) Shreyas Prasad

--- END OF REPORT ---

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Annexure-II



OMSHIVA TEST HOUSE PYT LTD



STH/24/08/112

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : Stack Emission
Location of Sampling : From Duct of Stack at Unit #
9 (1 * 250 MW)
W/O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number : STH/TR/24-25/08/112
Date of Sampling : 08.08.2024
Sample Received on : 09.08.2024
Method of Sampling : IS 11255 (Part-1,2,3 & 7)
Env. Condition : Temp. 35 °C Humidity 70%
Instrument ID : STH/Equip/117
Sample Quantity & Container : 60 ml; Thimble & Sample Glass Carriage
Sample Collected by : Mr. Chitranjan Kumar; Lab Representative

Analysis Details :

Sample Code : STH/24/08/112
Analysis Start Date : 09.08.2024
Analysis Completion Date : 14.07.2024
Sample Condition on Receipt : Fit for analysis
Items required to be Tested : Fit for analysis
Any Specific Test Method : No
Reporting Date : 16.08.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia. of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		Natural		
7. Material of Construction	---		M.S.		
8. Ambient Temperature	°C		35.0		
9. Flue Gas Temperature	°C		122.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	22.5		
11. Volumetric flow Rate	NM ³ /hr		1196217.5		
12. Sampling Point	Meter		Duct cross section		
			Limit as per I (P) Rules, Schedule I	Concentration	Emission Rate (kg/hr)
12. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	23.4	28.0
13. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	847.8	1014.1
14. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	281.8	337.0
15. Carbon Dioxide (CO ₂)	%	IS 13270 - 1992	Not Specified	11.8	21217.8
16. Carbon Monoxide (CO)	%		Not Specified	0.2	228.8
17. Oxygen (O ₂)	%		Not Specified	8.0	10461.7
18. Moisture Content	%		Not Specified	2.16	---
19. Mercury as Hg	mg / NM ³	US EPA (Method 29)	0.03 mg / NM ³	0.011	0.0131

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category "C" therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. *PM norms as stipulated in Environmental Clearance dated 08.05.2014.



Vedant Sharma
Reviewed by :

Abhishek Kumar
Authorized Signatory :
Abhishek Kumar, Sec. In (Air Proximate)

Sagar Gokhe
Authorized Signatory :
Sagar Gokhe, Sec. In (Metal)

Shreyasee Prasad
Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

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Annexure-II



OMSHIVA TEST HOUSE PVT LTI



STH/24/08/113

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : Stack Emission
Location of Sampling : From Duct of Stack at Unit #
8 (1 + 250 MW)
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/08/113
Date of Sampling 08.08.2024
Sample Received on 09.08.2024
Method of Sampling IS 11255 (Part-1,2,3 & 7)
Env. Condition Temp. 35°C Humidity 70%
Instrument ID STH/Equip/117
Sample Quantity & Container 60 ml, Thimble & Sample Glass Carriage
Sample Collected by Mr. Chitranjan Kumar, Lab Representative

Analysis Details :

Sample Code STH/24/08/113
Analysis Start Date 09.08.2024
Analysis Completion Date 14.08.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested Fit for analysis
Any Specific Test Method No
Reporting Date 16.08.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia. of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		Natural		
7. Material of Construction	---		M.S.		
8. Ambient Temperature	°C		35.0		
9. Flue Gas Temperature	°C		129.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	23.8		
11. Volumetric flow Rate	NM ³ /hr		1243033.1		
12. Sampling Point	Meter		Duct cross section		
			<i>Limit as per E (P) Rules, Schedule I</i>	<i>Concentration</i>	<i>Emission Rate (Kg/hr)</i>
12. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	50 mg / NM ³	18.4	22.9
13. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	883.0	1097.6
14. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	291.5	362.4
15. Carbon Dioxide (CO ₂)	%	IS 11270 - 1992	Not Specified	11.4	20498.5
16. Carbon Monoxide (CO)	%		Not Specified	0.6	686.5
17. Oxygen (O ₂)	%		Not Specified	7.9	10331.0
18. Moisture Content	%		Not Specified	2.20	--
19. Mercury as Hg	mg / NM ³	US EPA (Method 29)	0.03 mg / NM ³	0.015	0.0186

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category 'A', therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. APM norms stipulated in Environmental Clearance dated 08.03.2014.



Vedprakash Sharma
Reviewed by :

Abhishek Kumar
Authorized Signatory :
Abhishek Kumar, Sec. In (Air Proximate)

Sagar Gokhe
Authorized Signatory :
Sagar Gokhe, Sec. In (Metal)

Shreyasesh Prasad
Quality Manager :
Dr. (Mrs.) Shreyasesh Prasad

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Annexure-II



OMSHIVA TEST HOUSE PVT LTD



STH/24/10/619

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer :

Name / Nature of Sample : Stack Emission
Location of Sampling : From Duct of Stack at Unit #
8 (1 * 250 MW)
W.O No. : 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/09/619
Date of Sampling 23.09.2024
Sample Received on 25.09.2024
Method of Sampling IS 11255 (Part-1,2,3 & 7)
Env. Condition Temp. 38°C Humidity 72%
Instrument ID STH/Equip/117
Sample Quantity & Container 60 ml; Thimble & Sample Glass Carriage
Sample Collected by Mr. Chitranjan Kumar, Lab Representative

Analysis Details :

Sample Code STH/24/9/619
Analysis Start Date 25.09.2024
Analysis Completion Date 29.09.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested Fit for analysis
Any Specific Test Method No
Reporting Date 29.09.2024
Report Prepared By S.K. Singh

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia. of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		Natural		
7. Material of Construction	---		M.S.		
8. Ambient Temperature	°C		38.0		
9. Flue Gas Temperature	°C		133.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	23.3		
11. Volumetric flow Rate	NM ³ /hr		1204798.5		
12. Sampling Point	Meter		Duct cross section		
			<i>Limit as per E/P Rules, Schedule I</i>	<i>Concentration</i>	<i>Emission Rate (Kg/hr)</i>
12. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	34.2	29.2
13. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	905.3	1090.7
14. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	269.4	324.6
15. Carbon Dioxide (CO ₂)	%	IS 13270 – 1992	Not Specified	11.7	21038.0
16. Carbon Monoxide (CO)	%		Not Specified	0.3	343.27
17. Oxygen (O ₂)	%		Not Specified	7.9	10331.07
18. Moisture Content	%		Not Specified	2.18	--
19. Mercury as Hg	ng / NM ³	US EPA (Method 20)	0.03 mg / NM ³	BLQ(LQO-0.05)	--

Note: *As per MDEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category "C" therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. #PM norms as stipulated in Environmental Clearance dated 08.05.2014.

Vishal Sharma
Reviewed by :
Vishal Sharma (DQM)

Abhishek Kumar
Authorized Signatory :
Abhishek Kumar, Sec. I/c (Air Proximate)

Sagar Gokhe
Authorized Signatory :
Sagar Gokhe, Sec. I/c (Metal)

Shreyas Prasad
Quality Manager :
Dr. (Mrs.) Shreyas Prasad

— END OF REPORT —

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Annexure-II



OMSHIVA TEST HOUSE PVT LTD



STH/24/18/628

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer :

Name / Nature of Sample : Stack Emission
Location of Sampling : From Duct of Stack at Unit #
9 (1 * 250 MW)
W.O No.: 4000283688-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/08/620
Date of Sampling 23.09.2024
Sample Received on 25.09.2024
Method of Sampling IS-11255 (Part-1,2,3 & 7)
Env. Condition Temp. 38 °C Humidity 72%
Instrument ID STH/Equip/117
Sample Quantity & Container 60 ml; Thimble & Sample Glass Carriage
Sample Collected by Mr. Chitranjan Kumar, Lab Representative

Analysis Details :

Sample Code STH/24/09/620
Analysis Start Date 25.09.2024
Analysis Completion Date 29.09.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested Fit for analysis
Any Specific Test Method No
Reporting Date 29.09.2024
Report Prepared By S.K. Singh

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia. of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		Natural		
7. Material of Construction	---		M.S.		
8. Ambient Temperature	°C		38.0		
9. Flue Gas Temperature	°C		129.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	23.2		
11. Volumetric flow Rate	NM ³ /hr		1211729.6		
12. Sampling Point	Meter		Duct cross section		
			Limit as per I (P) Rules, Schedule I	Concentration	Emission Rate (Kg/hr)
12. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	23.4	28.3
13. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	927.7	1124.1
14. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	283.7	343.8
15. Carbon Dioxide (CO ₂)	%	IS 13270 – 1992	Not Specified	11.4	20498.56
16. Carbon Monoxide (CO)	%		Not Specified	0.6	686.554
17. Oxygen (O ₂)	%		Not Specified	7.9	10331.017
18. Moisture Content	%		Not Specified	2.2	--
19. Mercury as Hg	mg / NM ³	US EPA (Method 29)	0.03 mg / NM ³	BLQ(LOQ-0.05)	--

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category "C" therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. #PM norms as stipulated in Environmental Clearance dated 08.05.2014.

Vishal Sharma

Reviewed by :
Vishal Sharma (DQM)

Abhishek Kumar

Authorized Signatory :
Abhishek Kumar, Sec. In-charge (Air Proximate)

Sagar Gokhe

Authorized Signatory :
Sagar Gokhe, Sec. In-charge (Metal)



Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

--- END OF REPORT ---

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Head Office :
122-C, Aastha, Road No. 5A,
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Patna – 800 013 (Bihar)
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+919431047808
Email : ceo@shivatesthouse.in
qa@shivatesthouse.in



Annexure-II



TC-14051

OMSHIVA TEST HOUSE PYT LTD



STH/24/10/631

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer :

Name / Nature of Sample : Stack Emission
Location of Sampling : From Duct of Stack at Unit #
8 (1 * 250 MW)
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/09/631
Date of Sampling 24.09.2024
Sample Received on 25.09.2024
Method of Sampling IS 11255 (Part-1,2,3 & 7)
Env. Condition Temp. 35^oC Humidity 72%
Instrument ID STH/Equip/117
Sample Quantity & Container 60 ml; Thimble & Sample Glass Carriage
Sample Collected by Mr. Chitranjan Kumar; Lab Representative

Analysis Details :

Sample Code STH/24/09/631
Analysis Start Date 25.09.2024
Analysis Completion Date 29.09.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested Fit for analysis
Any Specific Test Method No
Reporting Date 29.09.2024
Report Prepared By S.K. Singh

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia. of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		Natural		
7. Material of Construction	---		M.S.		
8. Ambient Temperature	^o C		35.0		
9. Flue Gas Temperature	^o C		128.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	24.2		
11. Volumetric flow Rate	NM ³ /hr		1265088.3		
12. Sampling Point	Meter		Duct cross section		
			<i>Limit as per E (P) Rules, Schedule I</i>	<i>Concentration</i>	<i>Emission Rate (kg/hr)</i>
12. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	22.7	28.7
13. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	908.2	1149.0
14. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	287.0	365.1
15. Carbon Dioxide (CO ₂)	%		Not Specified	11.6	20858.19
16. Carbon Monoxide (CO)	%	IS 13270 – 1992	Not Specified	0.4	457.70
17. Oxygen (O ₂)	%		Not Specified	8.0	10461.78
18. Moisture Content	%		Not Specified	2.20	---
19. Mercury as Hg	mg / NM ³	US EPA (Method 29)	0.03 mg / NM ³	BLQ(LOQ=0.05)	---

Note: * As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category "C" therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. *PM norms as stipulated in Environmental Clearance dated 08.05.2014.

Vishal Sharma

Reviewed by :
Vishal Sharma (DGM)

Abhishek Kumar

Authorized Signatory :
Abhishek Kumar, Sec. I/c (Air Proximate)



Sagar Gökhe

Authorized Signatory :
Sagar Gökhe, Sec. I/c (Metal)

Shreyas Prasad

Quality Manager :
Dr. (Mrs.) Shreyas Prasad

--- END OF REPORT ---

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ceo@shivatesthouse.in



Annexure-II



OMSHIVA TEST HOUSE PVT LTD



STH/24/10/632



TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : Stack Emission
Location of Sampling : From Duct of Stack at Unit #
9 (1 + 250 MW)
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/09/632
Date of Sampling 24.09.2024
Sample Received on 25.09.2024
Method of Sampling IS 11255 (Part-1,2,3 & 7)
Env. Condition Temp. 38 °C Humidity 72%
Instrument ID STH/Equip/117
Sample Quantity & Container 60 ml; Thimble & Sample Glass Carriage
Sample Collected by Mr. Chitranjan Kumar, Lab Representative

Analysis Details :

Sample Code STH/24/09/632
Analysis Start Date 25.09.2024
Analysis Completion Date 29.09.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested Fit for analysis
Any Specific Test Method No
Reporting Date 29.09.2024
Report Prepared By S.K. Singh

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Results		
1. Type of Fuel			Coal		
2. Stack Connected to			Electro Static Precipitator (ESP)		
3. Height of Stack (as reported)	Meter		275.0 m.		
4. Dia. of Stack at Top (as reported)	Meter		4.9 m.		
5. ID fan to chimney duct cross section			3812 x 3412 mm ²		
6. Draft	---		Natural		
7. Material of Construction	---		M.S.		
8. Ambient Temperature	°C		35.0		
9. Flue Gas Temperature	°C		134.0		
10. Velocity	m/sec.	IS 11255 (Part-3)	23.5		
11. Volumetric flow Rate	NM ³ /hr		1208498.7		
12. Sampling Point	Meter		Duct cross section		
			Limit as per E (P) Rules, Schedule I	Concentration	Emission Rate (Kg/hr)
12. Particulate Matter (PM)	mg / NM ³	IS 11255 (Part-1)	30 mg / NM ³	24.7	29.8
13. Sulphur Dioxide (SO ₂)	mg / NM ³	IS 11255 (Part-2)	100 mg / NM ³	888.0	1073.1
14. Oxides of Nitrogen (NO _x)	mg / NM ³	IS 11255 (Part-7)	100 mg / NM ³	269.7	325.9
15. Carbon Dioxide (CO ₂)	%	IS 13270 - 1992	Not Specified	11.6	20858.19
16. Carbon Monoxide (CO)	%		Not Specified	0.4	457.70
17. Oxygen (O ₂)	%		Not Specified	8.0	10461.78
18. Moisture Content	%		Not Specified	2.16	---
19. Mercury as Hg	mg / NM ³	US EPA (Method 29)	0.03 mg / NM ³	BLQ[LOQ-0.05]	---

Note: *As per MOEF&CC Notification dated 05.09.2022, Barauni TPS falls in Category "C" therefore, the timeline for compliance of PM & NO_x emissions have been extended up to 31.12.2024 and for SO₂ up to 31.12.2026. *PM norms as stipulated in Environmental Clearance dated 08.05.2014.

Reviewed by :
Vishal Sharma (DQM)

Authorized Signatory :
Abhishek Kumar, Sec. In-charge (Air Proximate)

Authorized Signatory :
Sagar Gokhe, Sec. In-charge (Metal)

Quality Manager :
Dr. (Mrs.) Shreyases Prasad

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Certificate Tracking ID / CTID : 2306749
Date of Issue / DOI : 13-Jul-2023
Certificate Serial No. / CSN : RAL(V)-2300055



Radioanalytical Laboratory

RADIOACTIVITY TEST CERTIFICATE

Ref : BRIT/RAL/DOM/65-88/MISC/39-62/23-24

To :
M/S NTPC LIMITED
BARAUNI THERMAL POWER STATION
P.O. BTPP, DIST. BEGUSARAI, PIN-85116

This is regarding the sample of "COAL & ASH" sent for radioactivity analysis vide your letter ref. no. NTPC/BARAUNI/CHEMISTRY/BRITS/2022-23/001 dated 27.04.2023 as shown in italics:

SAMPLE DESCRIPTION : **1) COAL SAMPLES (2 NOS.)**
2) ASH SAMPLES (4 NOS.)
QUANTITY (IN GM) : **300 GMS EACH**
SAMPLING DATE : **27/04/2023**
SAMPLE LOCATION : **NTPC LIMITED , BARAUNI, BEGUSARAI**

DATE OF RECEIPT OF SAMPLE: 10.05.2023

DATE OF COMPLETION OF TEST: 23.06.2023

The samples were analysed for U-238, Ra-226, Th-232 and K-40 radioactivity content by HPGe gamma spectrometry and the values obtained are as follows:

Sr. No	NAME OF THE PRODUCT	U-238 (Bq/Kg)	Ra-226 (Bq/Kg)	Th-232 (Bq/Kg)	K-40 (Bq/Kg)
1	COAL-1 (CAL/BTPS/COAL/ECL/01)	35 ± 1.9	28.9 ± 3.6	67.7 ± 7.0	168.5 ± 10.3
2	COAL-2 (CAL/BTPS/COAL/PBCMP/01)	46.4 ± 2.5	44.7 ± 5.2	62.7 ± 6.7	75 ± 5.9
3	ASH-1 (CAL/BTPS/FLY-ASH/01)	71.7 ± 2.1	52.4 ± 4.9	106.3 ± 10.6	316.4 ± 15.2
4	ASH-2 (CAL/BTPS/BOTTOM-ASH/01)	77 ± 2.9	62.8 ± 5.5	114.9 ± 11.5	315.1 ± 15.4
5	ASH-3 (CAL/BTPS/POND-ASH/01)	90 ± 3.1	88.7 ± 8.4	124.7 ± 12.9	250.9 ± 16.0
6	ASH-4 (CAL/BTPS/POND-ASH/02)	83.6 ± 2.8	78 ± 9.0	123.7 ± 12.6	262.3 ± 15.6

Opinion: The measurement values are below the clearance level for radionuclides of natural origin in bulk solid materials, as per AERB directive 01/2010 (table-3) dated 26/11/2010.

Note: (i) The report pertains to the given sample only. (ii) The sample will be retained in this laboratory for a period of 1 month from certificate date and thereafter it will be disposed off. (iii) This report shall not be reproduced except in full, without written approval of the laboratory. (iv) The sampling is not done by this laboratory.

Checked by:
SHEEBA S.W.
Assistant

Authorized Signatory:
AJAY NANA THAMKE
OIC, RAL

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

The authenticity of this certificate is verifiable. Please scan the QR code using a QR scanning application on any mobile devices. Upon redirection you must enter the necessary information in landing page <https://portal.britatom.gov.in>. We will then revert you back with a digital copy of the certificate in your verified e-mail ID. In accordance to IT Act 2000 (21 of 2000), this document is generated electronically through a validated s/w and need no physical/ digital signature(s).





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Annexure-IV

OMSHIVA TEST HOUSE PVT LTD



AH-273/24

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer :

Name / Nature of Sample : Pond Ash Sample
Location of Sampling : From Ash Pond
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number : STH/TR/NN/24-25/09/273
Date of Sampling : 23.09.2024
Sample Received on : 25.09.2024
Env. Condition : Temp. 33°C Humidity 81%
Instrument ID : NA
Sample Quantity & Container : Two Poly Bags (2 Kg)
Sample Collected by : Mr. Vinay Kumar, Lab Representative

Analysis Details :

Sample Code : AH-273/24
Analysis Start Date : 25.09.2024
Analysis Completion Date : 29.09.2024
Sample Condition on Receipt : Fit for analysis
Items required to be Tested : As per contract
Any Specific Test Method : No
Reporting Date : 29.09.2024
Report Prepared By : S.K. Singh

ANALYSIS RESULTS

Parameters	Results (w/w)
1. Silica as SiO ₂ , %	54.3
2. Alumina as Al ₂ O ₃ , %	21.0
3. Iron as Fe ₂ O ₃ , %	5.8
4. Calcium as CaO, %	2.7
5. Magnesium as MgO, %	2.0
6. Titania as TiO ₂ , %	1.12
7. Potassium as K ₂ O, %	0.67
8. Sodium as Na ₂ O, %	0.96
9. Phosphate as P ₂ O ₅ , %	0.44
10. Sulphate as SO ₃ , %	0.68
11. Mercury as Hg, %	<0.01
12. Arsenic as As, %	<0.01
13. Lead as Pb, %	0.012



Vishal Sharma

Reviewed by :
Vishal Sharma (DQM)

S.S. Rukhaiyar

Authorized Signatory :
S.S. Rukhaiyar, Sec. In (Effluent)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

--- END OF REPORT ---

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Email : con@shivatesthouse.in

can@shivatesthouse.in



Annexure-IV

OMSHIVA TEST HOUSE PVT LTD



CL-274/24

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : Coal Sample
Location of Sampling : From Coal Storage Yard
W.O No. : 4000283588-057-1019
WO Date : 20.07.2022

Laboratory Provided Details :

ULR Number : STH/TR/24-25/09/629
Date of Sampling : 23.09.2024
Sample Received on : 25.09.2024
Env. Condition : Temp. 33°C Humidity 81%
Instrument ID : NA
Sample Quantity & Container : Two Poly Bags (2 Kg)
Sample Collected by : Mr. Vinay Kumar; Lab Representative

Analysis Details :

Sample Code : CL-274/24
Analysis Start Date : 25.09.2024
Analysis Completion Date : 29.09.2024
Sample Condition on Receipt : Fit for analysis
Items required to be Tested : As per contract
Any Specific Test Method : No
Reporting Date : 29.09.2024
Report Prepared By : S.K. Singh

ANALYSIS RESULTS

Parameters	Results (w/w)
1. Mercury as Hg, %	<0.1
2. Copper as Cu, %	0.22
3. Zinc as Zn, %	3.8
4. Chromium as Cr, %	0.15
5. Magnesium as Mg, %	1.0
6. Arsenic as As, %	0.06
7. Selenium as Se, %	<0.01
8. Nickel as Ni, %	0.24
9. Cadmium as Cd, %	<0.1
10. Lead as Pb, %	0.08
11. Cobalt as Co, %	<0.1
12. Sulphur Content, %	0.45



Vishal Sharma

Reviewed by :
Vishal Sharma (DQM)

S.S. Rukhaiyar

Authorized Signatory :
S.S. Rukhaiyar, Sec. I/c (Effluent)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

---- END OF REPORT ----

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TEST REPORT

Ref. No. STH/TR/24-25/344	Di: 16.04.2024	Your PO No. 4000283588-057-1019	Di: 20.07.2022			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAJ – 851 116					
[b] Details of Sample	Ground Water Sample					
[c] Sample Collected by	By Chitraranjan Kumar (Lab Representative) of Shiva Test House on 08.04.24					
[d] Sampling Location	Collected from Hand pump near ash dyke					
[e] Method of Sampling	IS: 3025, APHA					
[f] Sampling Environmental Condition	Temp (°c)	24	Humidity (%) 51			
[g] Details of Sample Container (No. & Type of Container)	Polypropylene bottle (02)					
[h] Sample Quantity	2 Liters					
[i] Sample Code	GW-344/04/24					
[j] Sample Condition on Receipt	Fit for analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	09.04.24					
[n] Analysis Start Date / Analysis Completion Date	09.04.24 / 14.04.24					
S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Limit (mg/l.) Acceptable	Permissible Limit in the absence of alternative source	
1.	pH at 25°C	----	IS 3025 (Part-11)	6.5	8.5	7.26
2.	Total Dissolved Solids (TDS)	mg/l.	IS 3025 (Part-16)	500.00	2000.00	287.0
3.	Conductivity	µmhos/cm	IS 3025 (Part-14)	Not Specified		542.0
4.	Turbidity on NTU	NTU	IS 3025 (Part-10)	1.0	5.0	0.92
5.	Total Alkalinity as CaCO ₃	mg/l.	IS 3025 (Part-23)	200.00	600.00	218.0
6.	Total Hardness as CaCO ₃	mg/l.	IS 3025 (Part-21)	200.00	600.00	202.0
7.	Sodium as Na	mg/l	IS3025(Part-45)	Not Specified		47.67
8.	Sulphate as SO ₄	mg/l.	IS 3025 (Part-24)	200.00	400.00	24.5
9.	Nitrate as NO ₃	mg/l.	IS3025(Part-34)	45.00	No relaxation	2.7

Shibeswar PrasadDigitally signed by Shibeswar Prasad
Date: 2024.04.16
11:01:08 +05'30'Verified by :
Dr. Shibeswar Prasad
Technical Manager**Shreyasee Prasad**Digitally signed by Shreyasee Prasad
Date: 2024.04.16
11:20:11 +05'30'Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

- END OF TEST REPORT -

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TEST REPORT

Ref. No. STH/TR/24-250344(A)	Dt: 16.04.2024	Your PO No. 4000283588-057-1019	Dt: 20.07.2022			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116					
[b] Details of Sample	Ground Water Sample					
[c] Sample Collected by	By Chitranjan Kumar (Lab Representative) of Shiva Test House on 08.04.24					
[d] Sampling Location	Collected from Hand pump near ash dyke.					
[e] Method of Sampling	IS: 3025, APHA					
[f] Sampling Environmental Condition	Temp (°C)	24	Humidity (%) 51			
[g] Details of Sample Container (No. & Type of Container)	Polypropylene bottle (02)					
[h] Sample Quantity	2 Liters					
[i] Sample Code	GW-344/04/24					
[j] Sample Condition on Receipt	Fit for analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	09.04.24					
[n] Analysis Start Date / Analysis Completion Date	09.04.24 / 14.04.24					
S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Limit (mg/l.) Acceptable	Permissible Limit in the absence of alternative source	
1.	Dissolved Oxygen	mg/l.	IS3025(Part-38)	Not Specified		4.3
2.	BOD (3 days at 27°C)	mg/l	IS3025(Part-44)	Not Specified		< 0.1
3.	COD	mg/l	IS3025(Part-58)	Not Specified		1.0
4.	Total Suspended Solids	mg/l.	IS 3025 (Part-17)	Not Specified		13.0

Shibeswar Prasad
Digitally signed by Shibeswar Prasad
Date: 2024.04.16
11:01:41 +05'30'



Verified by :
Dr. Shibeswar Prasad
Technical Manager

Shreyase Prasad
Digitally signed by Shreyase Prasad
Date: 2024.04.16
11:12:10 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyase Prasad
Quality Manager

– END OF TEST REPORT –

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Website : www.shivatest.com ; www.shivatesthouse.com





Annexure-V



SHIVA TEST HOUSE

(Serving since 1988)

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TEST REPORT

Ref. No. STH/TR/24-25/345	Date: 16.04.2024	Your PO No. 4000283588-057-1019	Date: 20.07.2022			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI - 851 116					
[b] Details of Sample	Ground water sample					
[c] Sample Collected by	By Chitraranjan Kumar (Lab Representative) of Shiva Test House on 08.04.24					
[d] Sampling Location	Collected from Hand pump Near Neta Jee Bhawan					
[e] Method of Sampling	IS: 3025, APHA					
[f] Sampling Environmental Condition	Temp (°C)	24	Humidity (%) 51			
[g] Details of Sample Container (No. & Type of Container)	Polypropylene bottle (02)					
[h] Sample Quantity	2 Liters					
[i] Sample Code	BW-345/04/24					
[j] Sample Condition on Receipt	Fit for analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	09.04.24					
[n] Analysis Start Date / Analysis Completion Date	09.04.24 / 14.04.24					
S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Limit (mg/l) Acceptable	Permissible Limit in the absence of alternative source	
1.	pH at 25°C	---	IS 3025 (Part-11)	6.5	8.5	7.31
2.	Total Dissolved Solids (TDS)	mg/l.	IS 3025 (Part-16)	500.00	2000.00	317.0
3.	Conductivity	µmhos/cm	IS 3025 (Part-14)	Not Specified		569.0
4.	Turbidity on NTU	NTU	IS 3025 (Part-10)	1.0	5.0	0.94
5.	Total Alkalinity as CaCO ₃	mg/l.	IS 3025 (Part-23)	200.00	600.00	220.0
6.	Total Hardness as CaCO ₃	mg/l.	IS 3025 (Part-21)	200.00	600.00	194.0
7.	Sodium as Na	mg/l	IS3025(Part-45)	Not Specified		43.98
8.	Sulphate as SO ₄	mg/l.	IS 3025 (Part-24)	200.00	400.00	23.5
9.	Nitrate as NO ₃	mg/l.	IS3025(Part-34)	45.00	No relaxation	2.7

Shibeswar Prasad
Digitally signed by Shibeswar Prasad
Date: 2024.04.16
11:02:16 +05'30'

Verified by :
Dr. Shibeswar Prasad
Technical Manager



Shreyasee Prasad
Digitally signed by Shreyasee Prasad
Date: 2024.04.16
11:13:58 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/345(A)	Dr: 16.04.2024	Your PO No. 4000283588-057-1019	Dr: 20.07.2023			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116					
[b] Details of Sample	Ground water sample					
[c] Sample Collected by	By Chitranjan Kumar (Lab Representative) of Shiva Test House on 08.04.24					
[d] Sampling Location	Collected from Hand pump Near Neta Jee Bhawan					
[e] Method of Sampling	IS: 3025, APHA					
[f] Sampling Environmental Condition	Temp (°c)	24	Humidity (%) 51			
[g] Details of Sample Container (No. & Type of Container)	Polypropylene bottle (02)					
[h] Sample Quantity	2 Liters					
[i] Sample Code	BW-345/04/24					
[j] Sample Condition on Receipt	Fit for analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	09.04.24					
[n] Analysis Start Date / Analysis Completion Date	09.04.24 / 14.04.24					
S.N.	Parameters	Unit	Method of Test	Limit as per IS: 10500: 2012		Results
				Limit (mg/l) Acceptable	Permissible Limit in the absence of alternative source	
1.	Dissolved Oxygen	mg/l.	IS3025(Part-38)	Not Specified		4.2
2.	BOD (3 days at 27°C)	mg/l.	IS3025(Part-44)	Not Specified		< 0.1
3.	COD	mg/l.	IS3025(Part-58)	Not Specified		1.0
4.	Total Suspended Solids	mg/l.	IS 3025 (Part-17)	Not Specified		11.0

Shibeswar Prasad

Digitally signed by
Shibeswar Prasad
Date: 2024.04.16
11:03:20 +05'30'



Verified by :
Dr. Shibeswar Prasad
Technical Manager

Shreyase Prasad

Digitally signed by
Shreyase Prasad
Date: 2024.04.16
11:15:48 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyase Prasad
Quality Manager

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Website: www.shivatest.com; www.shivatesthouse.com



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TEST REPORT

Ref. No. STH/TR/24-25/238	Do: 31.05.2024	Your PO No. 4000283588-057-1019	Do: 30.07.2022			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116					
[b] Details of Sample	Ground Water Sample					
[c] Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 08.05.24					
[d] Sampling Location	Collected from Hand pump near ash dyke					
[e] Method of Sampling	IS: 3025, APHA					
[f] Sampling Environmental Condition	Temp (°c)	38	Humidity (%) 60			
[g] Details of Sample Container (No. & Type of Container)	Polypropylene bottle (02)					
[h] Sample Quantity	2 Liters					
[i] Sample Code	GW-238/05/24					
[j] Sample Condition on Receipt	Fit for analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	09.05.24					
[n] Analysis Start Date / Analysis Completion Date	09.05.24/ 14.05.24					
S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Limit (mg/l.) Acceptable	Permissible Limit in the absence of alternative source	
1.	pH at 25°C	---	IS 3025 (Part-11)	6.5	8.5	7.38
2.	Total Dissolved Solids (TDS)	mg/l.	IS 3025 (Part-16)	500.00	2000.00	212.0
3.	Conductivity	µmhos/cm	IS 3025 (Part-14)	Not Specified		397.0
4.	Turbidity as NTU	NTU	IS 3025 (Part-10)	1.0	5.0	0.86
5.	Total Alkalinity as CaCO ₃	mg/l.	IS 3025 (Part-23)	200.00	600.00	190.0
6.	Total Hardness as CaCO ₃	mg/l.	IS 3025 (Part-21)	200.00	600.00	170.0
7.	Sodium as Na	mg/l	IS3025(Part-45)	Not Specified		41.39
8.	Sulphate as SO ₄	mg/l.	IS 3025 (Part-24)	200.00	400.00	22.8
9.	Nitrate as NO ₃	mg/l.	IS3025(Part-34)	45.00	No relaxation	2.8

Shibeswar
PrasadDigitally signed by Shibeswar
Prasad
Date: 2024.06.01 11:53:59 +05'30'

Verified by :

Dr. Shibeswar Prasad
Technical ManagerShreyasee
PrasadDigitally signed by
Shreyasee Prasad
Date: 2024.06.01
12:07:59 +05'30'


Authorized Signatory

Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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 Website: www.shivatest.com, www.shivatesthouse.com  

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TEST REPORT

Ref. No. STH/TR/24-25/238(A)	Di: 31.05.2024	Your PO No. 4000283588-057-1019	Di: 20.07.2022			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116					
[b] Details of Sample	Ground Water Sample					
[c] Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 08.05.24					
[d] Sampling Location	Collected from Hand pump near ash dyke					
[e] Method of Sampling	IS: 3025, APHA					
[f] Sampling Environmental Condition	Temp (°C)	38	Humidity (%) 60			
[g] Details of Sample Container (No. & Type of Container)	Polypropylene bottle (02)					
[h] Sample Quantity	2 Liters					
[i] Sample Code	GW-238/05/24					
[j] Sample Condition on Receipt	Fit for analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	08.05.24					
[n] Analysis Start Date / Analysis Completion Date	08.05.24/ 14.05.24					
S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Limit (mg/l.) Acceptable	Permissible Limit in the absence of alternative source	
1.	Dissolved Oxygen	mg/l.	IS3025(Part-38)	Not Specified		4.4
2.	BOD (3 days at 27°C)	mg/l	IS3025(Part-44)	Not Specified		< 0.1
3.	COD	mg/l	IS3025(Part-58)	Not Specified		1.0
4.	Total Suspended Solids	mg/l.	IS 3025 (Part-17)	Not Specified		9.0

Shibeswar Prasad

Digitally signed by
Shibeswar Prasad
Date: 2024.06.01
11:54:19 +05'30'

Verified by :

Dr. Shibeshwar Prasad
Technical Manager



Shreyasee Prasad

Digitally signed by
Shreyasee Prasad
Date: 2024.06.01
12:08:38 +05'30'

Authorized Signatory

Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. SHH/TR/24-25/239	Dr. 31.05.2024	Your PO No. 4000283588-057-1019	Dr. 20.07.2022			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116					
[b] Details of Sample	Ground water sample					
[c] Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 08.05.24					
[d] Sampling Location	Collected from Hand pump Near Neta Jee Bhawan					
[e] Method of Sampling	IS: 3025, APHA					
[f] Sampling Environmental Condition	Temp (°C)	38	Humidity (%) 60			
[g] Details of Sample Container (No. & Type of Container)	Polypropylene bottle (02)					
[h] Sample Quantity	2 Liters					
[i] Sample Code	GW-239/05/24					
[j] Sample Condition on Receipt	Fit for analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	09.05.24					
[n] Analysis Start Date / Analysis Completion Date	09.05.24/ 14.05.24					
S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Limit (mg/l) Acceptable	Permissible Limit in the absence of alternative source	
1.	pH at 25°C	----	IS 3025 (Part-11)	6.5	8.5	7.28
2.	Total Dissolved Solids (TDS)	mg/l.	IS 3025 (Part-16)	500.00	2000.00	225.0
3.	Conductivity	µmhos/cm	IS 3025 (Part-14)	Not Specified		415.0
4.	Turbidity on NTU	NTU	IS 3025 (Part-10)	1.0	5.0	0.91
5.	Total Alkalinity as CaCO ₃	mg/l.	IS 3025 (Part-23)	200.00	600.00	190.0
6.	Total Hardness as CaCO ₃	mg/l.	IS 3025 (Part-21)	200.00	600.00	194.0
7.	Sodium as Na	mg/l	IS3025(Part-45)	Not Specified		44.73
8.	Sulphate as SO ₄	mg/l.	IS 3025 (Part-24)	200.00	400.00	22.8
9.	Nitrate as NO ₃	mg/l.	IS3025(Part-34)	45.00	No relaxation	2.8

Shibeswar Prasad
Digitally signed by Shibeswar Prasad
Date: 2024.06.01
11:54:35 +05'30'

Verified by :
Dr. Shibeswar Prasad
Technical Manager



Shreyasee Prasad
Digitally signed by Shreyasee Prasad
Date: 2024.06.01
12:09:18 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/239(A)	Dr: 31.05.2024	Your PO No. 4000283588-057-1019	Dr: 20.07.2022			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116					
[b] Details of Sample	Ground water sample					
[c] Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 08.05.24					
[d] Sampling Location	Collected from Hand pump Near Neta Jee Bhawan					
[e] Method of Sampling	IS: 3025, APHA					
[f] Sampling Environmental Condition	Temp (°c)	58	Humidity (%) 60			
[g] Details of Sample Container (No. & Type of Container)	Polypropylene bottle (02)					
[h] Sample Quantity	2 Liters					
[i] Sample Code	GW-239/05/24					
[j] Sample Condition on Receipt	Fit for analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	09.05.24					
[n] Analysis Start Date / Analysis Completion Date	09.05.24/ 14.05.24					
S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Limit (mg/l.) Acceptable	Permissible Limit in the absence of alternative source	
1.	Dissolved Oxygen	mg/l.	IS3025(Part-38)	Not Specified		4.6
2.	BOD (3 days at 27°C)	mg/l	IS3025(Part-44)	Not Specified		< 0.1
3.	COD	mg/l	IS3025(Part-58)	Not Specified		1.0
4.	Total Suspended Solids	mg/l.	IS 3025 (Part-17)	Not Specified		10.0

Shibeswar Prasad

Digitally signed by
Shibeswar Prasad
Date: 2024.06.01
11:54:51 +05'30'

Verified by:
Dr. Shibeswar Prasad
Technical Manager

**Shreyasee Prasad**

Digitally signed by
Shreyasee Prasad
Date: 2024.06.01
12:09:59 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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Annexure-V



OMSHIVA TEST HOUSE PYT LTD



STH/24/08/99

TEST REPORT

Name and Address of Customer:

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer:

Name / Nature of Sample: Ground Water Sample
Location of Sampling: From Hand pump near Neta Jee Bhawan
W.O No.: 4000283588-057-1019
WO Date: 20.07.2023

Laboratory Provided Details:

ULR Number: STH/TR/24-25/08/99
Date of Sampling: 07.08.2024
Sample Received on: 09.08.2024
Method of Sampling: IS 3025 (Part - 14)
Env. Condition: Temp. 35°C Humidity 70%
Sample Quantity & Container: 2 L.; Polypropylene Bottle (02)
Sample Collected by: Mr. Chitranjan Kumar, Lab Representative

Analysis Details:

Sample Code: STH/24/08/99
Analysis Start Date: 09.08.2024
Analysis Completion Date: 14.08.2024
Sample Condition on Receipt: Fit for analysis
Items required to be Tested: As per contract
Any Specific Test Method: No
Reporting Date: 16.08.2024

ANALYSIS RESULTS

S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Acceptable Limit	Permissible Limit	
Organoleptic & Physical Analysis						
1.	pH at 25°C	-----	IS 3025 (Part-11)	6.5-8.5	No relaxation	7.28
2.	Turbidity on NTU	NTU	IS 3025 (Part-10)	1.0 Max.	5.0	0.85
3.	Conductivity	µmhos/cm	IS 3025 (Part-14)	Not Specified		388.0
4.	Total Dissolved Solids (TDS)	mg/l.	IS 3025 (Part-16)	500.0 Max.	2000.00	204.0
Chemical Analysis						
5.	Total Alkalinity as CaCO ₃	mg/l.	IS 3025 (Part-23)	200.0 Max.	600.00	196.0
6.	Total Hardness as CaCO ₃	mg/l.	IS 3025 (Part-21)	200.0 Max.	600.00	162.0
7.	Sodium as Na	mg/l	IS3025(Part-45)	Not Specified		41.44
8.	Sulphate as SO ₄	mg/l.	IS 3025 (Part-24)	200.0 Max.	400.00	21.4
9.	Nitrate as NO ₃	mg/l.	IS3025(Part-34)	45.0 Max.	No relaxation	2.41
10.	Dissolved Oxygen	mg/l.	IS3025(Part-38)	Not Specified		4.3
11.	COD	mg/l	IS3025(Part-58)	Not Specified		1.0
12.	Total Suspended Solids	mg/l.	IS 3025 (Part-17)	Not Specified		7.0



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Contact us : +918676886249
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Annexure-V

TEST REPORT

Continuation Sheet

ULR NUMBER : STH/TR/24-25/08/99

ANALYSIS RESULTS

S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Acceptable Limit	Permissible Limit	
13:	BOD (3 days at 27°C)	mg/l	IS3025(Part-44)	Not Specified		<0.1



Vishal Sharma

Reviewed by :

Chittaranjan Das

Authorized Signatory:

Chittaranjan Das, Sec. Ho (Food & Water Proximate)

Shreyasee Prasad

Quality Manager :

Dr. (Mrs.) Shreyasee Prasad

---- END OF REPORT ----

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Patna – 800 013 (Bihar)
Contact us : +918676886249
+919431047900
Email : ceo@shivatesthouse.in
ceo@shivatesthouse.in



Annexure-V

OMSHIVA TEST HOUSE PVT LTD



STH/24/08/100

TEST REPORT

Name and Address of Customer:

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer:

Name / Nature of Sample: Ground Water Sample
Location of Sampling: From Hand Pump near Ash Dyke
W.O No.: 4000283588-057-1019
WO Date: 20.07.2024

Laboratory Provided Details:

ULR Number STH/TR/24-25/08/100
Date of Sampling 07.08.2024
Sample Received on 09.08.2024
Method of Sampling IS 3025 (Part - 14)
Env. Condition Temp. 35 °C Humidity 70%
Sample Quantity & Container 2 L.; Polypropylene Bottle (02)
Sample Collected by Mr. Chitrnanjan Kumar; Lab Representative

Analysis Details:

Sample Code STH/24/08/100
Analysis Start Date 09.08.2024
Analysis Completion Date 14.08.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 16.08.2024

ANALYSIS RESULTS

S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Acceptable Limit	Permissible Limit	
Organoleptic & Physical Analysis						
1.	pH at 25°C	---	IS 3025 (Part-11)	6.5-8.5	No relaxation	7.36
2.	Turbidity on NTU	NTU	IS 3025 (Part-10)	1.0 Max.	5.0	0.87
3.	Conductivity	µmhos/cm	IS 3025 (Part-14)	Not Specified		409.0
4.	Total Dissolved Solids (TDS)	mg/l.	IS 3025 (Part-16)	500.0 Max.	2000.00	216.0
Chemical Analysis						
5.	Total Alkalinity as CaCO ₃	mg/l.	IS 3025 (Part-23)	200.0 Max.	600.00	212.0
6.	Total Hardness as CaCO ₃	mg/l.	IS 3025 (Part-21)	200.0 Max.	600.00	172.0
7.	Sodium as Na	mg/l	IS3025(Part-45)	Not Specified		40.23
8.	Sulphate as SO ₄	mg/l.	IS 3025 (Part-24)	200.0 Max.	400.00	23.84
9.	Nitrate as NO ₃	mg/l.	IS3025(Part-34)	45.0 Max.	No relaxation	2.58
10.	Dissolved Oxygen	mg/l.	IS3025(Part-38)	Not Specified		4.6
11.	COD	mg/l	IS3025(Part-58)	Not Specified		1.0
12.	Total Suspended Solids	mg/l.	IS 3025 (Part-17)	Not Specified		9.0



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Annexure-V

TEST REPORT

Continuation Sheet

ULR NUMBER : *STH/TR/24-25/08/100*

ANALYSIS RESULTS

S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Acceptable Limit	Permissible Limit	
13.	BOD (3 days at 27°C)	mg/l	IS3025(Part-44)	Not Specified		<0.1



Vedant Shrivastava
Reviewed by :

Chittaranjan Das
Authorized Signatory:
Chittaranjan Das, Sec. Uc (Food & Water Proximate)

Shreyases Prasad
Quality Manager :
Dr. (Mrs.) Shreyases Prasad

---- END OF REPORT ----

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Annexure-V



OMSHIVA TEST HOUSE PVT LTD



STH/24/09/608

TEST REPORT

Name and Address of Customer:

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer:

Name / Nature of Sample: Ground Water Sample
Location of Sampling: From Hand Pump near Ash Dyke
W.O No.: 4000283588-057-1019
WO Date: 20.07.2023

Laboratory Provided Details:

ULR Number STH/TR/24-25/09/608
Date of Sampling 23.09.2024
Sample Received on 25.09.2024
Method of Sampling IS 3025 (Part - 14) & IS 1622
Env. Condition Temp. 38°C Humidity 72%
Sample Quantity & Container 2 L.: Polypropylene Bottle (02) & 500 ml.: Sterilized Glass Bottle (02)
Sample Collected by Mr. Chitranjan Kumar, Lab Representative

Analysis Details:

Sample Code STH/24/09/608
Analysis Start Date 25.09.2024
Analysis Completion Date 29.09.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 29.09.2024
Report Prepared By S.K. Singh

ANALYSIS RESULTS

S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Acceptable Limit	Permissible Limit	
Organoleptic & Physical Analysis						
1.	pH at 25°C	----	IS 3025 (Part-11)	6.5-8.5	No relaxation	7.37
2.	Turbidity on NTU	NTU	IS 3025 (Part-10)	1.0 Max.	5.0	0.95
3.	Conductivity	µmhos/cm	IS 3025 (Part-14)	Not Specified		834.0
4.	Total Dissolved Solids (TDS)	mg/l.	IS 3025 (Part-16)	500.0 Max.	2000.00	459.0
Chemical Analysis						
5.	Total Alkalinity as CaCO ₃	mg/l.	IS 3025 (Part-23)	200.0 Max.	600.00	312.0
6.	Total Hardness as CaCO ₃	mg/l.	IS 3025 (Part-21)	200.0 Max.	600.00	282.0
7.	Sulphate as SO ₄	mg/l.	IS 3025 (Part-24)	200.0 Max.	400.00	26.92
8.	Nitrate as NO ₃	mg/l.	IS 3025 (Part-34)	45.0 Max.	No relaxation	2.74
9.	Dissolved Oxygen	mg/l.	IS 3025 (Part-38)	Not Specified		2.3
10.	COD	mg/l	IS 3025 (Part-58)	Not Specified		1.0
11.	Total Suspended Solids	mg/l.	IS 3025 (Part-17)	Not Specified		6.0
12.	Cyanide as CN	mg/L	APHA (24th Edition) (4500-CN -E)	0.05 Max.	No Relaxation	<0.005



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Annexure-V



OMSHIVA TEST HOUSE PVT LTD



STH/24/09/608

TEST REPORT

Continuation Sheet

ULR NUMBER.: STH/TR/24-25/09/608

ANALYSIS RESULTS

S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Acceptable Limit	Permissible Limit	
Metals						
13.	Sodium as Na	mg/l	IS3025(Part-45)	Not Specified		42.61
14.	Boron as B	mg/L	STH/SOP/MET/SPW-002	0.5 Max.	2.4	BLQ(LOQ-0.1)
15.	Aluminum as Al	mg/L	STH/SOP/MET/SPW-002	0.03 Max.	0.2	BLQ(LOQ-0.006)
16.	Arsenic as As	mg/L	STH/SOP/MET/SPW-002	0.01 Max.	No Relaxation	BLQ(LOQ-0.002)
17.	Cadmium as Cd	mg/L	STH/SOP/MET/SPW-002	0.003 Max.	No Relaxation	BLQ(LOQ-0.0006)
18.	Chromium as Cr	mg/L	STH/SOP/MET/SPW-002	0.05 Max.	No Relaxation	BLQ(LOQ-0.01)
19.	Copper as Cu	mg/L	STH/SOP/MET/SPW-002	0.05 Max.	1.5	BLQ(LOQ-0.01)
20.	Iron as Fe	mg/L	STH/SOP/MET/SPW-002	1.0 Max.	No Relaxation	0.28
21.	Lead as Pb	mg/L	STH/SOP/MET/SPW-002	0.01 Max.	No Relaxation	BLQ(LOQ-0.002)
22.	Manganese as Mn	mg/L	STH/SOP/MET/SPW-002	0.1 Max.	0.3	BLQ(LOQ-0.02)
23.	Mercury as Hg	mg/L	STH/SOP/MET/SPW-002	0.001 Max.	No Relaxation	BLQ(LOQ-0.0002)
24.	Selenium as Se	mg/L	STH/SOP/MET/SPW-002	0.01 Max.	No Relaxation	BLQ(LOQ-0.002)
25.	Zinc as Zn	mg/L	STH/SOP/MET/SPW-002	5.0 Max.	15	BLQ (LOQ 0.10)

Microbiological Analysis

26.	Total Coliform	MPN / 100 ml	IS 1622		<2.0
27.	E coli	MPN / 100 ml	IS 1622		<2.0

BLQ- Below Limit of Quantification; LOQ- Limit of Quantification.

Vishal Sharma

Reviewed by:
Vishal Sharma (DQM)



Sagar Gokhe

Authorized Signatory :
Sagar Gokhe, Sec. I/c (Metal)

Chittaranjan Das

Authorized Signatory:
Chittaranjan Das, Sec. I/c (Food,
Residue & Water Proximate)

Piyali Das Sharma

Authorized Signatory :
Piyali Das Sharma, Sec. I/c (Mcb.)

Shreyassee Prasad

Quality Manager :
Dr. (Mrs.) Shreyassee Prasad

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Annexure-V

OMSHIVA TEST HOUSE PYT LTD



5TH/24/09/608

TEST REPORT

Continuation Sheet

ULR NUMBER.: STH/TR/24-25/09/608

ANALYSIS RESULTS

S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Acceptable Limit	Permissible Limit	
28.	BOD (3 days at 27°C)	mg/l	IS3025(Part-44)	Not Specified		<0.1



Vishal Sharma

Reviewed by :
Vishal Sharma (DQM)

Chittaranjan Das

Authorized Signatory:
Chittaranjan Das, Sec. I/c (Food & Water Proximate)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

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Annexure-V



TC-14291

OMSHIVA TEST HOUSE PVT LTD



STH/24/09/609

TEST REPORT

Name and Address of Customer:

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer:

Name / Nature of Sample: Ground Water Sample
Location of Sampling: From Hand Pump near Vinod
Bhawan
W.O No.: 4000283588-057-1019
WO Date: 20.07.2024

Laboratory Provided Details:

ULR Number STH/TR/24-25/09/609
Date of Sampling 23.09.2024
Sample Received on 25.09.2024
Method of Sampling IS 3025 (Part - 14) & IS 1622
Env. Condition Temp. 38°C Humidity 72%
Sample Quantity & Container 2 L.; Polypropylene Bottle (02) & 500 ml.;
Sterilized Glass Bottle (02)
Sample Collected by Mr. Chitranjan Kumar, Lab Representative

Analysis Details:

Sample Code STH/24/09/609
Analysis Start Date 25.09.2024
Analysis Completion Date 29.09.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 29.09.2024
Report Prepared By S.K. Singh

ANALYSIS RESULTS

S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Acceptable Limit	Permissible Limit	
Organoleptic & Physical Analysis						
1.	pH at 25°C	----	IS 3025 (Part-11)	6.5-8.5	No relaxation	7.28
2.	Turbidity on NTU	NTU	IS 3025 (Part-10)	1.0 Max.	5.0	0.92
3.	Conductivity	µmhos/cm	IS 3025 (Part-14)	Not Specified		1285.0
4.	Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16)	500.0 Max.	2000.00	707.0
Chemical Analysis						
5.	Total Alkalinity as CaCO ₃	mg/L	IS 3025 (Part-23)	200.0 Max.	800.00	448.0
6.	Total Hardness as CaCO ₃	mg/L	IS 3025 (Part-21)	200.0 Max.	600.00	422.0
7.	Sulphate as SO ₄	mg/L	IS 3025 (Part-24)	200.0 Max.	400.00	26.87
8.	Nitrate as NO ₃	mg/L	IS 3025 (Part-34)	45.0 Max.	No relaxation	2.95
9.	Dissolved Oxygen	mg/L	IS 3025 (Part-38)	Not Specified		2.3
10.	COD	mg/L	IS 3025 (Part-58)	Not Specified		1.0
11.	Total Suspended Solids	mg/L	IS 3025 (Part-17)	Not Specified		6.0
12.	Cyanide as CN	mg/L	APHA (24th Edition) (4500-CN-E)	0.05 Max.	No Relaxation	<0.005



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Annexure-V



TC-14261

OMSHIVA TEST HOUSE PVT LTD



STH/24/09/609

TEST REPORT

Continuation Sheet

ULR NUMBER.: STH/TR/24-25/09/609

ANALYSIS RESULTS

S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Acceptable Limit	Permissible Limit	
Metals						
13.	Sodium as Na	mg/L	IS3025(Part-45)	Not Specified		42.62
14.	Boron as B	mg/L	STH/SOP/MET/SPW-002	0.5 Max.	2.4	BLQ(LOQ-0.1)
15.	Aluminum as Al	mg/L	STH/SOP/MET/SPW-002	0.03 Max.	0.2	BLQ(LOQ-0.006)
16.	Arsenic as As	mg/L	STH/SOP/MET/SPW-002	0.01 Max.	No Relaxation	BLQ(LOQ-0.002)
17.	Cadmium as Cd	mg/L	STH/SOP/MET/SPW-002	0.003 Max.	No Relaxation	BLQ(LOQ-0.0006)
18.	Chromium as Cr	mg/L	STH/SOP/MET/SPW-002	0.05 Max.	No Relaxation	BLQ(LOQ-0.01)
19.	Copper as Cu	mg/L	STH/SOP/MET/SPW-002	0.05 Max.	1.5	BLQ(LOQ-0.01)
20.	Iron as Fe	mg/L	STH/SOP/MET/SPW-002	1.0 Max.	No Relaxation	0.28
21.	Lead as Pb	mg/L	STH/SOP/MET/SPW-002	0.01 Max.	No Relaxation	BLQ(LOQ-0.002)
22.	Manganese as Mn	mg/L	STH/SOP/MET/SPW-002	0.1 Max.	0.3	BLQ(LOQ-0.02)
23.	Mercury as Hg	mg/L	STH/SOP/MET/SPW-002	0.001 Max.	No Relaxation	BLQ(LOQ-0.0002)
24.	Selenium as Se	mg/L	STH/SOP/MET/SPW-002	0.01 Max.	No Relaxation	BLQ(LOQ-0.002)
25.	Zinc as Zn	mg/L	STH/SOP/MET/SPW-002	5.0 Max.	15	BLQ (LOQ 0.10)

Microbiological Analysis						
26.	Total Coliform	MPN / 100 ml		IS 1622		<2.0
27.	E coli	MPN / 100 ml		IS 1622		<2.0

BLQ= Below Limit of Quantification; LOQ= Limit of Quantification.

Vishal Sharma

Reviewed by:
Vishal Sharma (DQM)



Sagar Gokhe

Authorized Signatory :
Sagar Gokhe, Sec. I/c (Metal)

Chittaranjan Das

Authorized Signatory:
Chittaranjan Das, Sec. I/c (Food,
Residue & Water Proximate)

Piyali Das Sharma

Authorized Signatory :
Piyali Das Sharma, Sec. I/c (Mcb.)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

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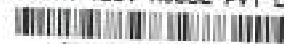
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Annexure-V

OMSHIVA TEST HOUSE PVT LTD



STH/24/09/609

TEST REPORT

Continuation Sheet

ULR NUMBER : STH/TR/24-25/09/609

ANALYSIS RESULTS

S.N.	Parameters	Unit	Method of Test	Limit as per IS 10500: 2012		Results
				Acceptable Limit	Permissible Limit	
28.	BOD (3 days at 27°C)	mg/l	IS3025(Part-44)	Not Specified		<0.1



Vishal Sharma

Reviewed by :
Vishal Sharma (DQM)

Chittaranjan Das

Authorized Signatory:
Chittaranjan Das, Sec. I/c (Food & Water Proximate)

Shreyases Prasad

Quality Manager :
Dr. (Mrs.) Shreyases Prasad

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TEST REPORT

Ref. No. STH/TR/24-25/346	Dt: 16.04.2024	Your PO No. 4000283588-057-1019	Di: 20.07.2022			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116					
[b] Details of Sample	Surface Water Sample					
[c] Sample Collected by	By Chitraranjan Kumar (Lab Representative) of Shiva Test House on 08.04.24					
[d] Sampling Location	Collected from Ganga Water Near Raw water pump house					
[e] Method of Sampling	IS: 3025, APHA					
[f] Sampling Environmental Condition	Temp (°C)	24	Humidity (%) 51			
[g] Details of Sample Container (No. & Type of Container)	Polypropylene bottle (02)					
[h] Sample Quantity	2 Liters					
[i] Sample Code	SW-346/D4/24					
[j] Sample Condition on Receipt	Fit for analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	09.04.24					
[n] Analysis Start Date / Analysis Completion Date	09.04.24 / 14.04.24					
S.N.	Parameters	Unit	Method of Test	Limit as per IS 2296-1982		Results
				Tolerance Limit as per IS 2296-1982 for Class '1' (mg/l)	Tolerance Limit as per IS 2296-1982 for Class '2' (mg/l)	
1.	pH at 25°C	----	IS 3025 (Part-11)	6.5 – 8.5	6.5 – 8.5	7.61
2.	Dissolved Oxygen	mg/l.	IS3025(Part-38)	6.0	4.0	5.8
3.	BOD (3 days at 27°C)	mg/l	IS3025(Part-44)	2.0	3.0	1.9
4.	COD	mg/l	IS3025(Part-58)	Not Specified		24.0
5.	Total Suspended Solids	mg/l.	IS 3025 (Part-17)	Not Specified		47.0
6.	Total Dissolved Solids (TDS)	mg/l.	IS 3025 (Part-16)	-	1500.00	258.0
7.	Conductivity	µmhos/cm.	IS 3025 (Part-14)	Not Specified		412.0
8.	Turbidity on NTU	NTU	IS 3025 (Part-10)	1.0	5.0	4.7
9.	Sodium as Na	mg/l	IS3025(Part-45)	Not Specified		41.03
10.	Sulphate as SO ₄	mg/l.	IS 3025 (Part-24)	200.00	400.00	22.6
11.	Nitrate as NO ₃	mg/l.	IS3025(Part-34)	45.00	No relaxation	0.56

Shibeswar Prasad
Digitally signed by Shibeswar Prasad
Date: 2024.04.16
11:04:06 +05'30'

Verified by :
Dr. Shibeswar Prasad
Technical Manager



Shreyase Prasad
Digitally signed by Shreyase Prasad
Date: 2024.05.03
11:16:25 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/346(A)	Dt. 16.04.2024	Your PO No. 4000283588-057-1019	Dt. 20.07.2022			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI - 851 116					
[b] Details of Sample	Surface Water Sample					
[c] Sample Collected by	By Chitranjan Kumar (Lab Representative) of Shiva Test House on 08.04.24					
[d] Sampling Location	Collected from Ganga Water Near Raw water pump house					
[e] Method of Sampling	IS: 3025, APHA					
[f] Sampling Environmental Condition	Temp (°c)	24	Humidity (%) 51			
[g] Details of Sample Container (No. & Type of Container)	Polypropylene bottle (02)					
[h] Sample Quantity	2 Liters					
[i] Sample Code	SW-346/04/24					
[j] Sample Condition on Receipt	Fit for analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	09.04.24					
[n] Analysis Start Date / Analysis Completion Date	09.04.24 / 14.04.24					
S.N.	Parameters	Unit	Method of Test	Limit as per IS 152296-1982		Results
				Tolerance Limit as per IS 152296-1982 for Class 'A' (mg/L)	Tolerance Limit as per IS 152296-1982 for Class 'C' (mg/L)	
1.	Total Alkalinity as CaCO ₃	mg/l.	IS 3025 (Part-23)	Not Specified		138.0
2.	Total Hardness as CaCO ₃	mg/l.	IS 3025 (Part-21)	Not Specified		156.0

Shibeswar Prasad

Digitally signed by
Shibeswar Prasad
Date: 2024.04.16
11:04:26 +05'30'

Verified by :
Dr. Shibeswar Prasad
Technical Manager



Shreyase Prasad

Digitally signed by
Shreyase Prasad
Date: 2024.05.03
11:17:31 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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**SHIVA TEST HOUSE**

(Serving since 1988)

RECOGNISED AS ENVIRONMENTAL LABORATORY BY M&EFCC, GOVT. OF INDIA, UNDER ENVIRONMENT (PROTECTION) ACT 1986, DEPTT. OF INDUSTRY, FORESTS & ENVIRONMENT, GOVT. OF BIHAR AND BIHAR STATE POLLUTION CONTROL BOARD

TEST REPORT

Ref. No. STH/TR/24-25/240	Di: 31.05.2024	Your PO No. 4000283588-057-1019	Di: 20.07.2022			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116					
[b] Details of Sample	Surface Water Sample					
[c] Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 08.05.24					
[d] Sampling Location	Collected from Ganga Water Near Raw water pump house					
[e] Method of Sampling	IS: 3025, APHA					
[f] Sampling Environmental Condition	Temp (°C)	38	Humidity (%)	60		
[g] Details of Sample Container (No. & Type of Container)	Polypropylene bottle (02)					
[h] Sample Quantity	2 Liters					
[i] Sample Code	SW-240/05/24					
[j] Sample Condition on Receipt	Fit for analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	09.05.24					
[n] Analysis Start Date / Analysis Completion Date	09.05.24/ 14.05.24					
S.N.	Parameters	Unit	Method of Test	Limit as per IS IS2296-1982		Results
				Tolerance Limit as per IS 2296-1982 for Class 'A' (mg/l)	Tolerance Limit as per IS 2296-1982 for Class 'C' (mg/l)	
1.	pH at 25°C	-----	IS 3025 (Part-11)	6.5 – 8.5	6.5 – 8.5	7.84
2.	Dissolved Oxygen	mg/l.	IS3025(Part-38)	6.0	4.0	6.4
3.	BOD (3daysat27°C)	mg/l	IS3025(Part-44)	2.0	3.0	2.1
4.	COD	mg/l	IS3025(Part-58)	Not Specified		28.0
5.	Total Suspended Solids	mg/l.	IS 3025 (Part-17)	Not Specified		51.0
6.	Total Dissolved Solids (TDS)	mg/l.	IS 3025 (Part-16)	-	1500.00	245.0
7.	Conductivity	µmhos/cm.	IS 3025 (Part-14)	Not Specified		426.0
8.	Turbidity on NTU	NTU	IS 3025 (Part-10)	1.0	5.0	5.2
9.	Sodium as Na	mg/l	IS3025(Part-45)	Not Specified		48.5
10.	Sulphate as SO ₄	mg/l.	IS 3025 (Part-24)	200.00	400.00	23.2
11.	Nitrate as NO ₃	mg/l.	IS3025(Part-34)	45.00	No relaxation	0.52

Shibeswar Prasad

Digitally signed by
Shibeswar Prasad
Date: 2024.06.01
11:55:12 +05'30'

Verified by :
Dr. Shibeswar Prasad
Technical Manager



Shreyasee Prasad



Digitally signed by
Shreyasee Prasad
Date: 2024.06.01
12:10:43 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. SHH/TR/24-25/240(A)	Di: 31.05.2024	Your PO No. 4000283588-057-1019	Di: 20.07.2022			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116					
[b] Details of Sample	Surface Water Sample					
[c] Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 08.05.24					
[d] Sampling Location	Collected from Ganga Water Near Raw water pump house					
[e] Method of Sampling	IS: 3025, APHA					
[f] Sampling Environmental Condition	Temp (°C)	38	Humidity (%) 60			
[g] Details of Sample Container (No. & Type of Container)	Polypropylene bottle (02)					
[h] Sample Quantity	2 Liters					
[i] Sample Code	SW-240/05/24					
[j] Sample Condition on Receipt	Fit for analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	09.05.24					
[n] Analysis Start Date / Analysis Completion Date	09.05.24/ 14.05.24					
S.N.	Parameters	Unit	Method of Test	Limit as per IS 15296-1982		Results
				Tolerance Limit as per IS 15296-1982 for Class 'A'	Tolerance Limit as per IS 15296-1982 for Class 'C'	
1.	Total Alkalinity as CaCO ₃	mg/l.	IS 3025 (Part-23)	Not Specified		144.0
2.	Total Hardness as CaCO ₃	mg/l.	IS 3025 (Part-21)	Not Specified		154.0

Shibeswar Prasad

Digitally signed by
Shibeswar Prasad
Date: 2024.06.01
11:55:33 +05'30'

Verified by :

Dr. Shibeshwar Prasad
Technical Manager

**Shreyasee Prasad**

Digitally signed by
Shreyasee Prasad
Date: 2024.06.01
12:11:28 +05'30'

Authorized Signatory

Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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Annexure-VI

OMSHIVA TEST HOUSE PVT LTD



STH/24/07/128

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer :

Name / Nature of Sample : Pond Water Sample
Location of Sampling : Near CISE Corner
W.O No. : 4000283588-057-1019
WO Date: 20.07.2024

Laboratory Provided Details :

ULR Number : STH/TR/24-25/07/128
Date of Sampling : 09.07.2024
Sample Received on : 10.07.2024
Method of Sampling : IS 3025, APHA
Env. Condition : Temp. 33 °C Humidity 61%
Sample Quantity & Container : 2 L ; Polypropylene Bottle (02)
Sample Collected by : Mr. Pradeep Kumar, Lab Representative

Analysis Details :

Sample Code : STH/24/07/128
Analysis Start Date : 10.07.2024
Analysis Completion Date : 15.07.2024
Sample Condition on Receipt : Fit for analysis
Items required to be Tested : As per contract
Any Specific Test Method : No
Reporting Date : 18.07.2024

ANALYSIS RESULTS

Sl. No.	Parameters	Unit	Method of Test	Results
1.	pH at 25°C	---	IS 3025 (Part-11)	7.47
2.	Dissolved Oxygen	mg/l.	IS 3025 (Part-38)	5.2
3.	Total Suspended Solids	mg/l.	IS 3025 (Part-17)	34.0
4.	BOD (3 days at 27°C)	mg/l.	IS 3025 (Part-44)	1.9
5.	COD	mg/l.	IS 3025 (Part-58)	25.0
6.	Total Dissolved Solids (TDS)	mg/l.	IS 3025 (Part-16)	204.0
7.	Total Alkalinity as CaCO ₃	mg/l.	IS 3025 (Part-23)	185.0
8.	Bio-Assay Test	---	IS 6582: 1971	92% Fish Survived after 96 hrs. in 100% Of Pond Water at lab environmental condns.



Anshu Kumar

Reviewed by :

Sayan Sankar

Authorized Signatory :
S.S. Rukhalyar, Sec. I/c (Effluent)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

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Annexure-VI

OMSHIVA TEST HOUSE PVT LTD



STH/24/07/129

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : Pond Water Sample
Location of Sampling : Near Medical shop corner
W.O No. : 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/07/129
Date of Sampling 09.07.2024
Sample Received on 10.07.2024
Method of Sampling IS 3025, APHA
Env. Condition Temp. 33°C Humidity 61%
Sample Quantity & Container 2 L.; Polypropylene Bottle (02)
Sample Collected by Mr. Pradeep Kumar; Lab Representative

Analysis Details :

Sample Code STH/24/07/129
Analysis Start Date 10.07.2024
Analysis Completion Date 15.07.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 18.07.2024

ANALYSIS RESULTS

Sl. No.	Parameters	Unit	Method of Test	Results
1.	pH at 25°C	---	IS 3025 (Part-11)	7.58
2.	Dissolved Oxygen	mg/L	IS 3025 (Part-38)	4.7
3.	Total Suspended Solids	mg/L	IS 3025 (Part-17)	45.0
4.	BOD (3 days at 27°C)	mg/L	IS 3025 (Part-44)	2.2
5.	COD	mg/L	IS 3025 (Part-58)	30.0
6.	Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16)	224.0
7.	Total Alkalinity as CaCO ₃	mg/L	IS 3025 (Part-23)	180.0
8.	Bio-Assay Test	---	IS 6582: 1971	92% Fish Survived after 96 hrs. in 100% Of Pond Water at lab environmental condition.



Anshu Kumar

Reviewed by :

Sayan Sunkar

Authorized Signatory :
S.S. Rukhalyar, Sec. Ino (Effluent)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

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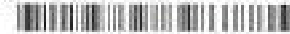
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ooo@shivatesthouse.in



Annexure-VI

OMSHIVA TEST HOUSE PVT LTD



STH/24/07/130

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer :

Name / Nature of Sample : Pond Water Sample
Location of Sampling : Near Manta Shop Corner
W.O No. : 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/07/130
Date of Sampling 09.07.2024
Sample Received on 10.07.2024
Method of Sampling IS 3025, APHA
Env. Condition Temp. 33°C Humidity 61%
Sample Quantity & Container 2 L.; Polypropylene Bottle (02)
Sample Collected by Mr. Pradeep Kumar, Lab Representative

Analysis Details :

Sample Code STH/24/07/130
Analysis Start Date 10.07.2024
Analysis Completion Date 15.07.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 18.07.2024

ANALYSIS RESULTS

Sl. No.	Parameters	Unit	Method of Test	Results
1.	pH at 25°C	—	IS 3025 (Part-11)	7.25
2.	Dissolved Oxygen	mg/L	IS 3025 (Part-38)	0.8
3.	Total Suspended Solids	mg/L	IS 3025 (Part-17)	59.0
4.	BOD (3 days at 27°C)	mg/L	IS 3025 (Part-44)	10.0
5.	COD	mg/L	IS 3025 (Part-58)	60.0
6.	Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16)	233.0
7.	Total Alkalinity as CaCO ₃	mg/L	IS 3025 (Part-23)	190.0
8.	Bio-Assay Test	—	IS 6582: 1971	10% Fish Survived after 96 hrs. in 100% OF Pond Water at lab environmental condition.



Anshu Kumar

Reviewed by :

Sayan Sunkar

Authorized Signatory :
S.S. Rukhatyar, Sec. I/c (Effluent)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

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Annexure-VI

OMSHIVA TEST HOUSE PVT LTD



STH/24/07/131

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAJ - 851 116

Information by Customer :

Name / Nature of Sample : Pond Water Sample
Location of Sampling : Near CISF Stadium Corner
W.O No.: 4000283588-057-1019
WO Date: 20.07.2024

Laboratory Provided Details :

ULR Number STH/TR/24-25/07/131
Date of Sampling 09.07.2024
Sample Received on 10.07.2024
Method of Sampling IS 3025, APHA
Env. Condition Temp. 33°C Humidity 61%
Sample Quantity & Container 2 L.; Polypropylene Bottle (02)
Sample Collected by Mr. Pradeep Kumar, Lab Representative

Analysis Details :

Sample Code STH/24/07/131
Analysis Start Date 10.07.2024
Analysis Completion Date 15.07.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 18.07.2024

ANALYSIS RESULTS

Sl. No.	Parameters	Unit	Method of Test	Results
1.	pH at 25°C	---	IS 3025 (Part-11)	7.81
2.	Dissolved Oxygen	mg/L	IS 3025 (Part-38)	6.0
3.	Total Suspended Solids	mg/L	IS 3025 (Part-17)	41.0
4.	BOD (3 days at 27°C)	mg/L	IS 3025 (Part-44)	1.9
5.	COD	mg/L	IS 3025 (Part-58)	28.0
6.	Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16)	205.0
7.	Total Alkalinity as CaCO ₃	mg/L	IS 3025 (Part-23)	165.0
8.	Bio-Assay Test	---	IS 6582: 1971	92% Fish Survived after 96 hrs. in 100% Of Pond Water at lab environmental condition.



Pradeep Kumar

Reviewed by :

S.S. Rukhaiyar

Authorized Signatory :
S.S. Rukhaiyar, Sec. I/c (Effluent)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

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Annexure-VI



OMSHIVA TEST HOUSE PVT LTD



STH/24/08/101

TEST REPORT

Name and Address of Customer:

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer:

Name / Nature of Sample: Surface Water Sample
Location of Sampling: Ganga Water from reservoir tank
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details:

ULR Number STH/TR/24-25/08/101
Date of Sampling 07.08.2024
Sample Received on 09.08.2024
Method of Sampling IS 3025 (Part - 14)
Env. Condition Temp. 35°C Humidity 70%
Sample Quantity & Container 2 L.; Polypropylene Bottle (02)
Sample Collected by Mr. Chitraranjan Kumar, Lab Representative

Analysis Details:

Sample Code STH/24/08/101
Analysis Start Date 09.08.2024
Analysis Completion Date 14.08.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 16.08.2024

ANALYSIS RESULTS

S.N.	Parameters	Unit	Method of Test	Results
1.	pH at 25°C	-----	IS 3025 (Part-11)	7.34
2.	Turbidity on NTU	NTU	IS 3025 (Part-10)	8.6
3.	Conductivity	µmhos/cm.	IS 3025 (Part-14)	384.0
4.	Total Dissolved Solids (TDS)	mg/l.	IS 3025 (Part-16)	212.0
5.	Dissolved Oxygen	mg/l.	IS3025(Part-38)	6.2
6.	BOD (3 days at 27°C)	mg/l	IS3025(Part-44)	1.7
7.	COD	mg/l	IS3025(Part-58)	38.0
8.	Total Suspended Solids	mg/l.	IS 3025 (Part-17)	89.0
9.	Sodium as Na	mg/l	IS3025(Part-45)	35.2
10.	Sulphate as SO ₄	mg/l.	IS 3025 (Part-24)	25.6
11.	Nitrate as NO ₃	mg/l.	IS3025(Part-34)	0.36
12.	Total Alkalinity as CaCO ₃	mg/l.	IS 3025 (Part-23)	128.0
13.	Total Hardness as CaCO ₃	mg/l.	IS 3025 (Part-21)	148.0



Vedhat Sharma

Reviewed by :

S.S. Rukhaiyar

Authorized Signatory :
S.S. Rukhaiyar, Sec. In (Effluent)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

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Annexure-VI



OMSHIVA TEST HOUSE PVT LTD



STH/24/09/610

TEST REPORT

Name and Address of Customer:

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer:

Name / Nature of Sample: Surface Water Sample
Location of Sampling: Ganga Water from Raw
Water Pump House
W.O No.: 4000283688-057-1019
WO Date: 20.07.2022

Laboratory Provided Details:

ULR Number STH/TR/24-25/09/610
Date of Sampling 23.09.2024
Sample Received on 25.09.2024
Method of Sampling IS 3025 (Part - 14) & IS 1622
Env. Condition Temp. 38 °C Humidity 72%
Sample Quantity & Container 2 L.; Polypropylene Bottle (02) & 500 ml.;
Sterilized Glass Bottle (02)
Sample Collected by Mr. Chitranjan Kumar, Lab Representative

Analysis Details:

Sample Code STH/24/09/610
Analysis Start Date 25.09.2024
Analysis Completion Date 29.09.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 29.09.2024
Report Prepared By S.K. Singh

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Tolerance Limit as per IS 2296-1982					Results
			Class 'A'	Class 'B'	Class 'C'	Class 'D'	Class 'E'	
1. pH at 25 °C	--	IS 3025 (Part-11)	6.5 to 8.5	6.5 to 8.5	6.0 to 9.0	6.5 to 8.5	6.0 to 8.5	7.12
2. Dissolved Oxygen	mg/l.	IS 3025 (Part-38)	6.0	5.0	4.0	4.0	--	5.9
3. BOD (3 days at 27 °C)	mg/l.	IS 3025 (Part-44)	2	3	3	--	--	1.4
4. COD	mg/l.	IS 3025 (Part-58)	--	--	--	--	--	40.0
5. Total Suspended Solids	mg/l.	IS 3025 (Part-17)	--	--	--	--	--	105.0
6. Total Dissolved Solids	mg/l.	IS 3025 (Part-16)	500.00	--	1500	--	2100	194.0
7. Conductivity	µmhos/cm.	IS 3025 (Part-14)	--	--	--	--	2250	354.0
8. Turbidity	NTU	IS 3025 (Part-10)	--	--	--	--	--	9.6
9. Sulphate as SO ₄	mg/l.	IS 3025 (Part-24)	400.00	--	400.00	--	1000	20.2
10. Nitrate as NO ₃	mg/l.	APHA 4500 NO3 - B	20.00	--	50.0	--	--	0.28
11. Total Alkalinity as CaCO ₃	mg/l.	IS 3025 (Part-23)	--	--	--	--	--	118.0
12. Total Hardness as CaCO ₃	mg/l.	IS 3025 (Part-21)	200	--	--	--	--	136.0



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OMSHIVA TEST HOUSE PVT LTD



STH/24/09/610

TEST REPORT

Continuation Sheet

ULR NUMBER.: STH/TR/24-25/09/610

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Tolerance Limit as per IS 2296-1902					Results
			Class 'A'	Class 'B'	Class 'C'	Class 'D'	Class 'E'	
13. Sodium as Na	mg/l	IS 3025 (Part-45)	--	--	--	--	--	38.3
14. Boron as B	mg/l	STH/SOP/MET/SPW-002	--	--	--	--	2.0	BLQ(LOQ-0.1)
15. Aluminum as Al	mg/l	STH/SOP/MET/SPW-002	0.03	--	0.02	--	--	BLQ(LOQ-0.006)
16. Arsenic as As	mg/l	STH/SOP/MET/SPW-002	0.05	0.2	0.2	--	--	BLQ(LOQ-0.002)
17. Cadmium as Cd	mg/l	STH/SOP/MET/SPW-002	0.01	--	0.01	--	--	BLQ(LOQ-0.0006)
18. Chromium as Cr	mg/l	STH/SOP/MET/SPW-002	0.05	--	0.05	--	--	BLQ(LOQ-0.01)
19. Copper as Cu	mg/l	STH/SOP/MET/SPW-002	1.5	--	1.5	--	--	BLQ(LOQ 0.10)
20. Iron as Fe	mg/l	STH/SOP/MET/SPW-002	0.3	--	0.5	--	--	0.24
21. Lead as Pb	mg/l	STH/SOP/MET/SPW-002	0.1	--	0.1	--	--	BLQ(LOQ-0.002)
22. Manganese as Mn	mg/l	STH/SOP/MET/SPW-002	0.5	--	--	--	--	BLQ(LOQ-0.02)
23. Mercury as Hg	mg/l	STH/SOP/MET/SPW-002	0.001	--	--	--	--	BLQ(LOQ-0.0002)
24. Selenium as Se	mg/l	STH/SOP/MET/SPW-002	0.01	--	0.05	--	--	BLQ(LOQ-0.002)
25. Zinc as Zn	mg/l	STH/SOP/MET/SPW-002	15	--	15	--	--	BLQ(LOQ 0.10)

Microbiological Analysis

26.	Total Coliform	MPN / 100 ml	IS 1622	2.6 X 10 ⁴
27.	E coli	MPN / 100 ml	IS 1622	1.7 X 10 ⁴

BLQ= Below Limit of Quantification; LOQ= Limit of Quantification.

Vishal Sharma

Reviewed by:
Vishal Sharma (DQM)



Sagar Gokhe

Authorized Signatory :
Sagar Gokhe, Sec. I/c (Metal)

S.S. Rukhaiyar

Authorized Signatory :
S.S. Rukhaiyar, Sec. I/c (Effluent)

Piyali Das Sharma

Authorized Signatory :
Piyali Das Sharma, Sec. I/c (Mcb.)

Dr. (Mrs.) Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

— END OF REPORT —

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PRIVATE LIMITED**

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TESTING | CONSULTING | RESOLVING | TRAINING

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Annexure-VI

OMSHIVA TEST HOUSE PVT LTD



STH/24/09/610

TEST REPORT

Continuation Sheet

ULR NUMBER.: STH/TR/24-25/09/610

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Tolerance Limit as per IS 2296-1982					Results
			Class 'A'	Class 'B'	Class 'C'	Class 'D'	Class 'E'	
28. Cyanide as CN	mg/l.	IS 3025 (Part-27)	0.05	0.05	0.05	--	--	<0.005
29. Oil & Grease	mg/l.	IS 3025 (Part-39)	--	--	0.1	0.1	--	<0.1



Vishal Sharma

Reviewed by :
Vishal Sharma (DOM)

S.S. Rukhaiyar

Authorized Signatory :
S.S. Rukhaiyar, Sec. In (Effluent)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

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TEST REPORT

Ref. No. STH/TR/24-25/351	Date: 16.04.2024	Your PO No. 4000283588-057-1019	Date: 20.07.2022			
[a] Name and address of the Customer:		NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116				
[b] Details of Sample		Monitoring of Ambient Air Quality				
[c] Sample Collected by		By Chitranshi Kumar (Lab Representative) of Shiva Test House on 08.04.24				
[d] Sampling Location		Collected from Near Ash Dyke				
[e] Method of Sampling		IS 5182 (Part - 14)				
[f] Details of Sample Container (No. & Type of Container)		Filter Paper: Glass Impinger				
[g] Instrument ID		STH/Equip/26, STH/Equip/113				
[h] Sample Quantity		30 ml x 6 (for each NO ₂ , SO ₂)				
[i] Sample Code		A-351/04/24				
[j] Sample Condition on Receipt		Fit for Analysis				
[k] Items required to be tested		As per contract				
[l] Whether any specific Method of Test has been suggested by the customer		No				
[m] Date of receiving the sample in Laboratory		09.04.24				
[n] Analysis Start Date / Analysis Completion Date		09.04.24 / 14.04.24				
[o] Meteorological Data		Max ^m Temperature	37.0 °C			
		Min ^m Temperature	31.0 °C			
		Relative Humidity	39%			
		Wind Direction	SW			
		Wind Speed	6 Km/hr.			
Parameters	Unit	Method of Test	Standard as per NAAQS 2009	Sampling Station		
				Near Ash Dyke		
RESULTS						
1. Particulate Matter (PM ₁₀)	(µg / m ³)	IS 5182 (Part-23)	100.0	74.4	Avg. value:	70.2
				65.7		
				70.7		
2. Particulate Matter (PM _{2.5})	(µg / m ³)	IS 5182 (Part-24)	60.0	43.0	Avg. value:	38.8
				32.9		
				40.5		
3. Sulphur Dioxide as SO ₂	(µg / m ³)	IS 5182 (Part-2)	60.0	15.1	Avg. value:	12.6
				13.4		
				9.1		
				11.1		
				12.1		
4. Oxides of Nitrogen as NO ₂	(µg / m ³)	IS 5182 (Part-6)	60.0	39.7	Avg. value:	34.4
				33.5		
				29.4		
				29.4		
				34.9		

Shibeswar Prasad

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Shibeswar Prasad
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Shreyase Prasad

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Shreyase Prasad
Date: 2024.05.03
11:21:06 +05'30'

Verified by:
Dr. Shibeswar Prasad
Technical Manager

Authorized Signatory
Dr. (Mrs.) Shreyase Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/352	Dt: 16.04.2024		Your PO No. 4000283588-057-1019		Dt: 20.07.2022	
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116					
[b] Details of Sample	Monitoring of Ambient Air Quality					
[c] Sample Collected by	By Chitranjan Kumar (Lab Representative) of Shiva Test House on 08.04.24					
[d] Sampling Location	Collected from Near Neta Jee Bhawan					
[e] Method of Sampling	IS 5182 (Part - 14)					
[f] Details of Sample Container (No. & Type of Container)	Filter Paper, Glass Impinger					
[g] Instrument ID	STH/Equip/27, STH/Equip/115					
[h] Sample Quantity	30 ml x 6 (for each NO ₂ , SO ₂)					
[i] Sample Code	A-352/04/24					
[j] Sample Condition on Receipt	Fit for Analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	08.04.24					
[n] Analysis Start Date / Analysis Completion Date	08.04.24 / 14.04.24					
[o] Meteorological Data	Max ^o Temperature		37.0 °C			
	Min ^o Temperature		31.0 °C			
	Relative Humidity		34%			
	Wind Direction		SW			
	Wind Speed		8 Km./hr.			
Parameters	Unit	Method of Test	Standard as per NAAQS 2009	Sampling Station		
				Near Vinod Bhawan (Township)		
RESULTS						
1. Particulate Matter (PM ₁₀)	(µg / m ³)	IS 5182 (Part-23)	100.0	71.8	Avg. value:	67.3
				63.0		
				67.0		
2. Particulate Matter (PM _{2.5})	(µg / m ³)	IS 5182 (Part-24)	60.0	40.3	Avg. value:	37.4
				32.8		
				39.1		
3. Sulphur Dioxide as SO ₂	(µg / m ³)	IS 5182 (Part-2)	80.0	14.8	Avg. value:	11.7
				11.1		
				8.9		
				9.9		
				11.9		
4. Oxides of Nitrogen as NO ₂	(µg / m ³)	IS 5182 (Part-6)	80.0	13.8	Avg. value:	33.1
				36.3		
				33.6		
				28.2		
				28.9		
				34.9		
				36.9		

Shibeswar Prasad

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by Shibeswar Prasad
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Shreyase Prasad

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Shreyase Prasad
Date: 2024.05.03
11:21:53 +05'30'

Verified by :
Dr. Shibeswar Prasad
Technical Manager

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No.:	STH/TR/24-25/353	Do:	16.04.2024	Your PO No.:	4000283588-057-1019	Do:	20.07.2022
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116						
[b] Details of Sample	Monitoring of Ambient Air Quality						
[c] Sample Collected by	By Chitranjan Kumar (Lab Representative) of Shiva Test House on 08.04.24						
[d] Sampling Location	Collected from Near Barlyahi Village						
[e] Method of Sampling	IS 5182 (Part - 14)						
[f] Details of Sample Container (No. & Type of Container)	Filter Paper; Glass Impinger						
[g] Instrument ID	STH/Equip/54, STH/Equip/116						
[h] Sample Quantity	30 ml x 6 (for each NO ₂ , SO ₂)						
[i] Sample Code	A-353/04/24						
[j] Sample Condition on Receipt	Fit for Analysis						
[k] Items required to be tested	As per contract						
[l] Whether any specific Method of Test has been suggested by the customer	No						
[m] Date of receiving the sample in Laboratory	09.04.24						
[n] Analysis Start Date / Analysis Completion Date	09.04.24 / 14.04.24						
[o] Meteorological Data	Max ^m Temperature		37.0 °C				
	Min ^m Temperature		31.0 °C				
	Relative Humidity		34%				
	Wind Direction		SW				
	Wind Speed		6 Km/hr				
Parameters	Unit	Method of Test	Standard as per NAAQS 2009	Sampling Station			
				Near CW, Pump House-(Stage-2)			
RESULTS							
1. Particulate Matter (PM ₁₀)	(µg / m ³)	IS 5182 (Part-23)	100.0	74.1	Avg. value:	68.2	
				62.1			
				68.3			
2. Particulate Matter (PM _{2.5})	(µg / m ³)	IS 5182 (Part-24)	60.0	40.2	Avg. value:	36.8	
				31.4			
				38.9			
3. Sulphur Dioxide as SO ₂	(µg / m ³)	IS 5182 (Part-2)	80.0	14.8	Avg. value:	12.4	
				13.1			
				9.9			
				10.9			
				11.9			
4. Oxides of Nitrogen as NO ₂	(µg / m ³)	IS 5182 (Part-6)	80.0	13.8	Avg. value:	34.6	
				38.9			
				37.0			
				26.1			
				31.6			
						34.9	
						40.3	

Shibeswar Prasad

Digitally signed by Shibeswar Prasad
Date: 2024.04.16
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Dr. Shibeswar Prasad
Technical Manager

Shreyase Prasad

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Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/354		Dt: 16.04.2024		Your PO No. 4000283588-057-1019		Dt: 20.07.2022	
[a] Name and address of the Customer				NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116			
[b] Details of Sample				Monitoring of Ambient Air Quality			
[c] Sample Collected by				By Chitraranjan Kumar (Lab Representative) of Shiva Test House on 08.04.24			
[d] Sampling Location				Collected from Near CW pump house Stage-II			
[e] Method of Sampling				IS 5182 (Part - 14)			
[f] Details of Sample Container (No. & Type of Container)				Filter Paper, Glass Impinger			
[g] Instrument ID				STH/Equip/55, STH/Equip/38			
[h] Sample Quantity				50 ml x 6 (for each NO _x , SO ₂)			
[i] Sample Code				A-354/04/24			
[j] Sample Condition on Receipt				Fit for Analysis			
[k] Items required to be tested				As per contract			
[l] Whether any specific Method of Test has been suggested by the customer				No			
[m] Date of receiving the sample in Laboratory				09.04.24			
[n] Analysis Start Date / Analysis Completion Date				09.04.24 / 14.04.24			
[o] Meteorological Data				Max ^m Temperature		37.0 °C	
				Min ^m Temperature		31.0 °C	
				Relative Humidity		34%	
				Wind Direction		SW	
				Wind Speed		6 Km./hr	
Parameters		Unit	Method of Test	Standard as per NAAQS 2008	Sampling Station Near Baryyah Village RESULTS		
1. Particulate Matter (PM ₁₀)	(µg / m ³)	IS 5182 (Part-23)	100.0	75.4 66.4 74.3	Avg. value:	72.0	
2. Particulate Matter (PM _{2.5})	(µg / m ³)	IS 5182 (Part-24)	60.0	43.8 33.8 42.6	Avg. value:	40.1	
3. Sulphur Dioxide as SO ₂	(µg / m ³)	IS 5182 (Part-2)	80.0	18.8 13.1 9.9 8.9 14.8 16.8	Avg. value:	13.7	
4. Oxides of Nitrogen as NO _x	(µg / m ³)	IS 5182 (Part-6)	80.0	38.9 37.7 26.2 32.9 38.3 39.6	Avg. value:	35.6	

Shibeshwar Prasad

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Shibeshwar Prasad
Date: 2024.04.16
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Dr. Shibeshwar Prasad
Technical Manager

Shreyasee Prasad

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Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/226	Date: 31.05.2024	Your PO No. 4000283588-057-1019	Date: 20.07.2022		
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116				
[b] Details of Sample	Monitoring of Ambient Air Quality				
[c] Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 07.05.24				
[d] Sampling Location	Collected from Near Ash Dyke				
[e] Method of Sampling	IS 5182 (Part - 14)				
[f] Details of Sample Container (No. & Type of Container)	Filter Paper, Glass Impinger				
[g] Instrument ID	STH/Equip/83, STH/Equip/70				
[h] Sample Quantity	30 ml x 6 (for each NO ₂ , SO ₂)				
[i] Sample Code	A-226/05/24				
[j] Sample Condition on Receipt	Fit for Analysis				
[k] Items required to be tested	As per contract				
[l] Whether any specific Method of Test has been suggested by the customer	No				
[m] Date of receiving the sample in Laboratory	08.05.24				
[n] Analysis Start Date / Analysis Completion Date	08.05.24 / 13.05.24				
[o] Meteorological Data	Max ^m Temperature	38.0 °C			
	Min ^m Temperature	27.0 °C			
	Relative Humidity	60%			
	Wind Direction	SW			
	Wind Speed	6 Km/hr			
Parameters	Unit	Method of Test	Standard as per NAAQS 2009	Sampling Station	
				Near Ash Dyke	
				RESULTS	
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100.0	80.3	Avg. value: 71.9
				62.2	
				75.1	
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60.0	41.3	Avg. value: 38.8
				31.3	
				43.8	
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80.0	17.8	Avg. value: 13.4
				13.1	
				9.9	
				8.9	
				13.8	
4. Oxides of Nitrogen as NO ₂	µg / m ³	IS 5182 (Part-6)	80.0	41.6	Avg. value: 34.3
				39.1	
				23.5	
				26.2	
				35.6	
				39.6	

Shibeswar
Prasad

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Verified by :

Dr. Shibeshwar Prasad
Technical Manager



Shreyasee
Prasad

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Authorized Signatory

Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/227	Dt: 31.05.2024	Your PO No. 4000283588-057-1019	Dt: 20.07.2022			
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116					
[b] Details of Sample	Monitoring of Ambient Air Quality					
[c] Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 07.05.24					
[d] Sampling Location	Collected from Near Neta Jee Bhawan					
[e] Method of Sampling	IS 5182 (Part - 14)					
[f] Details of Sample Container (No. & Type of Container)	Filter Paper, Glass Impinger					
[g] Instrument ID	STH/Equip/84, STH/Equip/71					
[h] Sample Quantity	30 ml x 6 (for each NO ₂ , SO ₂)					
[i] Sample Code	A-227/05/24					
[j] Sample Condition on Receipt	Fit for Analysis					
[k] Items required to be tested	As per contract					
[l] Whether any specific Method of Test has been suggested by the customer	No					
[m] Date of receiving the sample in Laboratory	08.05.24					
[n] Analysis Start Date / Analysis Completion Date	08.05.24 / 13.05.24					
[o] Meteorological Data	Max ⁿ Temperature	38.0 °C				
	Min ⁿ Temperature	27.0 °C				
	Relative Humidity	60%				
	Wind Direction	SW				
	Wind Speed	6 Km./hr.				
Sampling Station						
Near Neta Jee Bhawan						
RESULTS						
Parameters	Unit	Method of Test	Standard as per NAAQS 2009			
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100.0	71.9	Avg. value:	68.8
				64.4		
				70.1		
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60.0	41.4	Avg. value:	37.2
				31.4		
				38.9		
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80.0	16.8	Avg. value:	12.6
				14.1		
				9.9		
				8.9		
				10.9		
4. Oxides of Nitrogen as NO ₂	µg / m ³	IS 5182 (Part-6)	80.0	40.3	Avg. value:	32.2
				35.0		
				26.2		
				23.5		
				32.2		
				38.9		

Digitally signed by
Shibeswar Prasad
Date: 2024.06.01
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Verified by :
Dr. Shibeswar Prasad
Technical Manager



Digitally signed by
Shreyasee Prasad
Date: 2024.06.01
12:00:06 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

- END OF TEST REPORT -

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Contact us : 125-C, Aastha, Road No. 5A, Patliputra Colony, Patna-800 013 (Bihar)
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Website : www.shivatest.com ; www.shivatesthouse.com



**SHIVA TEST HOUSE**

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TEST REPORT

Ref. No. STH/TR/24-25/228	Dr: 31.05.2024	Your PO No. 4000283588-057-1019	Dr: 20.07.2022			
(a) Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116					
(b) Details of Sample	Monitoring of Ambient Air Quality					
(c) Sample Collected by	By Prem Kumar (Lab Representative) of Shiva Test House on 07.05.24					
(d) Sampling Location	Collected from Near CW pump house Stage-II					
(e) Method of Sampling	IS 5182 (Part - 14)					
(f) Details of Sample Container (No. & Type of Container)	Filter Paper, Glass Impinger					
(g) Instrument ID	STH/Equip/85, STH/Equip/72					
(h) Sample Quantity	30 ml x 6 (for each NO ₂ , SO ₂)					
(i) Sample Code	A-228/05/24					
(j) Sample Condition on Receipt	Fit for Analysis					
(k) Items required to be tested	As per contract					
(l) Whether any specific Method of Test has been suggested by the customer	No					
(m) Date of receiving the sample in Laboratory	08.05.24					
(n) Analysis Start Date / Analysis Completion Date	08.05.24 / 13.05.24					
(o) Meteorological Data	Max ^o Temperature	35.0 ^o C				
	Min ^o Temperature	27.0 ^o C				
	Relative Humidity	60%				
	Wind Direction	SW				
	Wind Speed	6 Km./hr				
Sampling Station Near CW, Pump House-(Stage-II)						
RESULTS						
Parameters	Unit	Method of Test	Standard as per NAQS 2009			
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100.0	80.4	Avg. value:	74.4
				67.8		
				74.9		
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	80.0	45.5	Avg. value:	40.5
				34.2		
				41.8		
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80.0	17.1	Avg. value:	14.3
				14.4		
				9.1		
				10.1		
				16.1		
4. Oxides of Nitrogen as NO ₂	µg / m ³	IS 5182 (Part-6)	80.0	39.7	Avg. value:	34.0
				37.7		
				24.6		
				26.0		
				35.6		
				40.4		

Shibeswar Prasad
Digitally signed by Shibeswar Prasad
Date: 2024.06.01 11:52:17 +05'30'

Verified by:
Dr. Shibeswar Prasad
Technical Manager



- END OF TEST REPORT -

Shreyase e Prasad
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Date: 2024.06.01 12:01:51 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyase Prasad
Quality Manager

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TEST REPORT

Ref. No. STH/TR/24-25/229		Dt: 31.05.2024		Your PO No. 4000283588-057-1019		Dt: 20.07.2022	
[a] Name and address of the Customer				NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116			
[b] Details of Sample				Monitoring of Ambient Air Quality			
[c] Sample Collected by				By Prem Kumar (Lab Representative) of Shiva Test House on 07.05.24			
[d] Sampling Location				Collected from Near Bariyahi Village			
[e] Method of Sampling				IS 5182 (Part - 14)			
[f] Details of Sample Container (No. & Type of Container)				Filter Paper; Glass Impinger			
[g] Instrument ID				STHEquip/97, STHEquip/73			
[h] Sample Quantity				30 ml x 6 (for each NO _x , SO ₂)			
[i] Sample Code				A-229/03/24			
[j] Sample Condition on Receipt				Fit for Analysis			
[k] Items required to be tested				As per contract			
[l] Whether any specific Method of Test has been suggested by the customer				No			
[m] Date of receiving the sample in Laboratory				08.05.24			
[n] Analysis Start Date / Analysis Completion Date				08.05.24 / 13.05.24			
[o] Meteorological Data				Max ^m Temperature		38.0 °C	
				Min ^m Temperature		27.0°C	
				Relative Humidity		50%	
				Wind Direction		SW	
				Wind Speed		6 Km./hr.	
Parameters		Unit	Method of Test	Standard as per NAAQS 2009	Sampling Station Near Bariyahi Village		
RESULTS							
1.	Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100.0	68.1 63.2 67.9	Avg. value:	66.4
2.	Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60.0	38.0 30.4 35.5	Avg. value:	34.6
3.	Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80.0	14.6 11.0 8.8 9.8 11.7 13.7	Avg. value:	11.8
4.	Oxides of Nitrogen as NO _x	µg / m ³	IS 5182 (Part-6)	80.0	36.3 33.2 25.2 27.9 30.5 34.3	Avg. value:	31.3

Shibeswar Prasad

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Verified by:

Dr. Shibeswar Prasad
Technical Manager



Shreyasee Prasad

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Authorized Signatory

Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. <i>STH/TR/24-25/187</i>	DC: <i>19.06.2024</i>	Your PO No. <i>4000283588-057-1019</i>	DC: <i>20.07.2022</i>		
(a) Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116				
(b) Details of Sample	<i>Monitoring of Ambient Air Quality</i>				
(c) Sample Collected by	<i>By Ashish Kumar (Lab Representative) of Shiva Test House on 08.06.24</i>				
(d) Sampling Location	<i>Ash dyke area of NTPC Barauni</i>				
(e) Method of Sampling	IS 5182 (Part - 14)				
(f) Details of Sample Container (No. & Type of Container)	Filter Paper & Sample Carriage Bottle				
(g) Instrument ID	STH/Equip/64, STH/Equip/41,				
(h) Sample Quantity	30 ml x 6 (for each NO ₂ , SO ₂)				
(i) Sample Code	<i>A-187/06/24</i>				
(j) Sample Condition on Receipt	Fit for Analysis				
(k) Items required to be tested	As per contract				
(l) Whether any specific Method of Test has been suggested by the customer	No				
(m) Date of receiving the sample in Laboratory	<i>08.06.24</i>				
(n) Analysis Start Date / Analysis Completion Date	<i>08.06.24/ 13.06.24</i>				
(o) Meteorological Data	Max ^m Temperature	38.0 °C			
	Min ^m Temperature	37.0 °C			
	Relative Humidity	39%			
	Wind Direction	NW			
	Wind Speed	5.0 Km/hr.			
Parameters	Unit	Method of Test	Standard as per NAAQS 2009	Sampling Station	
				Ash dyke area of NTPC Barauni	
RESULTS					
1. Particulate Matter (PM ₁₀)	(µg / m ³)	IS 5182 (Part-23)	100.0	73.1 68.3 69.4	Avg. value: 70.3
2. Particulate Matter (PM _{2.5})	(µg / m ³)	IS 5182 (Part-24)	60.0	41.8 31.6 40.5	Avg. value: 38.0
3. Sulphur Dioxide as SO ₂	(µg / m ³)	IS 5182 (Part-2)	80.0	17.3 14.4 10.1 11.1 15.1 8.1	Avg. value: 12.6
4. Oxides of Nitrogen as NO ₂	(µg / m ³)	IS 5182 (Part-6)	80.0	39.7 37.7 24.6 27.4 36.2 34.0	Avg. value: 34.1

Shibeswar Prasad

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Date: 2024.06.19
11:08:34 +05'30'Verified by:
Dr. Shibeswar Prasad
Technical Manager

Shreyasee Prasad

Digitally signed by Shreyasee Prasad
Date: 2024.06.19
11:08:40 +05'30'Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. <i>STH/TR/24-25/187(A)</i>	Date: <i>19.06.2024</i>	Your PO No. <i>4000283588-057-1019</i>	Date: <i>20.07.2022</i>	
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI - 851 116			
[b] Details of Sample	<i>Monitoring of Ambient Air Quality</i>			
[c] Sample Collected by	<i>By Ashish Kumar (Lab Representative) of Shiva Test House on 06.06.24</i>			
[d] Sampling Location	Ash dyke area of NTPC Barauni			
[e] Method of Sampling	IS 5182(Part-14)			
[f] Sampling Environmental Condition	Temp.(°C)	38	Humidity(%) 39	
[g] Details of Sample Container (No. & Type of Container)	Filter Paper & Sample Carriage Bottle			
[h] Instrument ID	STH/Equip/64, STH/Equip/41			
[i] Sample Code	<i>A-187/06/24</i>			
[j] Sample Condition on Receipt	Fit for Analysis			
[k] Items required to be tested	As per contract			
[l] Whether any specific Method of Test has been suggested by the customer	No			
[m] Date of receiving the sample in Laboratory	<i>08.06.24</i>			
[n] Analysis Start Date/Analysis Completion Date	<i>08.06.24/ 13.06.24</i>			
Parameters	Unit	Method of Test	Standard as per NAAQS 2009	Sampling Station
				Ash dyke area of NTPC Barauni
1. Carbon Monoxide (CO)	mg /m ³	IS 5182(Part-10)	4 mg/m ³	0.40
2. Lead (Pb)	µg / m ³	IS 5182(Part-22)	1 µg/m ³	0.04
3. Ammonia as NH ₃	µg /m ³	IS 5182 (Part-25)	400 µg/m ³	13.7
4. Ozone (O ₃)	µg /m ³	IS 5182(Part-9)	180 µg/m ³	42.7
5. Benzene(C ₆ H ₆)	µg /m ³	IS 5182(Part-11)	5 µg/m ³	0.11
6. Benzo (a) Pyrene	ng/ m ³	IS 5182(Part-12)	1 ng/m ³	0.12
7. Arsenic (As)	ng /m ³	AAS Method	6 ng/m ³	0.10
8. Nickel as Ni	ng /m ³	AAS Method	20 ng/m ³	2.81

**Shibeswar
Prasad**

Digitally signed by
Shibeswar Prasad
Date: 2024.06.19
11:09:52 +05'30'

Verified by :
Dr. Shibeswar Prasad
Technical Manager



**Shreyasee
Prasad**

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Shreyasee Prasad
Date: 2024.06.19
11:09:03 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. <i>STH/TR/24-25/188</i>		Dt. <i>19.06.2024</i>		Your PO No. <i>4000283588-057-1019</i>		Dt. <i>20.07.2022</i>	
(a) Name and address of the Customer				NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116			
(b) Details of Sample				<i>Monitoring of Ambient Air Quality</i>			
(c) Sample Collected by				<i>By Ashish Kumar (Lab Representative) of Shiva Test House on 06.06.24</i>			
(d) Sampling Location				<i>Near Neta Ji Bhawan (NTPC Barauni)</i>			
(e) Method of Sampling				IS 5182 (Part - 14)			
(f) Details of Sample Container (No. & Type of Container)				Filter Paper & Sample Carriage Bottle			
(g) Instrument ID				STH/Equip/65, STH/Equip/42			
(h) Sample Quantity				30 ml x 6 (for each NO ₂ , SO ₂)			
(i) Sample Code				<i>A-188/06/24</i>			
(j) Sample Condition on Receipt				Fit for Analysis			
(k) Items required to be tested				As per contract			
(l) Whether any specific Method of Test has been suggested by the customer				No			
(m) Date of receiving the sample in Laboratory				08.06.24			
(n) Analysis Start Date / Analysis Completion Date				08.06.24/ 13.06.24			
(o) Meteorological Data				Max ⁿ Temperature		38.0 °C	
				Min ⁿ Temperature		37.0 °C	
				Relative Humidity		39%	
				Wind Direction		NW	
				Wind Speed		5.0 Km./hr.	
Parameters		Unit	Method of Test	Standard as per NAAQS 2009	Sampling Station		
					Near Neta Ji Bhawan (NTPC Barauni)		
RESULTS							
1.	Particulate Matter (PM ₁₀)	(µg / m ³)	IS 5182 (Part-23)	100.0	71.6 63.2 66.9	Avg. value:	67.2
2.	Particulate Matter (PM _{2.5})	(µg / m ³)	IS 5182 (Part-24)	60.0	43.8 31.2 42.6	Avg. value:	39.2
3.	Sulphur Dioxide as SO ₂	(µg / m ³)	IS 5182 (Part-2)	80.0	17.8 15.1 8.9 10.9 13.8 16.8	Avg. value:	13.9
4.	Oxides of Nitrogen as NO ₂	(µg / m ³)	IS 5182 (Part-6)	30.0	41.0 35.7 23.5 26.2 35.6 36.9	Avg. value:	33.1

Shibeswar Prasad

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Shibeswar Prasad
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Verified by:
Dr. Shibeswar Prasad
Technical Manager



Shreyasee Prasad

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Shreyasee Prasad
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Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. <i>STH/TR/24-25/188(A)</i>	Dt: <i>19.06.2024</i>	Your PO No. <i>4000283588-057-1019</i>	Dt: <i>20.07.2022</i>	
[a] Name and address of the Customer.	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116			
[b] Details of Sample	<i>Monitoring of Ambient Air Quality</i>			
[c] Sample Collected by	<i>By Ashish Kumar (Lab Representative) of Shiva Test House on 06.06.24</i>			
[d] Sampling Location	<i>Near Neta Ji Bhawan (NTPC Barauni)</i>			
[e] Method of Sampling	<i>IS 5182 (Part - 14)</i>			
[f] Sampling Environmental Condition	Temp.(^o C)	<i>39</i>	Humidity (%) <i>39</i>	
[g] Details of Sample Container (No. & Type of Container)	<i>Filter Paper & Sample Carriage Bottle</i>			
[h] Instrument ID	<i>STH/Equip/65, STH/Equip/42</i>			
[i] Sample Code	<i>A-188/06/24</i>			
[j] Sample Condition on Receipt	<i>Fit for Analysis</i>			
[k] Items required to be tested	<i>As per contract</i>			
[l] Whether any specific Method of Test has been suggested by the customer	<i>No</i>			
[m] Date of receiving the sample in Laboratory	<i>08.06.24</i>			
[n] Analysis Start Date/Analysis Completion Date	<i>08.06.24/ 13.06.24</i>			
Parameters	Unit	Method of Test	Standard as per NAAQS 2009	Sampling Station
				<i>Near Neta Ji Bhawan (NTPC Barauni)</i>
1. Carbon Monoxide(CO)	mg /m ³	IS 5182(Part-10)	4 mg/m ³	0.51
2. Lead (Pb)	µg / m ³	IS 5182(Part-22)	1 µg/m ³	0.02
3. Ammonia as NH ₃	µg /m ³	IS 5182 (Part-25)	400 µg/m ³	13.6
4. Ozone (O ₃)	µg /m ³	IS 5182(Part-9)	180 µg/m ³	39.5
5. Benzene(C ₆ H ₆)	µg /m ³	IS 5182(Part-11)	5 µg/m ³	0.14
6. Benzo (a) Pyrene	ng/ m ³	IS 5182(Part-12)	1 ng/m ³	0.11
7. Arsenic (As)	ng /m ³	AAS Method	6 ng/m ³	0.10
8. Nickel as Ni	ng /m ³	AAS Method	20 ng/m ³	2.84

**Shibeswar
Prasad**

Digitally signed by
Shibeswar Prasad
Date: 2024.06.19
11:07:22 +05'30'

Verified by:
Dr. Shibeswar Prasad
Technical Manager

**Shreyase
e Prasad**

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Date: 2024.06.19
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Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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TEST REPORT

Ref. No. <i>STH/TR/24-25/189</i>	Date: <i>19.06.2024</i>	Your PO No. <i>4000283588-057-1019</i>	Date: <i>20.07.2022</i>		
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116				
[b] Details of Sample	<i>Monitoring of Ambient Air Quality</i>				
[c] Sample Collected by	<i>By Ashish Kumar (Lab Representative) of Shiva Test House on 06.06.24</i>				
[d] Sampling Location	<i>Near Bariyahi Village (NTPC Barauni)</i>				
[e] Method of Sampling	IS 5182 (Part - 14)				
[f] Details of Sample Container (No. & Type of Container)	Filter Paper & Sample Carriage Bottle				
[g] Instrument ID	STH/Equip/67, STH/Equip/43				
[h] Sample Quantity	30 ml x 6 (for each NO ₂ , SO ₂)				
[i] Sample Code	<i>A-189/06/24</i>				
[j] Sample Condition on Receipt	Fit for Analysis				
[k] Items required to be tested	As per contract				
[l] Whether any specific Method of Test has been suggested by the customer	No				
[m] Date of receiving the sample in Laboratory	08.06.24				
[n] Analysis Start Date / Analysis Completion Date	08.06.24/ 13.06.24				
[o] Meteorological Data	Max ⁿ Temperature		38.0 °C		
	Min ⁿ Temperature		37.0 °C		
	Relative Humidity		39%		
	Wind Direction		NW		
	Wind Speed		5.0 Km/hr.		
	Sampling Station				
	Near Bariyahi Village (NTPC Barauni)				
	RESULTS				
Parameters	Unit	Method of Test	Standard as per NAAQS 2009		
1. Particulate Matter (PM ₁₀)	(µg / m ³)	IS 5182 (Part-23)	100.0	66.4 64.7 67.9	Avg. value: 66.4
2. Particulate Matter (PM _{2.5})	(µg / m ³)	IS 5182 (Part-24)	40.0	40.6 31.7 38.0	Avg. value: 36.8
3. Sulphur Dioxide as SO ₂	(µg / m ³)	IS 5182 (Part-2)	80.0	16.6 14.0 10.7 11.7 14.6 17.6	Avg. value: 14.2
4. Oxides of Nitrogen as NO ₂	(µg / m ³)	IS-5182 (Part-6)	80.0	37.8 37.3 29.9 28.5 34.5 38.5	Avg. value: 34.4

Shibeswar Prasad

Digitally signed by
Shibeswar Prasad
Date: 2024.06.19
11:07:34 +05'30'

Verified by :
Dr. Shibeswar Prasad
Technical Manager



Shreyasee Prasad

Digitally signed by
Shreyasee Prasad
Date: 2024.06.19
11:09:53 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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Website: www.shivatohouse.com ; www.shivatohouse.com

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(Serving since 1988)

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TEST REPORT

Ref. No. <i>STH/TR/24-25/189(A)</i>	Dt: <i>19.06.2024</i>	Your PO No. <i>4000283588-057-1019</i>	Dt: <i>20.07.2022</i>	
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116			
[b] Details of Sample	<i>Monitoring of Ambient Air Quality</i>			
[c] Sample Collected by	<i>By Ashish Kumar (Lab Representative) of Shiva Test House on 06.06.24</i>			
[d] Sampling Location	<i>Near Barlyahi Village (NTPC Barauni)</i>			
[e] Method of Sampling	IS 5182(Part-14)			
[f] Sampling Environmental Condition	Temp.(^o C)	38	Humidity (%) 68	
[g] Details of Sample Container (No. & Type of Container)	Filter Paper & Sample Carriage Bottle			
[h] Instrument ID	STH/Equip/57, STH/Equip/43			
[i] Sample Code	<i>A-189/06/24</i>			
[j] Sample Condition on Receipt	Fit for Analysis			
[k] Items required to be tested	As per contract			
[l] Whether any specific Method of Test has been suggested by the customer	No			
[m] Date of receiving the sample in Laboratory	<i>08.06.24</i>			
[n] Analysis Start Date/Analysis Completion Date	<i>08.06.24/ 13.06.24</i>			
Parameters	Unit	Method of Test	Standard as per NAAQS 2009	Sampling Station <i>Near Barlyahi Village (NTPC Barauni)</i>
1. Carbon Monoxide(CO)	mg /m ³	IS 5182(Part-10)	4 mg/m ³	0.49
2. Lead (Pb)	ug / m ³	IS 5182(Part-22)	1 ug/m ³	0.01
3. Ammonia as NH ₃	ug /m ³	IS 5182 (Part-25)	400 ug/m ³	12.2
4. Ozone (O ₃)	ug /m ³	IS 5182(Part-6)	180 ug/m ³	45.1
5. Benzene(C ₆ H ₆)	ug /m ³	IS 5182(Part-11)	5 ug/m ³	0.12
6. Benzo (a) Pyrene	ng/ m ³	IS 5182(Part-12)	1 ng/m ³	0.15
7. Arsenic (As)	ng /m ³	AAS Method	6 ng/m ³	0.10
8. Nickel as Ni	ng /m ³	AAS Method	20 ng/m ³	2.79

Shibeswar Prasad
Digitally signed by Shibeswar Prasad
Date: 2024.06.19
11:07:47 +05'30'

Verified by:
Dr. Shibeswar Prasad
Technical Manager



Shreyasee Prasad
Digitally signed by Shreyasee Prasad
Date: 2024.06.19
11:10:10 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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Contact us : 122-C, Aamha, Road No. 5A, Patliputra Colony, Patna – 800 013 (Bihar)
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Website : www.shivatest.com ; www.shivatesthouse.com



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TEST REPORT

Ref. No. <i>STH/TR/24-25/190</i>	Date <i>19.06.2024</i>	Year PO No. <i>4000283588-057-1019</i>	Date <i>20.07.2022</i>										
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAJ – 851 116												
[b] Details of Sample	<i>Monitoring of Ambient Air Quality</i>												
[c] Sample Collected by	<i>By Ashish Kumar (Lab Representative) of Shiva Test House on 08.06.24</i>												
[d] Sampling Location	<i>Near CW Pump House Stage 2 (NTPC Barauni)</i>												
[e] Method of Sampling	IS 5182 (Part - 14)												
[f] Details of Sample Container (No. & Type of Container)	Filter Paper & Sample Carriage Bottle												
[g] Instrument ID	STH/Equip/68, STH/Equip/44												
[h] Sample Quantity	30 ml x 6 (for each NO ₂ , SO ₂)												
[i] Sample Code	<i>A-190/06/24</i>												
[j] Sample Condition on Receipt	Fit for Analysis												
[k] Items required to be tested	As per contract												
[l] Whether any specific Method of Test has been suggested by the customer	No												
[m] Date of receiving the sample in Laboratory	<i>08.06.24</i>												
[n] Analysis Start Date / Analysis Completion Date	<i>08.06.24/ 13.06.24</i>												
[o] Meteorological Data	<table border="1"> <tr> <td>Max^m Temperature</td> <td>38.0 °C</td> </tr> <tr> <td>Min^m Temperature</td> <td>37.0 °C</td> </tr> <tr> <td>Relative Humidity</td> <td>39%</td> </tr> <tr> <td>Wind Direction</td> <td><i>NW</i></td> </tr> <tr> <td>Wind Speed</td> <td><i>5.0 Km/hr.</i></td> </tr> </table>			Max ^m Temperature	38.0 °C	Min ^m Temperature	37.0 °C	Relative Humidity	39%	Wind Direction	<i>NW</i>	Wind Speed	<i>5.0 Km/hr.</i>
Max ^m Temperature	38.0 °C												
Min ^m Temperature	37.0 °C												
Relative Humidity	39%												
Wind Direction	<i>NW</i>												
Wind Speed	<i>5.0 Km/hr.</i>												
Parameters	Unit	Method of Test	Standard as per NAAQS 2009	Sampling Station									
				Near CW Pump House Stage 2 (NTPC Barauni)									
Results													
1. Particulate Matter (PM ₁₀)	($\mu\text{g} / \text{m}^3$)	IS 5182 (Part-23)	100.0	72.4 64.6 71.0	Avg. value: 69.3								
2. Particulate Matter (PM _{2.5})	($\mu\text{g} / \text{m}^3$)	IS 5182 (Part-24)	60.0	40.6 34.2 43.1	Avg. value: 39.3								
3. Sulphur Dioxide as SO ₂	($\mu\text{g} / \text{m}^3$)	IS 5182 (Part-2)	80.0	14.6 14.0 4.9 8.8 10.7 15.6	Avg. value: 11.4								
4. Oxides of Nitrogen as NO ₂	($\mu\text{g} / \text{m}^3$)	IS 5182 (Part-6)	80.0	33.8 38.5 31.9 37.2 29.2 30.5	Avg. value: 30.2								

Shibeswar Prasad

Digitally signed by
Shibeswar Prasad
Date: 2024.06.19
11:08:01 +05'30'

Verified by :
Dr. Shibeshwar Prasad
Technical Manager

Shreyasee Prasad

Digitally signed by
Shreyasee Prasad
Date: 2024.06.19
11:10:28 +05'30'

Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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Website : www.shivatest.com ; www.shivatesthouse.com



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TEST REPORT

Ref. No: <i>STH/TR/24-25/190(A)</i>	Dt: <i>19.06.2024</i>	Your PO No. <i>4090283588-057-1019</i>	Dt: <i>20.07.2023</i>	
[a] Name and address of the Customer	NTPC LIMITED BARAUNI THERMAL POWER PLANT PROJECT NH 31, BARAUNI BEGUSARAI – 851 116			
[b] Details of Sample	<i>Monitoring of Ambient Air Quality</i>			
[c] Sample Collected by	<i>By Ashish Kumar (Lab Representative) of Shiva Test House on 06.06.24</i>			
[d] Sampling Location	<i>Near CW Pump House Stage 2 (NTPC Barauni)</i>			
[e] Method of Sampling	IS 5182(Part -14)			
[f] Sampling Environmental Condition	Temp.(^o C)	38	Humidity(%) 68	
[g] Details of Sample Container (No. & Type of Container)	Filter Paper & Sample Carriage Bottle			
[h] Instrument ID	STH/Equip/68, STH/Equip/44			
[i] Sample Code	A-190/06/24			
[j] Sample Condition on Receipt	Fit for Analysis			
[k] Items required to be tested	As per contract			
[l] Whether any specific Method of Test has been suggested by the customer	No			
[m] Date of receiving the sample in Laboratory	08.06.24			
[n] Analysis Start Date/Analysis Completion Date	08.06.24/ 13.06.24			
Parameters	Unit	Method of Test	Standard as per NAAQS2009	Sampling Station
				<i>Near CW Pump House Stage 2 (NTPC Barauni)</i>
1. Carbon Monoxide (CO)	mg /m ³	IS 5182(Part-10)	4 mg/m ³	0.51
2. Lead (Pb)	µg / m ³	IS 5182(Part-22)	1 µg/m ³	0.03
3. Ammonia as NH ₃	µg /m ³	IS 5182 (Part-25)	400 µg/m ³	14.2
4. Ozone (O ₃)	µg /m ³	IS 5182(Part-9)	100 µg/m ³	39.05
5. Benzene(C ₆ H ₆)	µg /m ³	IS 5182(Part-11)	5 µg/m ³	0.15
6. Benzo (a) Pyrene	ng/ m ³	IS 5182(Part-12)	1 ng/m ³	0.17
7. Arsenic (As)	ng /m ³	AAS Method	4 ng/m ³	0.10
8. Nickel as Ni	ng /m ³	AAS Method	20 ng/m ³	2.74

Shibeswar PrasadDigitally signed by
Shibeswar Prasad
Date: 2024.06.19
11:08:23 +05'30'Verified by :
Dr. Shibeshwar Prasad
Technical Manager**Shreyasee Prasad**Digitally signed by
Shreyasee Prasad
Date: 2024.06.19
11:16:48 +05'30'Authorized Signatory
Dr. (Mrs.) Shreyasee Prasad
Quality Manager

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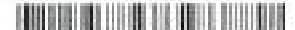
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Head Office :
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Email : ccc@shivatesthouse.in
ccc@shivatesthouse.in



Annexure-VII

OMSHIVA TEST HOUSE PVT L



STH/24/07/135

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : AAQ (As per NAAQS)
Location of Sampling : Near Ash dyke
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/07/135
Date of Sampling 09.07.2024
Sample Received on 10.07.2024
Method of Sampling IS 5182 (Part - 14 & 5)
Env. Condition Temp. 33°C Humidity 61%
Instrument ID STH/Equip/26, 113
Sample Quantity & Container 30 ml x 6 for each (NO₂, SO₂); Filter Paper & Sample Carriage Bottle
Sample Collected by Mr. Chitranjan Kumar; Lab Representative

Analysis Details :

Sample Code STH/24/07/135
Analysis Start Date 10.07.2024
Analysis Completion Date 15.07.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 22.07.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Limit as per NAAQS 2009	Sampling Station	
				Near Ash dyke area of NTPC Barauni	
				RESULTS	
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100 µg / m ³	76.2	
				63.8	
				71.4	
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60 µg / m ³	41.3	
				31.3	
				37.6	
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80 µg / m ³	13.9	
				12.6	
				9.3	
				10.8	
				8.5	
4. Nitrogen Dioxide as NO ₂	µg / m ³	IS 5182 (Part-6)	80 µg / m ³	13.1	
				39.6	
				33.3	
				22.7	
				21.5	
Average Value				34.5	
				37.8	
PM ₁₀	µg / m ³			70.5	
PM _{2.5}	µg / m ³			36.7	
SO ₂	µg / m ³			11.4	
NO ₂	µg / m ³			31.5	

Reviewed by :

Abhishek Kumar, Soc. In (Air Proximate)

— END OF REPORT —

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

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Annexure-VII

OMSHIVA TEST HOUSE PVT L



STH/24/07/136

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : AAQ (As per NAAQS)
Location of Sampling : Near Neta Jee Bhawan
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/07/136
Date of Sampling 09.07.2024
Sample Received on 10.07.2024
Method of Sampling IS 5182 (Part - 14 & 5)
Env. Condition Temp. 33°C Humidity 61%
Instrument ID STH/Equip/27, 115
Sample Quantity & Container 30 ml x 6 for each (NO₂, SO₂); Filter Paper & Sample Carriage Bottle
Sample Collected by Mr. Chitranjan Kumar; Lab Representative

Analysis Details :

Sample Code STH/24/07/136
Analysis Start Date 10.07.2024
Analysis Completion Date 15.07.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 22.07.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Limit as per NAAQS 2009	Sampling Station
				Near Neta Jee Bhawan of NTPC Barauni
				RESULTS
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100 µg / m ³	75.3
				62.9
				68.4
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60 µg / m ³	37.7
				30.1
				36.4
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80 µg / m ³	17.8
				12.6
				10.8
				3.5
				11.6
4. Nitrogen Dioxide as NO ₂	µg / m ³	IS 5182 (Part-6)	80 µg / m ³	15.4
				36.7
				35.1
				22.7
				26.2
Average Value				32.0
PM ₁₀	µg / m ³			68.9
PM _{2.5}	µg / m ³			34.7
SO ₂	µg / m ³			12.8
NO ₂	µg / m ³			32.0



Reviewed by :


Authorized Signatory :

Abhishek Kumar, Sec. I/c (Air Proximate)

— END OF REPORT —



Quality Manager :
Dr. (Mrs.) Shreyas Prasad

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Email : ceo@shivatesthouse.in
cao@shivatesthouse.in



Annexure-VII

OMSHIVA TEST HOUSE PVT L



STH/24/07/137

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer :

Name / Nature of Sample : AAQ (As per NAAQS)
Location of Sampling : Near CW Pump House
W.O No. : 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number : STH/TR/24-25/07/137
Date of Sampling : 09.07.2024
Sample Received on : 10.07.2024
Method of Sampling : IS 5182 (Part – 14 & 5)
Env. Condition : Temp. 33°C Humidity 61%
Instrument ID : STH/Equip/54, 116
Sample Quantity & Container : 30 ml x 6 for each (NO₂, SO₂); Filter Paper & Sample Carriage Bottle
Sample Collected by : Mr. Chitranjan Kumar, Lab Representative

Analysis Details :

Sample Code : STH/24/07/137
Analysis Start Date : 10.07.2024
Analysis Completion Date : 15.07.2024
Sample Condition on Receipt : Fit for analysis
Items required to be Tested : As per contract
Any Specific Test Method : No
Reporting Date : 22.07.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Limit as per NAAQS 2009	Sampling Station
				Near CW Pump House of NTPC Barauni
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100 µg / m ³	69.8
				66.3
				67.7
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60 µg / m ³	43.0
				31.6
				41.8
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80 µg / m ³	14.2
				11.2
				8.6
				9.4
				13.4
4. Nitrogen Dioxide as NO ₂	µg / m ³	IS 5182 (Part-6)	80 µg / m ³	14.9
				34.4
				31.5
				21.3
				22.5
Average Value				26.7
PM ₁₀	µg / m ³			35.0
PM _{2.5}	µg / m ³			67.9
SO ₂	µg / m ³			38.8
NO ₂	µg / m ³			12.0
				28.6

Reviewed by :



Abhishek Kumar, Sec. Uc (Air Proximate)

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

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Email : ccc@shivatesthouse.in
ccc@shivatesthouse.in



Annexure-VII

OMSHIVA TEST HOUSE PVT LTD



STH/24/87/138

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : AAQ (As per NAAQS)
Location of Sampling : Near Bariahi Village
W.O No.: 4000283688-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/07/138
Date of Sampling 09.07.2024
Sample Received on 10.07.2024
Method of Sampling IS 5182 (Part - 14 & 5)
Env. Condition Temp. 33°C Humidity 61%
Instrument ID STH/Equip/55, 39
Sample Quantity & Container 30 ml x 6 for each (NO₂, SO₂); Filter Paper & Sample Carriage Bottle
Sample Collected by Mr. Chitranjan Kumar; Lab Representative

Analysis Details :

Sample Code STH/24/07/138
Analysis Start Date 10.07.2024
Analysis Completion Date 15.07.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 22.07.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Limit as per NAAQS 2009	Sampling Station		
				Near Bariahi Village of NTPC Barauni		
RESULTS						
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100 µg / m ³	78.0		
				67.8		
				72.6		
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60 µg / m ³	44.4		
				32.9		
				43.1		
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80 µg / m ³	13.7		
				11.7		
				9.9		
				8.4		
				9.9		
4. Nitrogen Dioxide as NO ₂	µg / m ³	IS 5182 (Part-6)	80 µg / m ³	12.2		
				37.4		
				34.7		
				25.9		
				28.2		
Average Value				32.2		
				19.7		
				PM ₁₀	µg / m ³	72.8
				PM _{2.5}	µg / m ³	40.1
				SO ₂	µg / m ³	11.0
NO ₂	µg / m ³	33.0				



Reviewed by :



Abhishek Kumar, Sec. I/c (Air Proximate)



Quality Manager :
Dr. (Mrs.) Shreyas Prasad

--- END OF REPORT ---

N.B.: (1) This report applies only to sample tested as above. (2) Total Liability of our Laboratory is limited to invoiced amount. (3) Test Report endorsed only the tests and not the product certificate. (4) Test Report cannot be reproduced partially or full for legal/court purpose without written permission of the Laboratory.





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csd@shivatesthouse.in



Annexure-VII



OMSHIVA TEST HOUSE PVT LTD



STH/24/08/106

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : AAQ (As per NAAQS)
Location of Sampling : Near Neta Jee Bhawan
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/08/106
Date of Sampling 07.08.2024
Sample Received on 09.08.2024
Method of Sampling IS 5182 (Part - 14 & 5)
Env. Condition Temp. 35°C Humidity 70%
Instrument ID STH/Equip/28, 113
Sample Quantity & Container 30 ml x 6 for each (NO₂, SO₂); Filter Paper & Sample Camage Bottle
Sample Collected by Mr. Chitranjan Kumar, Lab Representative

Analysis Details :

Sample Code STH/24/08/106
Analysis Start Date 09.08.2024
Analysis Completion Date 14.08.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 16.08.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Limit as per NAAQS 2009	Sampling Station	
				Near Neta Jee Bhawan of NTPC Barauni	
				RESULTS	
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100 µg / m ³	75.2	
				69.0	
				71.9	
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60 µg / m ³	38.8	
				33.8	
				41.3	
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80 µg / m ³	19.3	
				16.6	
				10.8	
				12.4	
				9.3	
				17.0	
4. Nitrogen Dioxide as NO ₂	µg / m ³	IS 5182 (Part-6)	80 µg / m ³	37.8	
				36.8	
				30.8	
				32.0	
				31.4	
				36.7	
Average Value					
PM ₁₀	µg / m ³			72.1	
PM _{2.5}	µg / m ³			38.0	
SO ₂	µg / m ³			14.2	
NO ₂	µg / m ³			34.3	



Vedant Sharma
Reviewed by :

Abhishek Kumar
Authorized Signatory :
Abhishek Kumar, Sec. In-charge (Air Proximata)

Shreyasee Prasad
Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

--- END OF REPORT ---

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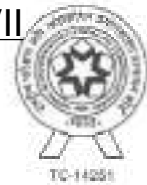
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Annexure-VII



OMSHIVA TEST HOUSE PYT LTI



STH/24/08/107

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : AAQ (As per NAAQS)
Location of Sampling : Near Ash Dyke
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number : STH/TR/24-25/08/107
Date of Sampling : 07.08.2024
Sample Received on : 09.08.2024
Method of Sampling : IS 5182 (Part - 14 & 5)
Env. Condition : Temp. 35°C Humidity 70%
Instrument ID : STH/Equip/27, 114
Sample Quantity & Container : 30 ml x 6 for each (NO₂, SO₂); Filter Paper & Sample Carriage Bottle
Sample Collected by : Mr. Chitranjan Kumar, Lab Representative

Analysis Details :

Sample Code : STH/24/08/107
Analysis Start Date : 09.08.2024
Analysis Completion Date : 14.08.2024
Sample Condition on Receipt : Fit for analysis
Items required to be Tested : As per contract
Any Specific Test Method : No
Reporting Date : 16.08.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Limit as per NAAQS 2009	Sampling Station	
				Near Ash Dyke of NTPC Barauni	
				Results	
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100 µg / m ³	72.6	
				66.5	
				72.3	
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60 µg / m ³	40.2	
				31.4	
				37.7	
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80 µg / m ³	16.2	
				13.4	
				19.8	
				7.7	
				9.3	
				14.7	
4. Nitrogen Dioxide as NO ₂	µg / m ³	IS 5182 (Part-6)	80 µg / m ³	37.2	
				33.7	
				32.0	
				36.3	
				31.4	
				36.1	
Average Value					
PM ₁₀	µg / m ³			70.5	
PM _{2.5}	µg / m ³			36.4	
SO ₂	µg / m ³			12.0	
NO ₂	µg / m ³			33.8	



Vishal Sharma
Reviewed by :

Abhishek Kumar
Authorized Signatory :
Abhishek Kumar, Sec. In (Air Proximate)

Shreyasee Prasad
Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

--- END OF REPORT ---

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Annexure-VII



OMSHIVA TEST HOUSE PYT LTD



STH/24/08/108

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : AAQ (As per NAAQS)
Location of Sampling : Near CW Pump House
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/08/108
Date of Sampling 07.08.2024
Sample Received on 09.08.2024
Method of Sampling IS 5182 (Part - 14 & 5)
Env. Condition Temp. 35°C Humidity 70%
Instrument ID STH/Equip/54, 115
Sample Quantity & Container 30 ml x 6 for each (NO₂, SO₂); Filter Paper & Sample Carriage Bottle
Sample Collected by Mr. Chitranjan Kumar; Lab Representative

Analysis Details :

Sample Code STH/24/08/108
Analysis Start Date 09.08.2024
Analysis Completion Date 14.08.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 16.08.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Limit as per NAAQS 2009	Sampling Station	
				Near CW Pump House of NTPC Barauni	
				RESULTS	
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100 µg / m ³	73.6	
				63.9	
				66.3	
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60 µg / m ³	41.8	
				34.2	
				36.7	
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80 µg / m ³	14.9	
				13.7	
				11.8	
				7.9	
				9.4	
4. Nitrogen Dioxide as NO ₂	µg / m ³	IS 5182 (Part-6)	80 µg / m ³	34.4	
				33.3	
				30.8	
				30.2	
				32.0	
Average Value					
PM ₁₀	µg / m ³			67.6	
PM _{2.5}	µg / m ³			37.5	
SO ₂	µg / m ³			11.4	
NO ₂	µg / m ³			32.3	



Vedant Sharma
Reviewed by :

Abhishek Kumar
Authorized Signatory :
Abhishek Kumar, Sec. I/c (Air Proximate)

Shreyasee Prasad
Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

--- END OF REPORT ---

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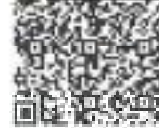
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Annexure-VII



OMSHIVA TEST HOUSE PYT LT



STH/24/08/109

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer :

Name / Nature of Sample : AAQ (As per NAAQS)
Location of Sampling : Near Bariahi Village
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/08/109
Date of Sampling 07.08.2024
Sample Received on 09.08.2024
Method of Sampling IS 5182 (Part – 14 & 5)
Env. Condition Temp. 35 °C Humidity 70%
Instrument ID STH/Equip/55, 116
Sample Quantity & Container 30 ml x 6 for each (NO₂, SO₂); Filter Paper & Sample Carriage Bottle
Sample Collected by Mr. Chitranjan Kumar, Lab Representative

Analysis Details :

Sample Code STH/24/08/109
Analysis Start Date 09.08.2024
Analysis Completion Date 14.08.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 16.08.2024

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Limit as per NAAQS 2009	Sampling Station
				Near Bariahi Village of NTPC Barauni
				RESULTS
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100 µg / m ³	68.2
				56.5
				64.4
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60 µg / m ³	37.6
				32.6
				36.3
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80 µg / m ³	14.7
				12.6
				7.7
				6.9
				8.5
				10.0
4. Nitrogen Dioxide as NO ₂	µg / m ³	IS 5182 (Part-6)	80 µg / m ³	33.7
				32.1
				32.0
				30.8
				30.3
				32.6
Average Value				
PM ₁₀	µg / m ³			63.0
PM _{2.5}	µg / m ³			35.5
SO ₂	µg / m ³			10.1
NO ₂	µg / m ³			31.9



Vishal Sharma
Reviewed by :

Abhishek Kumar
Authorized Signatory :
Abhishek Kumar, Sec. In (Air Proximate)

Shreyasee Prasad
Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

--- END OF REPORT ---

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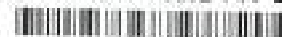


Annexure-VII



SC-48254

OMSHIVA TEST HOUSE PVT LTI



STH/24/09/615

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : AAQ (As per NAAQS)
Location of Sampling : Near Ash Dyke
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number : STH/TR/24-25/09/615
Date of Sampling : 23.09.2024
Sample Received on : 25.09.2024
Method of Sampling : IS 5182 (Part - 14 & 5)
Env. Condition : Temp. 38°C Humidity 72%
Instrument ID : STH/Equip/26, 113
Sample Quantity & Container : 30 ml x 6 for each (NO₂, SO₂); Filter Paper & Sample Carriage Bottle
Sample Collected by : Mr. Chitraranjan Kumar, Lab Representative

Analysis Details :

Sample Code : STH/24/09/615
Analysis Start Date : 25.09.2024
Analysis Completion Date : 29.09.2024
Sample Condition on Receipt : Fit for analysis
Items required to be Tested : As per contract
Any Specific Test Method : No
Reporting Date : 29.09.2024
Report Prepared By : S.K. Singh

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Limit as per NAAQS 2009	Sampling Station / Result
				Near Ash Dyke
Chemical Analysis				
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100	69.5
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60	39.3
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80	13.4
4. Nitrogen Dioxide as NO ₂	µg / m ³	IS 5182 (Part-6)	80	34.0
5. Ozone (O ₃)	µg / m ³	IS 5182 (Part-9)	180	43.5
6. Ammonia as NH ₃	µg / m ³	IS 5182 (Part-25)	400	14.8
7. Carbon Monoxide (CO)	mg / m ³	IS 5182 (Part-10)	4	0.54
Metal Analysis				
8. Arsenic (As)	ng / m ³	NAAQS (VOL-1)	6	BLQ
9. Nickel as Ni	ng / m ³	NAAQS (VOL-1)	20	BLQ
10. Lead (Pb)	µg / m ³	IS 5182 (Part-22)	1	BLQ
Residues Analysis				
11. Benzene (C ₆ H ₆)	µg / m ³	IS 5182 (Part-11)	5	0.22
12. Benzo(a) Pyrene	ng / m ³	IS 5182 (Part-12)	1	0.19

BLQ= Below Limit of Quantification

Vishal Sharma

Reviewed by:
Vishal Sharma (DQM)



Chitraranjan Das

Authorized Signatory:
Chitraranjan Das, Sec. Ic (Food, Residue & Water Proximate)

Abhishek Kumar

Authorized Signatory :
Abhishek Kumar, Sec. Ic (Air Proximate)

Sagar Gokhe

Authorized Signatory :
Sagar Gokhe, Sec. Ic (Metals)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

----- END OF REPORT -----

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Annexure-VII



OMSHIVA TEST HOUSE PVT. LTD



STH/24/09/616

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI – 851 116

Information by Customer :

Name / Nature of Sample : AAQ (As per NAAQS)
Location of Sampling : Near Vinod Bhawan
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number STH/TR/24-25/09/616
Date of Sampling 23.09.2024
Sample Received on 25.09.2024
Method of Sampling IS 5182 (Part – 14 & 5)
Env. Condition Temp. 38 °C Humidity 72%
Instrument ID STH/Equip/27, 114
Sample Quantity & Container 30 ml x 6 for each (NO₂, SO₂); Filter Paper & Sample Carriage Bottle
Sample Collected by Mr. Chitraranjan Kumar, Lab Representative

Analysis Details :

Sample Code STH/24/09/616
Analysis Start Date 25.09.2024
Analysis Completion Date 29.09.2024
Sample Condition on Receipt Fit for analysis
Items required to be Tested As per contract
Any Specific Test Method No
Reporting Date 29.09.2024
Report Prepared By S.K. Singh

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Limit as per NAAQS 2009	Sampling Station / Result
				Near Vinod Bhawan
Chemical Analysis				
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100	63.4
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60	35.5
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80	11.0
4. Nitrogen Dioxide as NO ₂	µg / m ³	IS 5182 (Part-6)	80	31.5
5. Ozone (O ₃)	µg / m ³	IS 5182 (Part-9)	180	34.34
6. Ammonia as NH ₃	µg / m ³	IS 5182 (Part-25)	400	13.4
7. Carbon Monoxide (CO)	mg / m ³	IS 5182 (Part-10)	4	0.45
Metal Analysis				
8. Arsenic (As)	ng / m ³	NAAQS (VOL-1)	8	BLQ
9. Nickel as Ni	ng / m ³	NAAQS (VOL-1)	20	BLQ
10. Lead (Pb)	µg / m ³	IS 5182 (Part-22)	1	BLQ
Residues Analysis				
11. Benzene (C ₆ H ₆)	µg / m ³	IS 5182 (Part-11)	5	0.26
12. Benzo(a) Pyrene	ng / m ³	IS 5182 (Part-12)	1	0.25

BLQ= Below Limit of Quantification

Vishal Sharma

Reviewed by:
Vishal Sharma (DGM)



Chitraranjan Das

Authorized Signatory:
Chitraranjan Das, Sec. I/c (Food, Residue & Water Proximate)

Abhishek Kumar

Authorized Signatory :
Abhishek Kumar, Sec. I/c (Air Proximate)

Sagar Gokhe

Authorized Signatory :
Sagar Gokhe, Sec. I/c (Metals)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

----- END OF REPORT -----

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Annexure-VII

OMSHIVA TEST HOUSE PVT LTD



STH/24/09/617

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : AAQ (As per NAAQS)
Location of Sampling : Near Bariyahi Village
W.O No.: 4000283588-057-1019
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number : STH/TR/24-25/09/617
Date of Sampling : 23.09.2024
Sample Received on : 25.09.2024
Method of Sampling : IS 5182 (Part - 14 & 5)
Env. Condition : Temp. 38^oC Humidity 72%
Instrument ID : STH/Equip/54, 115
Sample Quantity & Container : 30 ml x 6 for each (NO_x, SO₂); Filter Paper & Sample Carriage Bottle
Sample Collected by : Mr. Chitraranjan Kumar; Lab Representative

Analysis Details :

Sample Code : STH/24/09/617
Analysis Start Date : 25.09.2024
Analysis Completion Date : 29.09.2024
Sample Condition on Receipt : Fit for analysis
Items required to be Tested : As per contract
Any Specific Test Method : No
Reporting Date : 29.09.2024
Report Prepared By : S.K. Singh

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Limit as per NAAQS 2009	Sampling Station / Result
				Near Bariyahi Village
Chemical Analysis				
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100	67.1
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60	36.3
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80	12.2
4. Nitrogen Dioxide as NO ₂	µg / m ³	IS 5182 (Part-6)	80	35.3
5. Ozone (O ₃)	µg / m ³	IS 5182 (Part-9)	160	40.25
6. Ammonia as NH ₃	µg / m ³	IS 5182 (Part-25)	400	15.7
7. Carbon Monoxide (CO)	mg / m ³	IS 5182 (Part-10)	4	0.43
Metal Analysis				
8. Arsenic (As)	ng / m ³	NAAQS (VOL-1)	6	BLO
9. Nickel as Ni	ng / m ³	NAAQS (VOL-1)	20	BLO
10. Lead (Pb)	µg / m ³	IS 5182 (Part-22)	1	BLO
Residues Analysis				
11. Benzene (C ₆ H ₆)	µg / m ³	IS 5182 (Part-11)	5	0.21
12. Benzo(a) Pyrene	ng / m ³	IS 5182 (Part-12)	1	0.23

BLQ= Below Limit of Quantification

Vishal Sharma

Reviewed by:
Vishal Sharma (DQM)



Chitraranjan Das

Authorized Signatory:
Chitraranjan Das, Sec. In (Food, Residue & Water Proximate)

Abhishek Kumar

Authorized Signatory :
Abhishek Kumar, Sec. In (Air Proximate)

Sagar Gokha

Authorized Signatory :
Sagar Gokha, Sec. In (Metals)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

--- END OF REPORT ---

N.B.: (1) This report applies only to sample tested as above. (2) Total Liability of our Laboratory is limited to invoiced amount. (3) Test Report endorsed only the tests and not the product certificate. (4) Test Report cannot be reproduced partially or full for legal/court purpose without written permission of the Laboratory.





OMSHIVA TEST HOUSE PRIVATE LIMITED

..... PROTECTING SINCE 1988

TESTING | CONSULTING | RESOLVING | TRAINING

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Annexure-VII



TC-14281

OMSHIVA TEST HOUSE PVT LT



STH/24/09/618

TEST REPORT

Name and Address of Customer :

NTPC LIMITED
ADD: BARAUNI THERMAL POWER PLANT PROJECT
NH 31, BARAUNI
BEGUSARAI - 851 116

Information by Customer :

Name / Nature of Sample : AAQ (As per NAAQS)
Location of Sampling : Near CW Pump House Stage 2
W.O No.: 4000283588-057-1018
WO Date: 20.07.2022

Laboratory Provided Details :

ULR Number : STH/TR/24-25/09/618
Date of Sampling : 23.09.2024
Sample Received on : 25.09.2024
Method of Sampling : IS 5182 (Part - 14 & 5)
Env. Condition : Temp. 38^oC Humidity 72%
Instrument ID : STH/Equip/55, 116
Sample Quantity & Container : 30 ml x 6 for each (NO₂, SO₂); Filter Paper & Sample Carriage Bottle
Sample Collected by : Mr. Chitraranjan Kumar; Lab Representative

Analysis Details :

Sample Code : STH/24/09/618
Analysis Start Date : 25.09.2024
Analysis Completion Date : 29.09.2024
Sample Condition on Receipt : Fit for analysis
Items required to be Tested : As per contract
Any Specific Test Method : No
Reporting Date : 29.09.2024
Report Prepared By : S.K. Singh

ANALYSIS RESULTS

Parameters	Unit	Method of Test	Limit as per NAAQS 2009	Sampling Station / Result
				Near CW Pump House Stage 2
Chemical Analysis				
1. Particulate Matter (PM ₁₀)	µg / m ³	IS 5182 (Part-23)	100	63.2
2. Particulate Matter (PM _{2.5})	µg / m ³	IS 5182 (Part-24)	60	33.3
3. Sulphur Dioxide as SO ₂	µg / m ³	IS 5182 (Part-2)	80	9.3
4. Nitrogen Dioxide as NO ₂	µg / m ³	IS 5182 (Part-6)	80	29.8
5. Ozone (O ₃)	µg / m ³	IS 5182 (Part-9)	180	38.2
6. Ammonia as NH ₃	µg / m ³	IS 5182 (Part-25)	400	14.76
7. Carbon Monoxide (CO)	mg / m ³	IS 5182 (Part-10)	4	0.39
Metal Analysis				
8. Arsenic (As)	ng / m ³	NAAQS (VOL-1)	6	BLQ
9. Nickel as Ni	ng / m ³	NAAQS (VOL-1)	20	BLQ
10. Lead (Pb)	µg / m ³	IS 5182 (Part-22)	1	BLQ
Residues Analysis				
11. Benzene (C ₆ H ₆)	µg / m ³	IS 5182 (Part-11)	5	0.19
12. Benzo(a) Pyrene	ng / m ³	IS 5182 (Part-12)	1	0.21

BLQ= Below Limit of Quantification

Vishal Sharma

Reviewed by:
Vishal Sharma (DGM)



Chitraranjan Das

Authorized Signatory:
Chitraranjan Das, Sec. I/c (Food, Residue & Water Proximate)

Abhishek Kumar

Authorized Signatory :
Abhishek Kumar, Sec. I/c (Air Proximate)

Sagar Gokhe

Authorized Signatory :
Sagar Gokhe, Sec. I/c (Metals)

Shreyasee Prasad

Quality Manager :
Dr. (Mrs.) Shreyasee Prasad

----- END OF REPORT -----

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