एनटीपीसी NTPC
A Maharatna Company

एन टी पी सी लिमिटेड
(भारत सरकार का उद्यम)
NTPC Limited
(A Govt. of India Enterprise)

रिहन्द / RIHAND

संदर्भ संख्या / Ref. no.: 070/EMG/AU/2026/3702 दिनांक / Date: 30.05.2026

To,
Additional Director
Ministry of Environment, Forest & Climate Change
Integrated Regional Office
Kendriya Bhawan, 11th Floor, Sector-H, Aliganj,
Lucknow – 226 024.

Ref. No.: 17/13/21-Env. Dt.20.04.82, J-13011/30/87-IA-III dt. 12.05.92 & J-13011/30/87-IA-II(T) dt. 22.02.99, Environmental Clearance of Rihand STPP Stage I&II, 2X(2X500) MW.

Project Code: UP-08-60-1992

Sub:- Status report regarding compliance of conditions stipulated in environmental clearance of NTPC – Rihand Stage – I & II.

Dear Sir / Madam,

With reference to the Environmental Clearance granted by MoEF & CC for NTPC Rihand vide letter references mentioned as above please find enclosed herewith the status of compliance of conditions stipulated in the environmental clearances for the period of **October'2025 to March'2026.**

Thanking You,

Yours sincerely

(Rajeev Kr. Mittal)
AGM (EMG/AU)

रिहन्द सुपर थर्मल पावर प्रोजेक्ट, पोओ - रिहंदनगर, जिला – सोनभद्र (उ.प्र.), पिन – 231 223, टेली / Tel: 05446-242021
Rihand Super Thermal Power Project, PO: Rihand Nagar, Dist: Sonebhadra (UP), Pin: 231 223, Fax: 05446-242115
पंजीकृत कार्यालय एनटीपीसी भवन, स्कोप कॉम्पलेक्स, 07 इन्स्टीट्यूशनल एरीया, लोधी रोड, नई दिल्ली - 110 003
Regd Office: NTPC Bhawan, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi – 110 003

NTPC - RIHAND

MONITORING REPORT FROM : October 2025 – March 2026

PART - I

DATA SHEET

STAGE-I

1. Project Type: River valley/Mining/Industry/ Thermal/Nuclear/Other (specify)	Thermal
2. Name of the project Project Code	**Rihand Super Thermal Power Project.** **UP-8-60-1992**
3. Clearance letters/OM No. & date	17/13/21-Env. Dt.20.04.82
4. Locations: (a) District(s) (b) State(s) (c) Latitudes/Longitudes	Sonebhadra Uttar Pradesh
5. Address for correspondence: (a) Address of concerned project Chief Engineer (with pin code & telephone/ telex/ fax numbers). (B) Address of Executive Project engineer/Manager (with pin code & telephone/ telex/fax nos.)	Head of Project NTPC - Rihand, Rihandnagar, Sonebhadra (UP) Pin: 231223. Ph:05446-242001. Fax: 05446-242115 & 242010. Head of Project NTPC - Rihand, Rihandnagar, Sonebhadra (UP) Pin: 231223. Ph:05446-242001. Fax: 05446-242115 & 242010
6. Salient features: (a) of the project (b) of environmental management plan	(a).2 x 500 MW (b).ESP, Stack, DE/DS system, On-line monitoring equipment, Effluent Treatment Plant, STP, etc.
7. Break up of project area: (a) Submergence area (Forest & Non-forest) (b) Others	For all stages: 5465 Acres (total land area)
8. Break up project affected population with enumeration of those losing houses/dwelling unit only, agricultural	Details submitted through R&R Cell.

lands only, both dwelling units and agricultural landless labourers/artisans. (A) SC,ST/Adivasis (b) Other (c) Number of villages affected (d) Name & other particulars of identified area for settlement (e) Compensation package (f) Budget (g) Status	
9. Financial Details: (a) Project cost as originally planned & subsequent revised estimates and the years of price reference ---------- (b) Allocations made for environmental management plans with item-wise and year-wise break up. (c) Benefit cost ratio/internal rate of return and the year of assessment (d) Whether (c) includes the cost of environmental management as shown in (b) above (e) Actual expenditure incurred on the project---------- (f) Actual expenditure incurred on environment Management plan (EAP)	Total gross block (without depreciation) as on 31.03.2025: 3640.65 Crores - - Total gross block (without depreciation) as on 31.03.2025: 3640.65 Crores 164.25 Crores under EAP for FY 2025 - 26 (entire station).
10. Forest land requirement: (a) The status of approval for a diversion of forest land for non-forest use (b) The status of compensatory Afforestation, if any (c) The status of clear felling (d) Comments on the viability & sustainability of compensatory afforestation programme in the light of actual field experience so far	Land for the plant of stages is acquired. Approval accorded. --. -- --
11. The status of clear felling in non-forest area	Plant is already in operation.
12. Status of construction: (a) Date of commencement (actual and/of planned) (b) Date of completion (actual and/or planned)	 Feb.1983 Jan.1991
13. Reasons for the delay if the project is yet to start	N.A.
14. Compliance of stipulated environmental norms	Being complied

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NTPC - RIHAND

MONITORING REPORT FROM : April 2025 – September 2025

PART-I

DATA SHEET **STAGE-II**

1. Project Type: River valley/Mining/Industry/ Thermal/Nuclear/Other (specify)	Thermal
2. Name of the project Project Code	**Rihand Super Thermal Power Project.** **UP-8-60-1992**
3. Clearance letters/OM No. & date and Revalidation of Env. Clearance letter No. & date	J-13011/30/87-IA-III dt.12.05.92& J-13011/30/87-IA-II(T) dt.22.2.99
4. Locations: (a) District(s) (b) State(s) (c) Latitudes/Longitudes	Sonebhadra Uttar Pradesh
5. Address for correspondence: (a) Address of concerned project Chief Engineer (with pin code & telephone/ telex/ fax numbers). (B) Address of Executive Project engineer/Manager (with pin code & telephone/ telex/fax nos.)	Head of Project NTPC - Rihand, Rihandnagar, Sonebhadra (UP) Pin: 231223. Ph:05446-242001. Fax: 05446-242115 & 242010. Head of Project NTPC - Rihand, Rihandnagar, Sonebhadra (UP) Pin: 231223. Ph:05446-242001. Fax: 05446-242115 & 242010
6. Salient features: (a) of the project (b) of environmental management plan	Project activities for Stage-II completed.
7. Break up of project area: (a) Submergence area (Forest & Non-forest) (b) Others	For all stages: 5465 Acres (total land area)
8. Break up project affected population with enumeration of that losing houses/dwelling unit only, agricultural land	Details submitted through R&R.

only, both dwelling units and agricultural land less labourers/artisans. (A) SC,ST/Adivasis (b) Other (c) Number of villages affected (d) Name & other particulars of identified area for settlement (e) Compensation package (f) Budget (g) Status	
9. Financial Details: (a) Project cost as originally planned & subsequent revised estimates and the years of price reference. (b) Allocations made for Env. Management plans, with item-wise and year-wise break up. (c) Benefit cost ratio/internal rate of return and the year of assessment (d) Whether © includes the cost of environmental management as shown in (b) above (e) Actual expenditure incurred on the project (f) Actual expenditure incurred on env. Management plan.	As per approval Rs. 3451.97 Crores as per Govt. Approval Rs. 3084.01 Crores 164.25 Crores under EAP for FY 2025-26 (entire station).
10. Forest land requirement: (a) The status of approval for a diversion of forest land for non-forest use (b) The status of compensatory afforestation, if any (c) The status of clear felling (d) Comments on the viability & sustainability of compensatory afforestation programme in the light of actual field experience so far	Land for the plant of stages is acquired. Approval accorded. --. -- --
11. The status of clear felling in non-forest area	Plant is already in operation.
12. Status of construction: (a) Date of commencement (actual and/of planned) (b) Date of completion (actual and/or planned)	Project activities of stage-II are completed. August 2001. 31.03.2006
13. Reasons for the delay if the project is yet to start	-
14. Compliance of stipulated environmental norms	Being complied.

NTPC - RIHAND

Implementation Status Of Conditions Stipulated In Environmental Clearance:

Ref.No. **17/13/21-Env. Dt.20.04.82, J-13011/30/87-IA-III dt.12.5.92 & J-13011/30/87-IA-II(T) dt. 22.02.99**

Environmental Clearance of Rihand STPP Stage I&II, 2X(2x500) MW.

Period: October'2025 – March'2026

Sl. No.	STIPULATIONS	STATUS OF IMPLEMENTATION
1.	A single stack having bi-flues of height not less than 275 meters should be provided for both units.	**Stage-I**: A single stack having bi-flues of 225 m height have been provided as per CPCB recommendation of stack height relaxation. **Stage-II**: A single stack having bi-flues of 275 m is provided.
2.	Electrostatic precipitators with operational efficiency of not less than 99.5% should be provided. The particulate emissions from stack should not exceed the prescribed standard of 150 mg/Nm3 and in the event of the emission exceeding the prescribed limit the plant will have to be shut down.	**Stage-I**: Electrostatic precipitator with operational efficiency of >99.9% have been provided. **Stage-II**: ESP with operational efficiency of >99.9% has been provided. Stack emission from Stage – I & Stage – II Units is below the prescribed limits. Stack monitoring report is enclosed as Annexure – 01.
3.	Provision for dry ash collection of fly ash must be made. A plan for full utilisation of fly ash should be prepared as given below and submitted to this ministry within three months: - 20% of fly ash should be put into use within one year of commissioning. - Thereafter 10% progressively for next 8 years and 100% within 9 years.	**Stage-I**: Work in progress for installation of Dry ash extraction system (DAES) and ash silos in Stage – I. It is expected to be completed by 31.10.2026. **Stage-II**: Dry ash extraction system (DAES) and ash silos are available in Stage – II. NTPC Rihand is making best possible efforts for maximum utilization of fly ash and only unused fly ash is being disposed off in the ash pond through wet slurry mode. Ash generated at NTPC Rihand is utilized in the following areas: a) Providing pond ash to NHAI and other road construction projects. b) Filling of low lying areas at NTPC Rihand premises.

<table>
<tr><td></td><td></td><td>c) Issue of fly ash to cement industries through rail (BTAP wagons)

d) Issue of fly ash to asbestos industries.

d) Manufacturing of ash bricks.

Fly ash utilization report during Oct'25 – Mar'26 is enclosed as Annexure – 02.

<table><tr><th></th><th>Oct'25 – Mar'26</th></tr><tr><td>Ash Gen. (MT)</td><td>2032655 MT</td></tr><tr><td>Ash Util. (MT)</td><td>909330 MT</td></tr><tr><td>Ash Util.%</td><td>44.74%</td></tr></table></td></tr>
<tr><td>4.</td><td>The requirement of land for ash disposal should be based on ash utilisation plan. The ash pond should be lined to avoid any ground water contamination. Recycling and reuse of ash pond effluent and other effluents from power station should be done so as to ensure `Zero discharge'. No discharge of liquid effluents in the Rihand reservoir will be permitted.</td><td><u>Stage-I&II</u>: A Geo-hydrological study of ash pond area has been carried out through University of Roorkee which does not recommended lining of ash pond. The recommendation in this regard is reproduced as "Keeping in view the overall scenario and the future of Rihand ash pond, as has also been indicated by ground water modelling, it is felt that there is no need for the lining of proposed ash ponds for Rihand STPP either by soil or synthetic materials."

As specified in Point No.2 of Revalidated Environmental Clearance, Ash Pond area need not be lined keeping in view of the soil profile. However, periodic monitoring of ground water around the existing ash pond and analysis of soil is being monitored through CSIR – IITR. Copies of the monitoring reports of Groundwater quality & Soil analysis are enclosed as Annexure – 03 & 04 respectively.

ZLD is being ensured. No effluent is being discharged in Rihand Reservoir.</td></tr>
<tr><td>5.</td><td>Space provision for installation of FGD plant should be provided, so that the same could be installed, if considered necessary on the basis of one-year ambient air quality data feed back after operation of the plant.</td><td><u>Stage-I & II</u>: Provision for FGD is made in General layout Plan. The work of installation of FGD is in progress to meet the new norms of SO2 emission from stack. Status of installation of FGD is enclosed as Annexure – 05.

It is also submitted that as per MoEF&CC Gazette Notification G.S.R. 465 (E) dated 11.07.2025 the Category 'C' power plants are exempted from compliance of SO2 emission norms.</td></tr>
<tr><td>6.</td><td>Affected families should be properly rehabilitated in consultation with the State Govt.</td><td><u>Stage-I</u>: For persons affected, R&R Plan prepared in consultation with State Govt. and has been implemented.

<u>Stage-II</u>: Total No. of PAPs displaced = 184</td></tr>
</table>

		No. of PAPs migrated/absentee/deceased = 03 No. of PAPs entitled for rehabilitation = 181 **STATUS**: The rehabilitation of all the families has been done. No displaced families are left for rehabilitation as on date.
7.	NTPC should prepare a plan for the green belt and submit for approval within a period of 3 months.	**Stage-I&II**: The details of green belt development had been submitted to MoEF. Both Stage-I and II are located within the same premises. Mass scale plantation and green belt development has already been undertaken in Stage-I, II, III, in township and in nearby areas on Govt. Land. Approx. 24 Lac trees have been planted till date in and around plant premises. NTPC Rihand has also entered into a MoU of 10 years with U.P. Forest Department for 38000 nos. of tree plantation every year on forest land. 49000 nos. of trees have been planted in the year 2025-26. Report on green belt development is enclosed as Annexure – 06.
8.	A baseline health survey especially for pulmonary functions should be done in the region, and this should be followed by periodic tests after the commissioning of the power station in order to monitor the impact, if any, on the health of the local inhabitants.	**Stage-I&II**: Medical check-up of employees and contract workers is being done. A baseline health survey especially for pulmonary functions has been taken in the region. Report has been submitted to MoEF. Health checkup details during the period of Oct'25 – March'26 is enclosed as Annexure – 07.
9.	At least six air quality monitoring stations should be set up in consultation with the State Pollution Control board for estimation of SO2, NOx & SPM. The exact location of monitoring stations should be decided in consultation with State Pollution Control Board as also based on meteorological conditions, human settlements, vegetation etc. Stack emission should be monitored for SO2 & SPM measurements. The data on stack emission and ambient air quality should be submitted to SPCB once in three months and to this ministry once in six months along with the statistical analysis.	**Stage-I&II**: Stack emission monitoring report and ambient air quality monitoring report is being submitted to UPPCB on monthly basis. Stack emission monitoring for Particulate Matter, NOx & SO2 is being carried out. Half yearly Monitoring reports of stack emission and ambient air quality for the period Oct'25 to March'26 are enclosed as Annexure – 01 & Annexure – 08 respectively.
10.	Air and Water quality standards as prescribed under the Environment (Protection) Act, 1986, the Air (Prevention and Control of Pollution) Act, 1981 and the	**Stage-I & II**: Air and Water quality standards is being complied as per stipulations.

	Water (Prevention and Control of Protection) Act, 1974 should be complied with including the revised standards that may be prescribed in future.	
11.	Hot water coming out of condensers should be adequately cooled so that, its temperature at the point of confluence in the main water bodies do not exceed the standard of 5'C over and above the ambient temperature of the receiving water.	**Stage-I**: Rihand stage-I operates with once through cooling system. As per Gazette Notification G.S.R.-7 of GOI dtd. 22.12.1998, for existing TPPs the rise in temperature of condenser cooling water from inlet to outlet shall not be more than 10°C. Presently, temperature rise across condenser is less than 10°C and is in conformity with the stipulations. **Stage-II**: Closed cycle cooling system with cooling towers has been provided.
12.	The conditions stipulated may be varied or new conditions may be added or the clearance revoked, if necessary, in the interest of env. Protection, and if there is any change in the project profile, non-satisfactory implementation of the stipulated conditions etc.	Noted
13.	The stipulation will be implemented, among other, 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 the Public Liability Insurance Act, 1991.	**Stage-I & II**: All the stipulations are being implemented.
14.	Necessary funds should be provided in the project for implementation of the above-mentioned conditions and environmental safeguards. The funds earmarked for the environmental protection measures should not be diverted for other purposes and year wise expenditure should be reported to this ministry.	**Stage-II**: Necessary funds is allocated for environmental protection and the same is utilized for environmental safeguards. Expenditure of approx. 164.25 Crores has been made under Environmental Action Plan in the year 2025 - 26 for the entire station.
15.	NTPC would, subject to techno-economic feasibility and environmental suitability for backfilling of mine(s) with fly ash being established in the study being conducted by Coal India Ltd., take up at least one mine in Singrauli area for backfilling in ash, in consultation with CIL within three months of receipt of study report.	NTPC Rihand has requested NCL authorities for allocation of mines for mixing of pond ash in external OB dumps as well as for back filling of abandoned coal mines in compliance of Fly Ash Notification of MoEF & CC dated 31.12.2021. In this regard letters dated 02.02.2022, 31.05.2022, 22.06.2022, 13.12.2022, 31.12.2022, 09.02.2023, 16.02.2023, 08.05.23, 14.09.2023, 11.12.2023, 14.04.2024, 03.08.2024, 09.10.2024, 08.04.2025 & 08.12.2025 have been given to NCL authorities for allocation of mines in Uttar Pradesh for

		utilization of pond ash of NTPC Rihand. Copy of the letter dated 08.12.2025 is enclosed as Annexure – 09. It is also submitted that Hon'ble NGT has constituted a Fly Ash Mission comprising of members from MoEF, Ministry of Coal, Ministry of Power, CEA, CPCB for allocation of abandoned mines to Thermal Power Plants for its back filling with pond ash of the power plants. NTPC has submitted its application to fly ash mission for allocation of abandoned mines for ash utilization purpose.
16.	Ash pond area need not be lined keeping in view of the soil profile. However, periodic monitoring of ground water in tube wells around the existing ash pond and geo-chemical analysis of soil and ground water should be undertaken to monitor changes in the chemical characteristics.	The ground water quality and soil quality around existing ash pond area is being monitored on regular basis through CSIR - IITR. Ground water analysis reports and soil analysis reports are enclosed as Annexure – 03 & Annexure – 04 respectively.
17.	For maintaining the water quality of the Rihand Reservoir, NTPC should ensure that effluent discharge into the Reservoir is strictly in conformity with the applicable standards.	The decanted ash water of ash dyke is fully recycled and reused for further ash slurry preparation, ZLD is being ensured. The quality of the ash pond effluent is within the stipulated limits. Report of treated effluent quality is enclosed as Annexure – 10. No effluent is being discharged in Rihand Reservoir. Effluent Treatment Plants and Sewage Treatment Plants are in service for treatment of effluent of the station. No effluent is being discharged in Rihand Reservoir.
18.	NTPC should get NOC from UPPCB in favour of Rihand Power Project instead of Singrauli Unit-II.	Air and water consent to operate is being issued by UPPCB is in the name of NTPC, Rihand.
19.	As stipulated in condition no. viii of the clearance letter of 12th May, 1992, baseline health survey should be immediately undertaken.	Base line health survey has been completed and report submitted to MoEF. Medical check-up of employees are being done on regular basis. Health Check up details for the period of Oct'25 – March'26 is enclosed as Annexure – 07.

Note: Conditions from point Nos.15 to 19 as per Revalidated Environment clearance vide MoEF letter No: J-13011/30/87-IA-II (T) dtd. Feb. 22nd, 1999.

Annexure - 01

Ref. IITR/SSP-532/December-2025

Date. 07/01 2026

10.10 - ANALYTICAL TEST REPORT FOR STACK EMISSION MONITORING

Sampling Season : Winter Season
Date of sampling : December 10 to 12, 2025
Date of Samples Received in Lab : December 14, 2025
Date of Analytical Analysis Completion : January 03, 2026

Sl. No	Particulars		Unit-I	Unit-II	Unit-III	Unit-IV	Unit-V	Unit-VI
1	Date of Sampling		10/12/2025	10/12/2025	11/12/2025	11/12/2025	12/12/2025	12/12/2025
2	Stack Attached to		ESP Outlet	ESP Outlet	ESP Outlet	ESP Outlet	ESP Outlet	ESP Outlet
3	Stack Height from Ground (m)		225	225	275	275	275	275
4	Type of Stack		Multi Flue	Multi Flue	Multi Flue	Multi Flue	Multi Flue	Multi Flue
5	Type of Duct		Circular	Circular	Circular	Circular	Circular	Circular
6	Material of Construction of Duct		Mild Steel	Mild Steel	Mild Steel	Mild Steel	Mild Steel	Mild Steel
7	Height of Sampling Port from the Ground (m)		110	110	88	88	88	88
8	Diameter of Duct (m)		7	7	6.75	6.75	6.75	6.75
9	Duct Area (m^2)		38.48	38.48	35.76	35.76	35.76	35.76
10	Diameter of Sampling Port (mm)		150	150	150	150	150	150
11	Type of Fuel Used		Coal	Coal	Coal	Shut Down	Coal	Coal
12	Atmospheric Pressure (mm of Hg)		745	745	745		745	745
13	Sampling Period (min)		24	25	24		26	24
14	Ambient Temperature (K)		297	297	296		296	297
15	Stack Gas Temperature (K)		414	418	492		496	495
16	Total Coal Flow (MT/hr)		315	310	342		352	348
17	Unit Load (MW)		502	498	485		498	492
18	Flue Gas Exit Velocity (m/sec)		26.2	25.8	25.5		26.0	25.5
19	Concentration of Pollutants	PM (mg/Nm^3)	84	80	47		46	48
		SO_2 (mg/Nm^3)	1075	1048	1026		1124	1068
		NO_x(mg/Nm^3)	538	502	376		384	355
		Hg(mg/Nm^3)	0.0033	0.0032	0.0036		0.0038	0.0042
		Ni($\mu g/Nm^3$)	1.37	1.48	0.96		1.24	1.05
		As($\mu g/Nm^3$)	ND	ND	ND		ND	ND
		Pb($\mu g/Nm^3$)	1.58	1.62	1.98		1.44	1.28

- *Data for Sl. No. 2 to 11 are based on information provided by the M/s NTPC Rihand.*
- *Method of Measurement: stack emissions were measured and tested as per the method(s) prescribed in PO No.: 4000370822-037-1035, date: 29.10.2025.*
- *Unit – IV was not working at the time of monitoring by CSIR-IITR team.*

Limits as provided by NTPC Rihand						
	Unit-I	Unit-II	Unit-III	Unit-IV	Unit-V	Unit-VI
PM (mg/Nm^3)	*100*	*100*	*50*	*50*	*50*	*50*
SO_2 (mg/Nm^3)	*Not applicable as per MoEFCC notification dated 11.07.2025*					
NO_x(mg/Nm^3)	*600*	*600*	*450*	*450*	*450*	*450*
Hg (mg/Nm^3)	*0.03*	*0.03*	*0.03*	*0.03*	*0.03*	*0.03*

T. S. Sreekanth
07/01/2026
Dr. B. Sreekanth
Project Investigator

Ref. IITR/SSP-532/March-2026
Date 14.04.2026

10.10 - ANALYTICAL TEST REPORT FOR STACK EMISSION MONITORING

Sampling Season	:	Summer Season
Date of sampling	:	March 16 to 18, 2026
Date of samples received in lab	:	March 24, 2026
Date of Analytical Analysis Completion	:	April 09, 2026

Sl. No	Particulars		Unit-I	Unit-II	Unit-III	Unit-IV	Unit-V	Unit-VI
1	Date of Sampling		16-03-2026	16-03-2026	17-03-2026	17-03-2026	18-03-2026	18-03-2026
2	Stack Attached to		ESP Outlet	ESP Outlet	ESP Outlet	ESP Outlet	ESP Outlet	ESP Outlet
3	Stack Height from Ground (m)		225	225	275	275	275	275
4	Type of Stack		Multi Flue	Multi Flue	Multi Flue	Multi Flue	Multi Flue	Multi Flue
5	Type of Duct		Circular	Circular	Circular	Circular	Circular	Circular
6	Material of Construction of Duct		Mild Steel	Mild Steel	Mild Steel	Mild Steel	Mild Steel	Mild Steel
7	Height of Sampling Port from the Ground (m)		110	110	88	88	88	88
8	Diameter of Duct (m)		7	7	6.75	6.75	6.75	6.75
9	Duct Area (m^2)		38.48	38.48	35.76	35.76	35.76	35.76
10	Diameter of Sampling Port (mm)		150	150	150	150	150	150
11	Type of Fuel Used		Coal	Coal	Coal		Coal	Coal
12	Atmospheric Pressure (mm of Hg)		745	745	745		745	745
13	Sampling Period (min)		30	29	28	28	26	28
14	Ambient Temperature (K)		302	302	303	303	302	302
15	Stack Gas Temperature (K)		418	422	445	438	435	438
16	Total Coal Flow (MT/hr)		325	321	342	340	350	344
17	Unit Load (MW)		495	492	498	496	494	492
18	Flue Gas Exit Velocity (m/sec)		26.1	25.4	25.5	26.4	26.1	25.8
19	Concentration of Pollutants	PM (mg/Nm^3)	88	85	48	42	42	44
		SO_2 (mg/Nm^3)	1064	1028	998	1039	1110	1020
		NO_x(mg/Nm^3)	543	520	398	386	376	352
		Hg(mg/Nm^3)	0.0037	0.0039	0.0034	0.0036	0.0031	0.0038
		Ni($\mu g/Nm^3$)	1.31	1.46	0.99	1.08	1.26	1.17
		As($\mu g/Nm^3$)	ND	ND	ND	ND	ND	ND
		Pb($\mu g/Nm^3$)	1.56	1.64	2.01	2.09	1.41	1.26

- *Data for Sl. No. 2 to 11 are based on information provided by the M/s NTPC Rihand.*
- *Method of Measurement: stack emissions were measured and tested as per the method(s) prescribed in PO No.: 4000370822-037-1035, date: 29.10.2025.*

Limits as provided by NTPC Rihand						
	Unit-I	Unit-II	Unit-III	Unit-IV	Unit-V	Unit-VI
PM (mg/Nm^3)	*100*	*100*	*50*	*50*	*50*	*50*
SO_2 (mg/Nm^3)	*Not applicable as per MoEFCC notification dated 11.07.2025*					
NO_x(mg/Nm^3)	*600*	*600*	*450*	*450*	*450*	*450*
Hg (mg/Nm^3)	*0.03*	*0.03*	*0.03*	*0.03*	*0.03*	*0.03*

Dr. B. Sreekanth
Project Investigator

Annexure - 02

Fly Ash Utilization from October'2025 to March'2026

	Particulars	From ESP Dry Ash	From Pond Ash	From Bottom Ash	Total
1	Ash pond dyke raising	-	-	-	-
2	Cement industry	131580	-	-	131580
3	Land fill / Reclamation of low lying area	294803	--	-	294803
4	Own Brick Unit	3337	-	-	3337
5	Outside Brick units other than brick kilns	93505	-	-	93505
6	Brick Kilns	-	-	-	-
7	Own ash based products (other than bricks)	-	-	-	-
8	Outside ash based products	-	-	-	-
9	Road and Flyover Embankments	--	188642	-	188642
10	Back filling of mines and Mixing Ash with OB	-	-	-	-
11	Agriculture	-	-	-	-
12	Ready mix concrete	-	-	-	-
13	Asbestos	14495	-	-	14495
14	Exports	-	-	-	-
15	Others	-	-	-	-
	(i) Bottom Ash as substitute of sand	-	-	182967	182967
	(ii) Cenosphere	-	-	-	-
	(iii)Agriculture	-	-	-	-
	(iv) Geopolymer road	-	-	-	-
	Total	**537720**	**188642**	**182967**	**909329**

Total Ash Generated (Oct'25 – Mar'26)	2032655 MT
Total Ash Utilized (Oct'25 – Mar'26)	909329 MT
Ash Utilization % (Oct'25 – Mar'26)	44.74%

Annexure - 03

Ref. IITR/SSP-532/December-2025

Date: 27.01.2026

10.70 - ANALYTICAL TEST RESULTS FOR GROUND - WATER QUALITY MONITORING

Sampling Season : Winter Season
Date of sampling : December 13, 2025
Date of samples received in lab : December 14, 2025
Date of Analytical Analysis Completion : January 03, 2026

S.No.	Parameter	Unit	Punarwas -1	Punarwas -2	Ircon Colony	Central Ash Dyke	Sirsoti Village	Acceptable Limit*
Physico-Chemical Parameters:								
1	pH	-	7.50	7.40	7.35	7.35	7.25	6.5-8.5
2	Colour	Hazen	1	1	1	2	1	5
3	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Total Dissolved Solids	mg/L	352	248	345	367	248	500
5	Total Alkalinity as $CaCO_3$	mg/L	115	98	118	126	102	200
6	Total Hardness as $CaCO_3$	mg/L	172	155	188	196	166	200
7	Nitrate as NO_3	mg/l	57	30	34	35	27	45.0
8	Turbidity	NTU	Nil	Nil	Nil	Nil	Nil	1.0
9	Fluoride (as F)	mg/L	0.56	0.58	0.62	0.68	0.65	1.0
10	Free Residual Chlorine	mg/L	ND	ND	ND	ND	ND	0.2
11	Anionic Detergents	mg/L	ND	ND	ND	ND	ND	0.2
12	Sulphide (as H_2S)	mg/L	ND	ND	ND	ND	ND	0.05
13	Phenolic Compound (as C_6H_5OH)	mg/L	ND	ND	ND	ND	ND	0.001
14	Coliforms (MPN)	MPN / 100 ml	Absent	Absent	Absent	Absent	Absent	Absent
15	Ammonia (As total Ammonia – (NH_3)	mg/l	ND	ND	ND	ND	ND	0.5
16	Chloride	mg/l	36.8	39.5	41.2	47.8	35.2	250
17	Sulphate as SO_4	mg/l	26.50	20.24	27.2	28.25	28.8	200
	Analysis of Metals / Heavy Metals:							
18	Aluminum as Al	mg/l	ND	ND	ND	ND	ND	0.03
19	Cadmium (as Cd)	mg/l	ND	ND	ND	ND	ND	0.003
20	Tot. chromium (as Cr)	mg/l	ND	ND	ND	ND	ND	0.05
21	Copper (as Cu)	mg/l	ND	ND	ND	ND	ND	0.05
22	Lead (as Pb)	mg/l	ND	ND	ND	ND	ND	0.01
23	Iron (as Fe)	mg/l	0.18	0.11	0.13	0.16	BDL	0.3
24	Zinc (as Zn)	mg/l	0.72	0.60	0.74	1.0	0.82	5.0
25	Nickel (as Ni)	mg/l	ND	ND	ND	ND	ND	0.02
26	Barium (as Ba)	mg/l	ND	ND	ND	ND	ND	0.7
27	Boron (as B)	mg/l	ND	ND	ND	ND	ND	0.5
28	Calcium (as Ca)	mg/l	18.84	20.12	22.40	24.62	18.48	75.0
29	Manganese (as Mn)	mg/l	ND	ND	ND	ND	ND	0.1

Continued.....

30	Molybdenum (as Mo)	mg/l	ND	ND	ND	ND	ND	0.07
31	Cyanide (CN)	mg/l	ND	ND	ND	ND	ND	0.05
32	Selenium (as Se)	mg/l	ND	ND	ND	ND	ND	0.01
33	Arsenic (as As)	mg/l	ND	ND	ND	ND	ND	0.01
34	Mercury (as Hg)	mg/l	ND	ND	ND	ND	ND	0.001
35	Magnesium (Mg)	mg/l	10.60	9.85	12.20	15.80	10.70	30

Note: - (1) Method of Measurement: Measurement for testing ground water quality monitoring was carried out as per the method(s) prescribed in the enclosure of PO No.: 4000370822-037-1035, dated: 29.10.2025.

(2) ND - Not detected

*(3) *Acceptable limit as per BIS 10500:2012*

B. Sreekanth
07/01/2026

Dr. B. Sreekanth
Project Investigator

Ref. IITR/SSP-532/March-2026
Date. 16/04/2026

10.70 - ANALYTICAL TEST RESULTS FOR GROUND - WATER QUALITY MONITORING

Sampling Season : Summer Season
Date of sampling : March 23, 2026
Date of samples received in lab : March 24, 2026
Date of Analytical Analysis Completion : April 10, 2026

S.No.	Parameter	Unit	Punarwas -1	Punarwas -2	Ircon Colony	Central Ash Dyke	Sirsoti Village	Acceptable Limit*
Physico-Chemical Parameters:								
1	pH	-	7.68	7.72	7.45	7.48	7.35	6.5-8.5
2	Colour	Hazen	1	1	1	2	1	5
3	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Total Dissolved Solids	mg/L	342	258	334	360	270	500
5	Total Alkalinity as $CaCO_3$	mg/L	122	105	120	132	116	200
6	Total Hardness as $CaCO_3$	mg/L	176	164	192	188	176	200
7	Nitrate as NO_3	mg/L	34	32	36	35	31	45.0
8	Turbidity	NTU	Nil	Nil	Nil	Nil	Nil	1.0
9	Fluoride (as F)	mg/L	0.53	0.56	0.64	0.69	0.71	1.0
10	Free Residual Chlorine	mg/L	ND	ND	ND	ND	ND	0.2
11	Anionic Detergents	mg/L	ND	ND	ND	ND	ND	0.2
12	Sulphide (as H_2S)	mg/L	ND	ND	ND	ND	ND	0.05
13	Phenolic Compound (as C_6H_5OH)	mg/L	ND	ND	ND	ND	ND	0.001
14	Coliforms (MPN)	MPN / 100 ml	Absent	Absent	Absent	Absent	Absent	Absent
15	Ammonia (As total Ammonia – (NH_3)	mg/L	ND	ND	ND	ND	ND	0.5
16	Chloride	mg/L	42.8	38.2	43.8	50.2	39.8	250
17	Sulphate as SO_4	mg/L	22.98	26.81	27.91	30.54	28.27	200
	Analysis of Metals / Heavy Metals:							
18	Aluminum as Al	mg/L	ND	ND	ND	ND	ND	0.03
19	Cadmium (as Cd)	mg/L	ND	ND	ND	ND	ND	0.003
20	Tot. chromium (as Cr)	mg/L	ND	ND	ND	ND	ND	0.05
21	Copper (as Cu)	mg/L	ND	ND	ND	ND	ND	0.05
22	Lead (as Pb)	mg/L	ND	ND	ND	ND	ND	0.01
23	Iron (as Fe)	mg/L	0.21	0.14	0.16	0.19	BDL	0.3
24	Zinc (as Zn)	mg/L	0.86	0.71	0.89	1.08	0.98	5.0
25	Nickel (as Ni)	mg/L	ND	ND	ND	ND	ND	0.02
26	Barium (as Ba)	mg/L	ND	ND	ND	ND	ND	0.7
27	Boron (as B)	mg/L	ND	ND	ND	ND	ND	0.5
28	Calcium (as Ca)	mg/L	20.21	23.64	26.31	28.67	19.98	75.0

To be Conti.....

29	Manganese (as Mn)	mg/L	ND	ND	ND	ND	ND	0.1
30	Molybdenum (as Mo)	mg/L	ND	ND	ND	ND	ND	0.07
31	Cyanide (CN)	mg/L	ND	ND	ND	ND	ND	0.05
32	Selenium (as Se)	mg/L	ND	ND	ND	ND	ND	0.01
33	Arsenic (as As)	mg/L	ND	ND	ND	ND	ND	0.01
34	Mercury (as Hg)	mg/L	ND	ND	ND	ND	ND	0.001
35	Magnesium (Mg)	mg/L	12.51	11.92	14.62	18.24	12.40	30

Note: - (1) Method of Measurement: Measurement for testing ground water quality monitoring was carried out as per the method(s) prescribed in the enclosure of PO No.: 4000370822-037-1035, dated: 29.10.2025.
(2) ND- Not detected
*(3) *Acceptable limit as per BIS 10500:2012*

B. Sreekanth 16/04/2026

Dr. B. Sreekanth
Project Investigator

Annexure - 04

Ref. IITR/SSP-532/December-2025

Date: 27/01/2026

10.110 - ANALYTICAL TEST RESULTS FOR SOIL SAMPLES ANALYSIS

Sampling Season	:	Winter Season
Date of sampling	:	December 13, 2025
Date of samples received in lab	:	December 14, 2025
Date of Analytical Analysis Completion	:	January 03, 2026

Sl. No.	Parameter	Unit	MAD-Upstream	MAD-Downstream	CAD-Downstream	Ircon Colony	RRIP-Upstream	RRIP-Downstream
1.	Physical Texture		Lighter Red					
2.	Soil Type		Coarse Brown Grained Soil					
	Physical Parameters							
4.	pH	-	7.3	7.4	7.9	8.0	7.2	7.6
5.	Conductivity	µS/cm	765	865	756	882	693	978
6.	SAR	-	8.9	7.45	7.58	8.67	9.05	7.36
7.	CEC	meq/ 100 gm	18.22	17.26	16.58	16.84	15.92	19.63
	Chemical Parameters							
8.	Sodium as Na	mg/kg	595	662	634	696	535	641
9.	Potassium as K	mg/kg	275	282	276	312	256	548
10.	Phosphate as P	mg/kg	2.53	2.78	1.74	1.72	1.66	1.84
	Cations							
11.	Calcium as Ca	mg/kg	382	636	366	604	386	713
12.	Sodium as Na	mg/kg	262	418	198	422	278	462
13.	Potassium as K	mg/kg	132	197	136	205	124	192
	Anions							
14.	Chlorides as Cl	mg/kg	86	102	118	129	95	154
15.	Sulphates as SO_4	mg/kg	582	630	458	586	462	645
16.	CO_3-C	%	1.28	0.79	0.52	0.80	0.67	0.96
	Heavy Metals							
17.	Cadmium as Cd	mg/kg	2.0	2.7	1.9	2.2	1.6	2.0
18.	Tot. Chromium as Cr^{+6}	mg/kg	1.75	2.18	1.6	2.2	1.8	2.3
19.	Nickel as Ni	mg/kg	1.62	2.0	1.95	2.24	1.22	1.7
20.	Arsenic as As	mg/kg	ND	ND	ND	ND	ND	ND
21.	Lead as Pb	mg/kg	ND	ND	ND	ND	ND	ND
22.	Zinc as Zn	mg/kg	96	125	102	123	127	132
23.	Copper as Cu	mg/kg	11.5	13.8	9.45	12.8	13.4	13.8

Note: -

(1) Method of Measurement: Measurement for testing soil samples analysis was carried out as per the method(s) prescribed in the enclosure of PO No.: 4000370822-037-1035, dated: 29.10.2025.

(2) *ND: Not detected, MAD: Methini Ash Dyke, CAD: Central Ash Dyke, RRIP: Rihand Reservoir Intake Point.*

B. Sreekanth 27/01/2026

Dr. B. Sreekanth
Project Investigator

Annexure - 05

FGD Status (Apr'26)

Unit No.	Target date of completion	% Completion of Civil works	Details of Civil Works completed	Details of Civil works due	% Completion of Mech. works	Details of Mech. Works completed	Details of Mech. works due
1.	Apr'27	Civil- 95%	Chimney Shell painting ip, U#2 flue can erection ip. GSS - steel super structure compl, sheeting ip. GDB- all floor casting compl ECR bldg.- finish civil work ip. Duct foundation completed RCPH#2 steel roof structure IP RCPH#1 RCC structure ip, Tapping point RCC completed. Other finish civil works in progress	U#1 Flue can erection, balance Pipe rack foundations, ECR building finishing work, GDB- sheeting work finish civil works	Mech-99 % fabrication(site) Erection- 59%	Absorber#1 Shell assembly compl, Hot work completed Common- Tanks rubber lining ip GDB structure ip, Pipe rack gallery erection ip RC Pumps alignment compl Booster Fans alignment compl Duct assembly & erection IP	Absorber#1 internal erection, Duct support structure and ducting- assembly & erection, Pipe rack balance works, Piping works, GDB equipment erection GSS equipment erection
2.	Feb'27					Absorber#2 Shell assembly completed, Hot work ip, RC Pumps alignment compl Booster Fans alignment compl Duct assembly & erection IP	Absorber balance hot work, internal erection Duct support structure and ducting- assembly & erection
3.	May'27	Civil-98%	Chimney Stage II shell painting ip U#3 Flue can – 3 of 4 segment erection completed, U#4 Flue can – 3 of 4 segment completed,	U#3 & #4 flue can balance erection, borosilicate lining finish civil works, Paving, drains etc	Mech-92% fabrication(site) **Total 20230 / 26532 MT erection completed**	Interconnection 3&4 compl, Booster fan 3&4 erection completed, Ducting- U#3&4 ICD to BUF inlet duct erection compl, U3 duct insulation IP Absorber-3 Internals erection ip Absorber-4 shell erection compl, Roof assembly ip.	RCPH-3, 4 structures Balance, U#3 &#4 Duct supporting Structure and duct erection ip Absorber-3&4 balance works Booster fan 3&4 alignment Piping
4.	Sept'27						
5.	Dec'26		Chimney Shell St – III painting compl U#6 flue can complete, U#5 flue can 4 of 4 segment erection compl. Borosilicate work ip, Electrical building and LHS-GHS switchgear - civil work compl, GSS & GDS- finish civil work ip Finish civil works, Paving & drain ip	U#5 flue can balance borosilicate lining Balance finish work of GDS & GSS. Balance Paving & drains		Interconnection 5 &6 compl U#6 Flue gas path ready Absorber#5 -water fill test compl, Booster fan #5 oil flushing ip Ducting- U#5 duct insulation ip, Lime handling – commissioning ip GDS- Equipment erection compl GSS- Equipment erection IP Piping- laying compl, hydro test ip, Common system cabling ip	Common system commissioning – truck tipplers, Lime conveyors, Ball mills, Tanks readiness, Gypsum Dewatering system, Gypsum handling System
6.	Nov'26						

Report on Green Belt Development

NTPC Rihand has entered in an 10 years MoU with U.P. Forest Deptt. for plantation of 38000 nos. of tree saplings every year on the forest land to develop the carbon sink in the region. Tree plantation and its maintenance for 05 years is being done by U.P. Forest Deptt. and the entire cost of tree plantation and its maintenance is borne by NTPC Rihand. This MoU is effective from the year 2016 – 17. Approximately 24 Lacs nos. of trees have been planted by NTPC Rihand since inception, details of tree plantation during last 10 years is given below.

Year	Trees planted in (Nos.)	Approx. area covered (Hectares)	Species planted
2016-17	2961	01	Following local species have been planted: Sagaun, cut sagaun, karanj, arjun, cesia-semia, neem, mango, guava, sheesham, bamboo, amla, kanji, paakad, gulmohar, ashok, neembu, amaltas, paarijat, ber, palash etc.
2017-18	88000	70	
2018-19	49380	38	
2019 - 20	47380	37	
2020 - 21	39000	35	
2021 – 22	48000	37	
2022 – 23	55500	36	
2023 - 24	39000	35	
2024 - 25	49000	36	
2025 – 26 (till date)	49000 (including 9000 nos. of Miyawaki plantation)	37	

NTPC Rihand has started development of urban forest in township premises by planting the local plant species using Miyawaki method. Above activity has been started on 05.06.2020. During the year 2021 plantation of approx. 1000 medicinal plants has done. Approx. 37000 trees have been planted till date at NTPC Rihand using Miyawaki Method.

In the Financial year 2025-26 plantations of 40000 nos. of normal tree plantation & 9000 nos. of Miyawaki plantation has been done.

It is also submitted here that with reference to Gazette Notification S.O. 884 (E) regarding green credit programme, NTPC Rihand is coordinating 30,000 numbers of tree plantation in an area of 27 Hectares in Sonbhadra District through U.P. Forest Department.

Number of occupational Health Check Up done
October'2025 to March'2026

Month	Employees	Spouse	Contract Workers	Occupational diseases identified
Oct'25	23	09	1651	NIL
Nov'25	61	36	1602	NIL
Dec'25	135	69	1203	NIL
Jan'26	18	12	1470	NIL
Feb'26	Nil	4	826	NIL
Mar'26	5	4	856	NIL
Total Oct'25 – Mar'26	**242**	**134**	**7608**	NIL

Note:
Checkup being done for: ENT (Right & Left ear), Eye Check Up (distant, near vision and color), dental checkup, Chest X-Ray, ECG, heart, lung, eye, blood sugar, BP, Urine R/M etc.

Annexure - 08

Ref. IITR/SSP-532/December-2025

Date. 07/01/ 2026

10.30 - ANALYTICAL TEST RESULTS FOR AMBIENT AIR QUALITY MONITORING

Sampling Season : Winter Season
Date of sampling : December 09 to 13, 2025
Date of Samples Received in Lab : December 14, 2025
Date of Analytical Analysis Completion : January 03, 2026

Sl. No.	Parameters	Units	Shiv Mandir – Township (AAQ-I)	Bijpur - Punarwas (AAQ-II)	Avantika - TTS (AAQ-III)	MGR-Plant (AAQ-IV)	NAAQS:2009
Date of sampling			09/12/2025	10/12/2025	11/12/2025	12/12/2025	
1	PM_{10}	$\mu g/m^3$	76	78	84	86	100
2	$PM_{2.5}$	$\mu g/m^3$	46	54	45	52	60
3	SO_2	$\mu g/m^3$	25	26	26	28	80
4	NOx	$\mu g/m^3$	35	38	38	40	80
5	CO #	mg/m^3	1.05	0.92	1.10	0.98	02*
6	O_3	$\mu g/m^3$	64.50	72.48	73.35	76.56	100*
7	NH_3	$\mu g/m^3$	52.60	85.22	96.82	60.54	400
8	C_6H_6	$\mu g/m^3$	0.7	0.9	1.1	1.0	5
9	B(a)P	ng/m^3	0.23	0.27	0.30	0.32	1
10	Pb	$\mu g/m^3$	0.26	0.28	0.32	0.38	1
11	Ni	ng/m^3	5.5	5.4	6.2	4.2	20**
12	Hg	ng/m^3	ND	ND	ND	ND	20**
13	As	ng/m^3	ND	ND	ND	ND	06**

Note: -

(1) Method of Measurement: Measurement for testing ambient air quality was carried out as per the method(s) prescribed in the enclosure of PO No.: 4000370822-037-1035, dated: 29.10.2025.
(2) # Average concentration of 8 hourly data monitored for a period of 24 hrs.
*(3) *8 hours avg.*
*(4) **Annual avg.*
(5) ND – Not detected
(6) NAAQS (2009): National Ambient Air Quality Standards in India provided by CPCB.

B. Sreekanth 07/01/2026

Dr. B. Sreekanth
Project Investigator

Ref. IITR/SSP-532/March-2026
Date. 16.04.2026

10.30 - ANALYTICAL TEST RESULTS FOR AMBIENT AIR QUALITY MONITORING

Sampling Season : Summer Season
Date of sampling : March 15 to 18, 2026
Date of Samples Received in Lab : March 24, 2026
Date of Analytical Analysis Completion : April 09, 2026

Sl. No.	Parameters	Units	Shiv Mandir – Township	Bijpur - Punarwas	Avantika - TTS	MGR-Plant	NAAQS:2009
			(AAQ-I)	(AAQ-II)	(AAQ-III)	(AAQ-IV)	
Date of sampling			15-03-2026	16-03-2026	17-03-2026	18-03-2026	
1	PM_{10}	$\mu g/m^3$	72	86	80	92	100
2	$PM_{2.5}$	$\mu g/m^3$	44	58	46	54	60
3	SO_2	$\mu g/m^3$	26	28	29	28	80
4	NOx	$\mu g/m^3$	34	40	42	40	80
5	CO#	mg/m^3	1.02	0.98	1.19	0.99	02*
6	O_3	$\mu g/m^3$	66.25	74.62	76.58	80.92	100*
7	NH_3	$\mu g/m^3$	56.28	82.72	88.56	64.93	400
8	C_6H_6	$\mu g/m^3$	0.6	0.9	1.1	1.0	5
9	B(a)P	ng/m^3	0.24	0.22	0.32	0.34	1
10	Pb	$\mu g/m^3$	0.22	0.31	0.34	0.41	1
11	Ni	ng/m^3	5.2	5.9	6.4	4.9	20**
12	Hg	ng/m^3	ND	ND	ND	ND	20**
13	As	ng/m^3	ND	ND	ND	ND	06**

Note: -

(1) Method of Measurement: Measurement for testing ambient air quality was carried out as per the method(s) prescribed in the enclosure of PO No.: 4000370822-037-1035, dated: 29.10.2025.
(2) # Average concentration of 8 hourly data monitored for a period of 24 hrs.
*(3) *8 hours avg.*
*(4) **Annual avg.*
(5) ND – Not detected
(6) NAAQS (2009): National Ambient Air Quality Standards in India provided by CPCB.

B. Sreekanth 16/04/2026
Dr. B. Sreekanth
Project Investigator

ANNEX-09

एनटीपीसी NTPC

एनटीपीसी लिमिटेड
(भारत सरकार का उद्यम)
NTPC Limited
(A Govt. of India Enterprise)

अनिल श्रीवास्तव
परियोजना प्रमुख
ANIL SHRIVASTAVA
Head of Project

रिहंद / Rihand

सन्दर्भ संख्या / Ref No.:070/BUH/EMG/NCL/ -09

दिनांक / Date: 08.12.2025

To

The Director (Tech / P&P)
Northern Coalfields Limited
Panjreh Bhawan, Singrauli
Pin – 486 889 (MP)

Sub: Reminder Notice regarding utilization of Pond ash of NTPC - Rihand for back filling of Kakri, Krishnashila ,Amlori & Gorbi coal Mine voids.

Dear Sir,

Please refer **Clause B (3) of MOEF&CC Notification dated 31.12.2021** issued for Fly ash utilization which is reproduced as below:

Quote

"*It shall be obligatory on all mines located within 300 kilometres radius of thermal power plant, to undertake backfilling of ash in mine voids or mixing of ash with external Overburden dumps, under Extended Producer Responsibility (EPR).*
All mine owners or operators (Government, Public and Private Sector) within three hundred kilometres (by road) from coal or lignite based thermal power plants, shall undertake measures to mix at least 25 per cent of ash on weight to weight basis of the materials used for external dump of overburden, backfilling or stowing of mine (running or abandoned as the case may be) as per the guidelines of the Director General of Mines Safety (DGMS): Provided that such thermal power stations shall facilitate the availability of required quantity of ash by delivering ash free of cost and bearing the cost of transportation or cost or transportation arrangement decided on mutually agreed terms and mixing of ash with overburden in mine voids and dumps shall be applicable for the overburden generated from the date of publication of this notification and the utilization of ash in the said activities shall be carried out in accordance with guidelines laid down by the Central Pollution Control Board, Director General of Mines Safety and Indian Bureau of Mines.
Explanation.- For the purpose of this sub-paragraph, it is also clarified that the provisions of ash free of cost and free transportation shall be applicable, if thermal power plants serve a notice on the mine owner for the same and the mandate of using 25 per cent of ash for mixing with overburden dump and filling up of mine voids shall not be applicable unless a notice is served on the mine owner by thermal power plant"

Unquote

We hereby confirm that our **Rihand Super Thermal Power Station** has **30.00 LMT** of issuable ash on **an annual basis** for backfilling or stowing of mine and for mixing with overburden. Ash shall be delivered free of cost bearing the cost of transportation.

As per the available Information, **NCL's Kakri, Krishnashila, Amlori** shall be declared abandoned shortly while **Gorbi Mine** has already been declared abandoned. All these mines are located within **70-75 KM** from **NTPC Rihand** We hereby serve notice to you to use ash from NTPC Rihand for backfilling in **Kakri , Krishnashila , Amlori & Gorbi coal mine** void or mixing of ash with external overburden dumps under extended producer responsibility.

We are willing to enter the **MoU** with **NCL** for the **above-mentioned Coal Mine's** backfilling in accordance with mine filling **SOPs** issued by the **Ministry of coal.**

An early response in this regard is requested.

With warm regards,

Yours sincerely,

Anil Shrivastava
Executive Director (HOP)
NTPC Rihand

ANNEX-10

Annexure - 10

Ref. IITR/SSP-532/December-2025

Date: 7.1.24 2026

10.50 - ANALYTICAL TEST REPORT OF ASH POND EFFLUENT MONITORING

Sampling Season	:	Winter Season
Date of sampling	:	December 13, 2025
Date of Samples Received in Lab	:	December 14, 2025
Date of Analytical Analysis Completion	:	January 03, 2026

Sl. No.	Parameters	Units	Ash Pond-Methini Dyke	Ash Pond-Central Dyke	*General Standards
1.	pH	--	7.67	7.85	6.5 – 8.5
2.	Total Suspended Solids	mg/L	44	66	100
3.	BOD $_{(5\ day)}$ at 20 °C	mg/L	2.8	3.0	30
4.	COD	mg/L	32.5	28.6	250
5.	Oil & Grease	mg/L	2.6	3.2	10
6	Fluoride as F	mg/L	0.56	0.60	2.0
7	Mercury as Hg	mg/L	BDL	BDL	0.01
8	Arsenic as As	mg/L	BDL	BDL	0.2
9	Selenium as Se	mg/L	BDL	BDL	0.05
10	Lead as Pb	mg/L	0.05	0.07	0.1
11	Cadmium as Cd	mg/L	0.06	0.07	2.0
12	Total Chromium as Cr,	mg/L	0.25	0.32	2.0
13	Hexavalent Chromium (Cr^{+6})	mg/L	0.04	0.06	0.1
14	Copper as Cu	mg/L	0.05	0.07	3.0
15	Iron as Fe	mg/L	1.14	1.26	3.0
16	Zinc as Zn	mg/L	1.46	1.75	5.0
17	Nickel as Ni	mg/L	0.82	0.96	3.0

Note: -

*(1) *General Standards for Industrial Effluent Discharge as per CPCB Guidelines.*

(2) Method of Measurement: Measurement for testing Ash Pond Effluent Monitoring was carried out as per the method(s) prescribed in PO No.: 4000370822-037-1035, dated: 29.10.2025.

(3) BDL – Below Detection Limit.

B. Sreekanth 07/01/2026

Dr. B. Sreekanth
Project Investigator

Ref. IITR/SSP-532/December-2025

Date 27.01.2026

10.60 - ANALYTICAL TEST REPORT OF DOMESTIC EFFLUENT MONITORING

Sampling Season	:	Winter Season
Date of sampling	:	December 13, 2025
Date of Samples Received in Lab	:	December 14, 2025
Date of Analytical Analysis Completion	:	January 03, 2026

Sl. No.	Parameters	Units	STP Plant	STP Township	*General Standards
1.	pH	--	7.8	7.6	5.5 – 9.0
2.	Total Suspended Solids	mg/L	18	15	20
3.	$BOD_{(5\ day)}$ at 20 °C	mg/L	8.3	7.2	10
4.	COD	mg/L	36.8	32.5	50
5.	Oil & Grease	mg/L	3.2	2.8	10
6	Fluoride	mg/L	0.64	0.52	2.0
6.	Nitrate -Total	mg/L	6.0	5.8	10
7.	Phosphorus - Total	mg/L	0.26	0.24	1.0
8.	Fecal Coliform	MPN / 100 ml	64	58	100
9	Iron as Fe	mg/L	1.32	1.18	3.0
10.	Zinc as Zn	mg/L	0.98	0.86	5.0
11.	Copper as Cu	mg/L	0.95	0.82	3.0
12.	Lead as Pb	mg/L	0.03	0.028	0.1
13.	Total Chromium as Cr	mg/L	0.22	0.19	2.0
14.	Hexavalent Chromium as Cr^{+6}	mg/L	0.06	0.08	0.1
15.	Cadmium as Cd	mg/L	0.02	0.018	2.0
16.	Mercury as Hg	mg/L	BDL	BDL	0.01
17.	Arsenic as As	mg/L	BDL	BDL	0.2
18.	Selenium as Se	mg/L	BDL	BDL	0.05
19.	Nickel as Ni	mg/L	0.30	0.25	3.0

Note: -

*(1) *General Standards for Industrial Effluent Discharge as per CPCB Guidelines & EPA.*

(2) Method of Measurement: Measurement for testing Domestic Effluent Monitoring was carried out as per the method(s) prescribed in PO No.: 4000370822-037-1035, dated: 29.10.2025.

(3) BDL - Below Detection Limit.

Dr. B. Sreekanth
Project Investigator

Ref. IITR/SSP-532/December-2025
Date 07/01/ 2026

10.90 - ANALYTICAL TEST REPORT OF ETP EFFLUENT MONITORING

Sampling Season	:	Winter Season
Date of sampling	:	December 13, 2025
Date of Samples Received in Lab	:	December 14, 2025
Date of Analytical Analysis Completion	:	January 03, 2026

Sl. No.	Parameters	Units	ETP Stage-I	ETP Stage-II	*General Standards
1	pH	--	7.72	7.65	6.5 – 8.5
2	Total Suspended Solids	mg/L	52	48	100
3	BOD $_{(5\ day)}$ at 20 °C	mg/L	4.6	4.4	30
4	COD	mg/L	31.4	30.2	250
5	Oil & Grease	mg/L	4.2	3.8	10
6	Fluoride as F	mg/L	0.54	0.78	2.0
7	Iron as Fe	mg/L	1.75	1.98	3.0
8	Zinc as Zn	mg/L	1.58	2.90	5.0
9	Copper as Cu	mg/L	1.05	1.60	3.0
10	Lead as Pb	mg/L	ND	ND	0.1
11	Total Chromium as Cr	mg/L	0.68	0.75	2.0
12	Hexavalent Chromium Cr^{+6}	mg/L	ND	ND	0.1
13	Cadmium as Cd	mg/L	0.82	1.04	2.0
14	Nickel as Ni	mg/L	0.89	1.12	3.0
15	Arsenic as As	mg/L	ND	ND	0.2
16	Selenium as Se	mg/L	ND	ND	0.05
17	Mercury as Hg	mg/L	ND	ND	0.01

Note: -

*(1) *General Standards for Industrial Effluent Discharge as per CPCB Guidelines.*

(2) Method of Measurement: Measurement for testing Domestic Effluent Monitoring was carried out as per the method(s) prescribed in PO No.: 4000370822-037-1035, dated: 29.10.2025.

(3) ND - Not detected

B. Sreekanth 07/01/2026
Dr. B. Sreekanth
Project Investigator

Ref. IITR/SSP-532/December-2025
Date. 27/01/ 2026

10.140 - ANALYTICAL TEST REPORT OF INDUSTRIAL EFFLUENT (CEA) MONITORING

Sampling Season	:	Winter Season
Date of sampling	:	December 13, 2025
Date of Samples Received in Lab	:	December 14, 2025
Date of Analytical Analysis Completion	:	January 03, 2026

Sl. No.	Parameters	Units	ETP Stage-III	*General Standards
1	pH	--	7.5	6.5 – 8.5
2	Total Suspended Solids	mg/L	42	100
3	$BOD_{(5\ day)}$ at 20 °C	mg/L	4.2	30
4	COD	mg/L	34.0	250
5	Oil & Grease	mg/L	3.80	10
6	Fluoride (F)	mg/L	0.61	2.0
7	Chloride	mg/L	36.2	NS
8	Total residual chlorine	mg/L	ND	1.0
9.	Sulphate as SO_4	mg/L	44.2	NS
10.	Sulphide as S	mg/L	0.45	2.0
11.	Phenolic Compound (as C_6H_5OH)	mg/L	0.04	1.0
12.	Mercury (Hg)	mg/L	ND	0.01
13.	Selenium (Se)	mg/L	ND	0.05
14.	Arsenic (As)	mg/L	ND	0.2
15.	Lead (Pb)	mg/L	ND	0.1
16.	Cadmium (Cd)	mg/L	0.38	2.0
17.	Copper (Cu)	mg/L	1.16	3.0
18.	Total Chromium (Cr)	mg/L	0.82	2.0
19.	Iron (Fe)	mg/L	2.10	3.0
20.	Zinc (Zn)	mg/L	1.92	5.0
21.	Nickel (Ni)	mg/L	0.96	3.0
22.	Ammonical Nitrogen	mg/L	5.4	50
23.	Total Kjeldahl Nitrogen	mg/L	17.5	100
24.	Nitrate Nitrogen	mg/L	4.2	10
25.	Phosphate as P	mg/L	1.9	5.0
26.	Hexavalent Chromium	mg/L	ND	0.1
27.	Manganese (Mn)	mg/L	0.54	2.0
28.	Cyanide as (CN)	mg/L	ND	0.2
29.	Vanadium	mg/L	ND	0.2

Note: -

*(1) *General Standards for Industrial Effluent Discharge as per CPCB Guidelines.*

(2) Method of Measurement: Measurement for testing Domestic Effluent Monitoring was carried out as per the method(s) prescribed in PO No.: 4000370822-037-1035, dated: 29.10.2025.

(3) NS - Not specified

(4) ND – Not detected

B. Sreekanth 27/01/2026

Dr. B. Sreekanth
Project Investigator

Ref. IITR/SSP-532/March-2026
Date. 16/04/2026

10.50 - ANALYTICAL TEST REPORT OF ASH POND EFFLUENT MONITORING

Sampling Season	:	Summer Season
Date of sampling	:	March 16 to 18, 2026
Date of samples received in lab	:	March 24, 2026
Date of Analytical Analysis Completion	:	April 09, 2026

Sl. No.	Parameters	Units	Ash Pond-Methini Dyke	Ash Pond-Central Dyke	*General Standards
1.	pH	--	7.71	7.89	6.5 – 8.5
2.	Total Suspended Solids	mg/L	38	62	100
3.	$BOD_{(5\ day)}$ at 20 °C	mg/L	3.1	3.2	30
4.	COD	mg/L	34.6	28.2	250
5.	Oil & Grease	mg/L	3.1	3.4	10
6	Fluoride as F	mg/L	0.59	0.66	2.0
7	Mercury as Hg	mg/L	ND	ND	0.01
8	Arsenic as As	mg/L	ND	ND	0.2
9	Selenium as Se	mg/L	ND	ND	0.05
10	Lead as Pb	mg/L	0.06	0.07	0.1
11	Cadmium as Cd	mg/L	0.06	0.08	2.0
12	Total Chromium as Cr,	mg/L	0.24	0.34	2.0
13	Hexavalent Chromium (Cr^{+6})	mg/L	0.05	0.05	0.1
14	Copper as Cu	mg/L	0.04	0.09	3.0
15	Iron as Fe	mg/L	1.18	1.31	3.0
16	Zinc as Zn	mg/L	1.49	1.81	5.0
17	Nickel as Ni	mg/L	0.84	0.98	3.0

Note: -

*(1) *General Standards for Industrial Effluent Discharge as per CPCB Guidelines.*

(2) Method of Measurement: Measurement for testing Ash Pond Effluent Monitoring was carried out as per the method(s) prescribed in PO No.: 4000370822-037-1035, dated: 29.10.2025.

(3) ND – Not Detected.

Dr. B. Sreekanth
Project Investigator

Ref. IITR/SSP-532/March-2026
Date..16/04/ 2026

10.60 - ANALYTICAL TEST REPORT OF DOMESTIC EFFLUENT MONITORING

Sampling Season	:	Summer Season
Date of sampling	:	March 23, 2026
Date of samples received in lab	:	March 24, 2026
Date of Analytical Analysis Completion	:	April 10, 2026

Sl. No.	Parameters	Units	STP Plant	STP Township	*General Standards
1.	pH	--	7.8	7.6	5.5 – 9.0
2.	Total Suspended Solids	mg/L	18	13	20
3.	$BOD_{(5\ day)}$ at 20 °C	mg/L	8.6	7.2	10
4.	COD	mg/L	36.8	32.6	50
5.	Oil & Grease	mg/L	3.4	2.9	10
6	Fluoride	mg/L	0.69	0.58	2.0
6.	Nitrate -Total	mg/L	6.1	5.4	10
7.	Phosphorus - Total	mg/L	0.26	0.22	1.0
8.	Fecal Coliform	MPN / 100 ml	62	56	100
9	Iron as Fe	mg/L	1.38	1.21	3.0
10.	Zinc as Zn	mg/L	0.98	0.85	5.0
11.	Copper as Cu	mg/L	0.92	0.84	3.0
12.	Lead as Pb	mg/L	0.034	0.026	0.1
13.	Total Chromium as Cr	mg/L	0.24	0.19	2.0
14.	Hexavalent Chromium as Cr^{+6}	mg/L	0.04	0.06	0.1
15.	Cadmium as Cd	mg/L	0.03	0.01	2.0
16.	Mercury as Hg	mg/L	ND	ND	0.01
17.	Arsenic as As	mg/L	ND	ND	0.2
18.	Selenium as Se	mg/L	ND	ND	0.05
19.	Nickel as Ni	mg/L	0.29	0.23	3.0

Note: -

*(1) *General Standards for Industrial Effluent Discharge as per CPCB Guidelines & EPA.*

(2) Method of Measurement: Measurement for testing Domestic Effluent Monitoring was carried out as per the method(s) prescribed in PO No.: 4000370822-037-1035, dated: 29.10.2025.

(3) ND – Not Detected.

Dr. B. Sreekanth
Project Investigator

Ref. IITR/SSP-532/March-2026
Date.16/04/2026

10.90 - ANALYTICAL TEST REPORT OF ETP EFFLUENT MONITORING

Sampling Season	:	Summer Season
Date of sampling	:	March 23 2026
Date of samples received in lab	:	March 24 2026
Date of Analytical Analysis Completion	:	April, 09 2026

Sl. No.	Parameters	Units	ETP Stage-I	ETP Stage-II	*General Standards
1	pH	--	7.74	7.61	6.5 – 8.5
2	Total Suspended Solids	mg/L	54	49	100
3	BOD (5 day) at 20 °C	mg/L	4.8	4.6	30
4	COD	mg/L	30.5	31.2	250
5	Oil & Grease	mg/L	4.4	4.0	10
6	Fluoride as F	mg/L	0.56	0.74	2.0
7	Iron as Fe	mg/L	1.71	2.12	3.0
8	Zinc as Zn	mg/L	1.68	2.99	5.0
9	Copper as Cu	mg/L	1.01	1.14	3.0
10	Lead as Pb	mg/L	ND	ND	0.1
11	Total Chromium as Cr	mg/L	0.71	0.79	2.0
12	Hexavalent Chromium Cr^{+6}	mg/L	ND	ND	0.1
13	Cadmium as Cd	mg/L	0.88	1.06	2.0
14	Nickel as Ni	mg/L	0.96	1.12	3.0
15	Arsenic as As	mg/L	ND	ND	0.2
16	Selenium as Se	mg/L	ND	ND	0.05
17	Mercury as Hg	mg/L	ND	ND	0.01

Note: -

*(1) *General Standards for Industrial Effluent Discharge as per CPCB Guidelines.*

(2) Method of Measurement: Measurement for testing Domestic Effluent Monitoring was carried out as per the method(s) prescribed in PO No.: 4000370822-037-1035, dated: 29.10.2025.

(3) ND - Not detected

B. Sreekanth 16/04/2026

Dr. B. Sreekanth
Project Investigator

Ref. IITR/SSP-532/March-2026
Date 16/04/2026

10.140 - ANALYTICAL TEST REPORT OF INDUSTRIAL EFFLUENT (CEA) MONITORING

Sampling Season	:	Summer Season
Date of sampling	:	March 23 2026
Date of samples received in lab	:	March 24 2026
Date of Analytical Analysis Completion	:	April, 09 2026

Sl. No.	Parameters	Units	ETP Stage-III	*General Standards
1	pH	--	7.7	6.5 – 8.5
2	Total Suspended Solids	mg/L	52	100
3	$BOD_{(5\ day)}$ at 20 °C	mg/L	2.8	30
4	COD	mg/L	33.6	250
5	Oil & Grease	mg/L	4.8	10
6	Fluoride (F)	mg/L	0.39	2.0
7	Chloride	mg/L	28.3	NS
8	Total residual chlorine	mg/L	ND	1.0
9.	Sulphate as SO_4	mg/L	46.2	NS
10.	Sulphide as S	mg/L	0.41	2.0
11.	Phenolic Compound (as C_6H_5OH)	mg/L	0.03	1.0
12.	Mercury (Hg)	mg/L	ND	0.01
13.	Selenium (Se)	mg/L	ND	0.05
14.	Arsenic (As)	mg/L	ND	0.2
15.	Lead (Pb)	mg/L	ND	0.1
16.	Cadmium (Cd)	mg/L	0.43	2.0
17.	Copper (Cu)	mg/L	1.69	3.0
18.	Total Chromium (Cr)	mg/L	0.59	2.0
19.	Iron (Fe)	mg/L	1.53	3.0
20.	Zinc (Zn)	mg/L	3.21	5.0
21.	Nickel (Ni)	mg/L	0.93	3.0
22.	Ammonical Nitrogen	mg/L	7.6	50
23.	Total Kjeldahl Nitrogen	mg/L	26.0	100
24.	Nitrate Nitrogen	mg/L	3.9	10
25.	Phosphate as P	mg/L	1.6	5.0
26.	Hexavalent Chromium	mg/L	ND	0.1
27.	Manganese (Mn)	mg/L	0.37	2.0
28.	Cyanide as (CN)	mg/L	ND	0.2
29.	Vanadium	mg/L	ND	0.2

Note: -

*(1) *General Standards for Industrial Effluent Discharge as per CPCB Guidelines.*

(2) Method of Measurement: Measurement for testing Domestic Effluent Monitoring was carried out as per the method(s) prescribed in PO No.: 4000370822-037-1035, dated: 29.10.2025.

(3) NS - Not specified

(4) ND – Not detected

16/04/2026
Dr. B. Sreekanth
Project Investigator