BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH,
NEW DELHI
ORIGINAL APPLICATION NO.164 OF 2018

IN THE MATTER OF:

ASHWANI KUMAR DUBEY …APPELLANT

Versus

UNION OF INDIA & ORS …RESPONDENTS

WITH

ORIGINAL APPLICATION NO.117 OF 2014

IN THE MATTER OF:

SHANTANU SHARMA …APPELLANT

VERSUS

UNION OF INDIA …RESPONDENTS

INDEX **NDOH 28.01.2025**

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PLACE NEW DELHI
DATE:27.01.2025

KUMAR ANURAG SINGH
ADVOCATE FOR THE RESPONDENT/STATE OF JHARKHAND
I-13, LOWER GROUND FLOOR,
LAJPAT NAGAR-3,
NEW DELHI-110024
OFFICE@KUMARANURAGSINGH.COM

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,

PRINCIPAL BENCH AT NEW DELHI

ORIGINAL APPLICATION NO. 164 OF 2018

Ashwani Kumar Dubey ...Applicant

Versus

Union of India & Ors. ...Respondents(s)

COMPLIANCE AFFIDAVIT OF ORDER DATED 18.01.2024 & 19.03.2024 ON BEHALF OF STATE OF JHARKHAND

27 JAN 2025 DATE

REF No 235

MOST RESPECTFULLY SHOWETH

I, Md. Muslaquim Ansari, aged about 54 years, S/o Md. Alim Ansari, R/o Bariali, Ranchi, presently posted as Joint Secretary, Energy deptt. and am duly authorized to swear this affidavit and do hereby solemnly affirm and state as follows:

1. That at present, I am working and posted as Joint Secretary, Energy deptt. and as such I am conversant with the facts and circumstances of the matter as per the records. As such I am competent to swear and affirm this Affidavit
2. That I have been authorized to swear this affidavit by the Competent Authority. Further, It is stated that I have gone through the relevant files and records in the present case.
3. That this Hon'ble Tribunal vide common order dated 18.01.2022 disposed the Original Application Nos. 164/2018, 194/2020, 94/2020, 148/2020, 107/2020, 117/2014, 499/2014 & 102/2014 wherein this Hon'ble Tribunal

NOTARY PUBLIC Sangita Goswami Ranchi Jharkhand GOVT. OF INDIA

Authorised under Notaries Act-1952 and Notaries Rules-1956 Govt. of India

addressed the issues related to utilization and disposal of fly ash by industries and energy plants.

4. That the order dated 18.01.2022 passed by this Hon'ble Tribunal was challenged before the Hon'ble Supreme Court in Civil Appeal Nos. 3856/2022, 4529/2022, 4525/2022 & 4581/2022 raising the issue that the original applications were decided without complying the Principal of Natural Justice.

5. That the Hon'ble Supreme Court vide order dated 05.07.2023 passed in Civil Appeal Nos. 3856/2022, 4529/2022, 4525/2022 & 4581/2022 set-aside the ordee dated 18.01.2022 passed by this Hon'ble Tribunal in the instant matter and remanded the matter back to this Hon'ble Tribunal with the following directions:-

"18. We have perused the impugned order of the NGT and particularly paragraph '16' which has been extracted above. It is apparent that the appellant(s) herein who were respondents before the NGT were not given an opportunity to file their objections to the recommendations made by the Committee constituted by the NGT which is apparent by the fact that the recommendations were uploaded on 15.01.2022 and the final order of the NGT was passed three days later on, i.e.18.01.2022. Thus, this is a clear case of there being non compliance with the principles of natural justice. On the said ground alone the impugned order is set aside, the matter is remanded to the NGT for reconsideration from the stage of the recommendations filed by the expert Committee constituted by the NGT. The appellant(s) herein are permitted to file their objections, if they are so advised. The NGT shall consider the objections, if any, filed to the recommendations and thereafter dispose of the applications in accordance with law and after giving a reasonable opportunity to all parties.

19. the appeals are allowed and disposed of in the aforesaid terms. Pending application(s), if any, shall stand disposed of."

6. That, on 02.11.2023, this Hon'ble Tribunal issued notice to all the parties in the Original Application Nos. 164/2018, 194/2020, 94/2020, 148/2020, 107/2020, 117/2014, 499/2014 & 102/2014 and directed the registry to furnish report of service of notice on the next date of hearing.
7. That vide order dated 18.01.2024, this Hon'ble Tribunal again directed the registry to issue fresh notice to unserved parties and granted 4 weeks time to the Counsels appearing for parties to file their reply.
8. That on 19.03.2024, this Hon'ble Tribunal again granted time to file reply if has not been filed.
9. That I have gone through the order dated 18.01.2024 and 19.03.2024 passed by this Hon'ble Tribunal and have understood the same.
10. That in compliance of order dated 18.01.2024 and 19.03.2024, the Department of Energy, Government of Jharkhand, on behalf of the Answering Respondent, has taken the necessary steps to ensure adherence to the prescribed guidelines for the utilization and disposal of fly ash.
11. That the Department of Energy, Government of Jharkhand issued communications to related corporations and offices to provide updated status reports and implemented measures for proper fly ash management vide Letter No. 1045 dated 29.05.2024, Letter No. 1187 dated 25.06.2024 and Letter no. 1286 dated 10.07.2024.

    True copies of the Letter No. 1045 dated 29.05.2024, Letter No. 1187 dated 25.06.2024 and Letter no. 1286 dated 10.07.2024 are annexed herewith and marked as **ANNEXURE-A Colly [Page 5 to 7].**
12. That pursuant to the communications, reports received from the energy plants including Usha Martin, Inland Power Limited, ACC, DVC, Grasim Industries Limited, TVNL, Rungta Mines Limited and others.

NOTARY PUBLIC
Sangita Goswami
Advocate
En. No. 0375/03
Ranchi Jharkhand
GOVT. OF INDIA

True Copies of the reports received from various energy plants are annexed herewith and marked as **ANNEXURE-B Colly[Page 8 to 134].**

13. That any non-compliance of order passed by this Hon'ble Tribunal by the Answering Respondent is neither intentional nor within the control of the Answering Respondent herein.
14. That the answering Respondent herein craves leave of this Hon'ble Tribunal to file a detailed Reply/Counter Affidavit in the instant matter as and when deemed necessary and/or directed by this Hon'ble Tribunal.
15. I state that the statements of facts mentioned therein are all true and correct to my knowledge and nothing material has been concealed therefrom, and no part of it is false.
16. That, the Annexures annexed with this Compliance affidavit are true and correct translated/typed copies of their respective original.
17. That the present case is being filed in bonafide and in the interest of justice.

DEPONENT

VERIFICATION

I, the above-named Deponent, do hereby verify that the contents of this Affidavit are true and correct to the best of my knowledgeand belief and that no part of this Affidavit is false and no material facts havebeen concealed therefrom.

Verified at _____ on this _____ Day of January, 2025.

DEPONENT

NOTARY PUBLIC GOVT. OF INDIA

NOTARY PUBLIC RANCHI 27/1/25

Signature Attested Identification of Lawyers

पत्रांक–3 / उ०वि०–कोर्ट केस–16 / 24...1045...

झारखण्ड सरकार,
ऊर्जा विभाग

प्रेषक,

मो० मुस्तकीम अंसारी,
सरकार के उप सचिव।

सेवा में,

संलग्न सूची के अनुसार।

राँची, दिनांक–...29/05/2024...

विषय :– **माननीय NGT, New Delhi में दायर वाद O.A. No.-164/2018/PB(Earlier O.A. No.-276/2013) Ashwini Kumar Dubey V/s Union of India & Ors. में दिनांक–19.03.24 एवं 18.01.24 को पारित आदेश के अनुपालन के संबंध में।**

प्रसंग :– वन, पर्यावरण एवं जलवायु परिवर्तन विभाग, झारखण्ड, राँची का पत्रांक–1751, दि०– 09.05.2024 एवं पत्रांक–961, दिनांक–14.03.2024

महाशय,

निदेशानुसार उपर्युक्त विषयक प्रासंगिक पत्रों का संदर्भ ग्रहण किया जाए। वन, पर्यावरण एवं जलवायु परिवर्तन विभाग, झारखण्ड, राँची के प्रासंगिक पत्रों द्वारा माननीय NGT, New Delhi में दायर वाद O.A. No.-164/2018/PB(Earlier O.A. No.-276/2013) Ashwini Kumar Dubey V/s Union of India & Ors. में दिनांक–18.01.2024 को पारित आदेश के कार्यान्वयन एवं अद्यतन स्थिति का अनुरोध किया गया है, जो Fly Ash के उपयोग / निस्तारण संबंधी कार्रवाई से संबंधित है।

अतः प्रासंगिक पत्रों की छायाप्रति संलग्न करते हुए अनुरोध है कि दस (10) दिनों अंदर पारित आदेश के कार्यान्वयन एवं अद्यतन स्थिति प्रतिवेदन से विभाग को अवगत कराना सुनिश्चित किया जाए।

कृपया इसे सर्वोच्च प्राथमिकता दी जाए।

विश्वासभाजन,
29/5/24
सरकार के उप सचिव

अनु०–यथोपरि।

ज्ञापांक–...1045... राँची, दिनांक–...29/05/2024...

प्रतिलिपिः– सदस्य सचिव, झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद, राँची को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित / विशेष सचिव, वन पर्यावरण एवं जलवायु परिवर्त्तन विभाग, झारखण्ड, राँची के पत्रांक–1751, दि०–09.05.2024 के क्रम में सूचनार्थ प्रेषित।

29/5/24
सरकार के उप सचिव

स्मार

पत्रांक–3 / उ०वि०–कोर्ट केस–16 / 24 ....1187....

झारखण्ड सरकार,
ऊर्जा विभाग

प्रेषक,

मो० मुस्तकीम अंसारी,
सरकार के उप सचिव।

सेवा में,

संलग्न सूची के अनुसार।

राँची, दिनांक– 25/06/2024

विषय :– **माननीय NGT, New Delhi में दायर वाद O.A. No.-164/2018/PB(Earlier O.A. No.-276/2013) Ashwini Kumar Dubey V/s Union of India & Ors. में दिनांक–19.03.24 एवं 18.01.24 को पारित आदेश के अनुपालन के संबंध में।**

प्रसंग :– विभागीय पत्रांक–1045, दिनांक–29.05.2024

महाशय,

निदेशानुसार उपर्युक्त विषयक प्रासंगिक पत्र द्वारा याचित प्रतिवेदन, जो माननीय NGT, New Delhi में दायर वाद O.A. No.-164/2018/PB(Earlier O.A. No.-276/2013) Ashwini Kumar Dubey V/s Union of India & Ors. में दिनांक–18.01.2024 को पारित आदेश के कार्यान्वयन एवं अद्यतन स्थिति के अनुपालन में Fly Ash के उपयोग / निस्तारण संबंधी कार्रवाई से संबंधित है, सम्प्रति अप्राप्त है।

अतः पुनः अनुरोध है कि दस (10) दिनों के अंदर पारित आदेश के कार्यान्वयन एवं अद्यतन स्थिति प्रतिवेदन से विभाग को अवगत कराना सुनिश्चित किया जाए।

कृपया इसे सर्वोच्च प्राथमिकता दी जाए।

विश्वासभाजन,

25/6/24

सरकार के उप सचिव

~~अनु० यथोपरि।~~

ज्ञापांक–....1187.... राँची, दिनांक– 25/06/2024

प्रतिलिपिः– सदस्य सचिव, झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद, राँची को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित / विशेष सचिव, वन पर्यावरण एवं जलवायु परिवर्त्तन विभाग, झारखण्ड, राँची के पत्रांक–1751, दि०–09.05.2024 के क्रम में सूचनार्थ प्रेषित।

25/6/24

सरकार के उप सचिव

द्वितीय स्मार

पत्रांक–3/ऊ०वि०–कोर्ट केस–16/24 6573 1286

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झारखण्ड सरकार,
ऊर्जा विभाग

प्रेषक,

मो० मुस्तकीम अंसारी,
सरकार के उप सचिव।

सेवा में,

संलग्न सूची के अनुसार।

राँची, दिनांक– 10/07/2024

विषय :– माननीय NGT, New Delhi में दायर वाद O.A. No.-164/2018/PB(Earlier O.A. No.-276/2013) Ashwini Kumar Dubey V/s Union of India & Ors. में दिनांक–01.10.2024 की सुनवाई हेतु प्रतिवेदन प्रेषित करने के संबंध में।

प्रसंग :– विभागीय पत्रांक–1045, दि०–29.05.2024 तथा पत्रांक–1187, दि०–25.06.24

महाशय,

निदेशानुसार उपर्युक्त विषयक प्रासंगिक पत्रों का संदर्भ ग्रहण किया जाए। प्रासंगिक पत्रों द्वारा याचित प्रतिवेदन, जो माननीय NGT, New Delhi में दायर वाद O.A. No.-164/2018/PB(Earlier O.A. No.-276/2013) Ashwini Kumar Dubey V/s Union of India & Ors. में दिनांक–18.01.2024 को पारित आदेश के कार्यान्वयन एवं अद्यतन स्थिति के अनुपालन में Fly Ash के उप–08/योग/निस्तारण संबंधी कार्रवाई से संबंधित है, सम्प्रति अप्राप्त है।

प्रस्तुत मामले में दिनांक–01.10.2024 को अगली सुनवाई निर्धारित है, जिससे तीन सप्ताह पूर्व विभाग को प्रस्तुत मामले में निश्चित रूप से प्रतिशपथ पत्र दायर करना है। अतः पुनः अनुरोध है कि *दस (10) दिनों के अंदर निश्चित रूप से पारित आदेश के कार्यान्वयन एवं अद्यतन स्थिति प्रतिवेदन से विभाग को अवगत कराना सुनिश्चित किया जाए।*

कृपया इसे सर्वोच्च प्राथमिकता दी जाए।

विश्वासभाजन,

10/7/24

सरकार के उप सचिव

ज्ञापांक– 1286 राँची, दिनांक– 10.07.2024

प्रतिलिपिः– सदस्य सचिव, झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद, राँची को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित/विशेष सचिव, वन पर्यावरण एवं जलवायु परिवर्त्तन विभाग, झारखण्ड, राँची के पत्रांक–1751, दि०–09.05.2024 के क्रम में सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

10/7/24

सरकार के उप सचिव

01C

ANNEXURE-B(COLLY)

Ref – BFCL/ENV/2024/58 Date : 01.06.2024

To,
Shri Md. Mustkim Ansari
Under Secretary of Government
Department of Energy, Jharkhand

Sub :- Regarding compliance order passed by Honorable NGT, New Delhi O.A. No. – 164/2018/PB(Earlier O.A. No. – 276/2013) Ashwini Kumar Dubey V/s Union of India & Ors. On Dated 19.03.2024 and 18.01.2024.

Ref:- Your letter No.- पत्रांक–3/उ०पि०–कोर्ट केस–16/24...1045... dated 29.05.2024

Sir,

With reference to the subject matter noted above regarding utilization of fly ash this is to submit that there is no generation of fly ash from our plant because we have Waste Heat Recovery Boiler (WHRB) based captive power plant in which the flue gases generated from DRI Plant i.e., Sponge Iron Plant is diverted to Waste heat recovery boiler (WHRB) where hot gases of DRI Plant is transferred to boil the water to make steam. This produces saturated steam at a rate which can vary according to the pressure above the boiling water and produces steam or superheated steam to running boiler which in turn runs turbine and about 5 MW electricity is generated which is utilized in-house in plant operation. After heating the flue gases is passed through ESP (Electrostatic Precipitator) where dust is settled.

This waste heat recovery boiler runs on waste heat and not on coal so there is no generation of fly ash from this power plant rather WHRB is eco-friendly and does not generate any pollutants.

This is for your kind information and perusal.

Thanking you,

Yours Faithfully

Bihar Foundry & Castings Ltd. Marar Ramgarh

B.K. Gupta
GM (Environment)
For, Bihar Foundry & Casting Ltd, Ramgarh
Authorized Signatory

usha martin

USHA MARTIN LIMITED

2x10 MW CPP,TATAISILWAI,RANCHI,JHARKHAND-835103

FLY ASH GENERATION AND UTILIZATION DETAILS FOR FY 2023-24

Sl no	Name of the Thermal power Plant	State	Capacity(MW)	Coal/Lignite Consumption (Million Ton)	Total Ash Generation (T)	Total ash Utilization (T)	% Ash Utilization in 2023-24	Unutilized ash up-to 31.03.2023 (Mill Ton)	Unutilized ash up-to 31.03.2024 (Mill Ton)
1	CAPTIVE POWER PLANT(2X10 MW),USHA MARTIN LIMITED	JHARKHAND	2*10 MW	0.149	88875.54	89304.34	100.48	0.000543	0.000114

CPP (2 X 10MW)
USHAMARTIN LTD.
TATISIL WAI, RANCHI
JHARKHAND. PIN-835103

Quantity of Fly Ash Generation & Utilization in Jharkhand by SSPL (2023-2024)

Sl No.	Name of Unit	Plant Capacity (MW)	Coal Consumption on MT	Quantity of Fly ash generation (MT)		Disposal (MT)		
				Wet	Dry	Block/ Brick Mfg.	Total	Balance
1	SHAH SPONGE & POWER LTD.	08 MW	130388.309		78027.936	Jai Bhawani Stone- 3205.028 Bandna flyash Bricks-3751.614 Dev Ent. – 4520.112 Jai Guruji- 4814.730 16291.484 Captive Brick Plant- 61,736.452	78027.936	Nil

बोकारो पावर सप्लाई कम्पनी (प्रा.) लिमिटेड
(सेल एवं डी.वी.सी. का एक संयुक्त उपक्रम)
हॉल सं.–एम–01, पुराना प्रशासनिक भवन,
इस्पात भवन, बोकारो स्टील सिटी–827001
दूरभाष : 06542-223747 (का. एवं प्र.) 240380 (क्र. एवं सं.)
फैक्स : 06542-247062, 246101 (पावर प्लान्ट)

CIN : U40300DL2001PTC112074

Bokaro Power Supply Company (P) Ltd.
(A Joint Venture of SAIL & DVC)
Hall No. M-01, Old ADM Building,
Ispat Bhawan, Bokaro Steel City - 827001
Tel : 06542-223747 (P&A), 240380 (P&C)
Fax : 06542-247062, 246101 (Power Plant)

पत्रांक – BPSCL / ENV / 24-25/ 1304 दिनांक: 06.06.2024

सेवा में ,
मो० मुस्तकीम अंसारी,
उप सचिव.
ऊर्जा विभाग, झारखण्ड सरकार

विषय: माननीय NGT, New Delhi में दायर वाद O.A.No.-164/2018/PB (Earlier O.A. No.- 276/2013) Ashwini Kumar Dubey V/s Union of India & Ors. में दिनांक – 19.03.2024 एवं 18.01.2024 को पारित आदेश के अनुपालन के संबंध में.

प्रसंग : आपका पत्रांक 3 / कोर्ट केस -16/24 1045 दिनांक : 29.05.2024

महाशय ,

आपके पत्र द्वारा संबंधित जानकारी अद्यतन है .

1. **Timely installation of Air Pollution Control & Monitoring devices**
   - All boilers are equipped with ESP for control of SPM emission. The SPM emission level of the boilers are within norms.
   - On- line monitoring system for measurement of emission level has been commissioned with provision of real time data transmission to JSPCB and CPCB servers.
   - NTPC has been awarded the consultancy job for installation of FGD. The job is in progress.

2. **Timely utilization and disposal of Fly Ash**
   BPSCL has been utilizing 100% of the ash generation as per MoEFCC guidelines in various meaningful manners as follows:
   - Backfilling of low-lying areas.
   - Road construction projects of NHAI.
   - Supply of ash to local brick and cement manufacturing units.
   - Transportation of fly ash in bags through railway wagons.
   - Production of fly ash bricks inside plant premises for in-house utilization.

3. **Scientific designing of Fly Ash dykes and safety norms**
   For scientific designing and strengthening of fly ash dykes, engagement of a reputed consultancy firm is in process. After finalization of the design specifications / DPR, the work of strengthening of ash dykes will be awarded as per procedure.

4. **Steps for restoration of deteriorated environment**
   For restoration of environment in ash pond area, Bio stabilization of ash mound has been carried using Geo-textile material and Vetiver grass. This has helped in reduction of air pollution and also increases greenery in the area.

सादर,
06.06.2024
(अशोक कुमार दास)
मुख्य महाप्रबंधक (असैनिक, पर्यावरण)

Inland Power
— Imagine. Integrate. Impact.—

पत्रांक संख्या: IPL/UB/2024-25/107 दिनांक: 26.06.2024

सेवा में,
मो० मुस्तकीम अंसारी
सरकार के उप सचिव
ऊर्जा विभाग, झारखण्ड सरकार

विषय: माननीय NGT, New Delhi में दायर वाद O.A. No.- 164/2018/PB(Earlier O.A. No. 276/2013) Ashwini Kumar Dubey V/s Union of India & Ors. में दिनांक 19.03.2024 एवं 18.01.2024 को पारित आदेश के अनुपालन के सम्बन्ध में।

प्रसंग: वन, पर्यावरण एवं जलवायु परिवर्तन विभाग, झारखण्ड, राँची का पत्रांक- 1751, दिनांक 09.05.2024 एवं पत्रांक- 961, दिनांक- 14.03.2024 के आलोक में आपका पत्रांक- 3/उ०वि०-कोर्ट केस –16/24/1045 राँची, दिनांक 29/05/2024

महोदय,

उपर्युक्त विषयक प्रासंगिक पत्रों का संदर्भ के अलोक में कहना है की हमारी इकाई इनलैंड पावर लिमिटेड एक इंडिपेंडेंट पावर प्लांट है जिससे उत्पादित सम्पूर्ण बिजली झारखण्ड बिजली वितरण निगम (झारखण्ड सरकार) को लम्बे अवधि का PPA के साथ दिया जा रहा है। इस प्लांट में पर्यावरण प्रदुषण से सम्बंधित सारे उपकरण जैसे ESP, Bag Filter, water Tanker, Fixed type sprinkler इत्यादि लगाए गए है जिससे की उत्सर्जित धूलकण को रोका जाता है साथ ही साथ चिमनी से निकलने वाले धूलकण एवं गैस को मापने हेतु Online Monitoring System भी लगा हुआ है (उपकरणों की छवि एवं Online Monitoring Data का Print Copy इस पत्र के साथ संलग्न है)।

बिजली उत्पादन के प्रक्रिया में निकलने वाले अपशिष्ट Fly Ash के सम्बन्ध में कहना है की हमलोग इसका निस्तारण विभिन्न सेक्टर जैसे Cement Manufacturing Plant, Brick Manufacturing Plant, Road Construction Project में निरंतर करते है एवं

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Kolkata - 700 001

Corporate Office :
30, Chowringhee Road
3rd Floor, Flat No.-12
Kolkata - 700 016
t : +91 33 6136 6000

Plant Office :
Inland Nagar, Village - Tonagatu,
Gola Charu Ramgarh Bypass
Tonagatu - 829 110
Jharkhand, India

Ranchi Office :
C/218 Road No. 2, Ashok Nagar
Ranchi - 834 002
t : +91 651 2240532

तिमाही उपयोग एवं निस्तारण का रिपोर्ट झारखण्ड राज्य प्रदुषण नियंत्रण बोर्ड को देते है (छायाप्रति संलग्न) साथ ही साथ Ash Availability & Utilization Portal (https://coalash.cpcb.gov.in/), Government of India को हर महीने निस्तारण रिपोर्ट अपलोड करते है।

अतः विषयक एवं पारित आदेश के सन्दर्भ में कहना है की हमारे द्वारा फ्लाई ऐश का पूर्णत: निस्तारण किया जा रहा है।

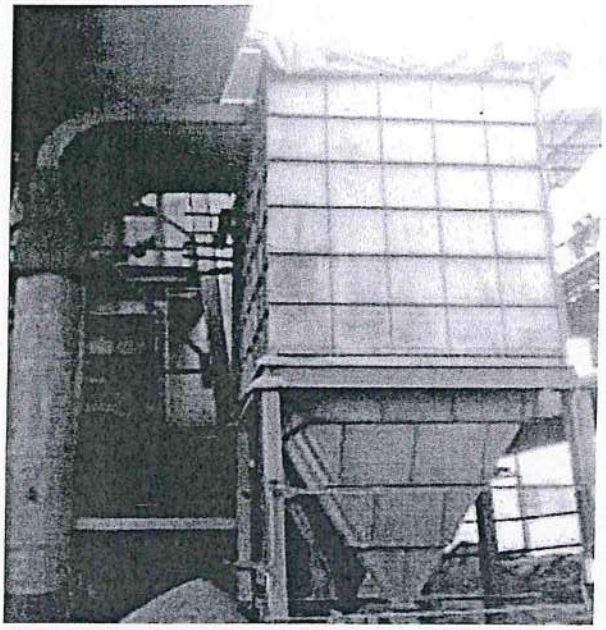
सधन्यवाद

इनलैंड पावर लिमिटेड

शैलेन्द्र नाथ सिन्हा
(DGM Coml.)

अनुलग्नक: a/a

Pollution Control Equipments



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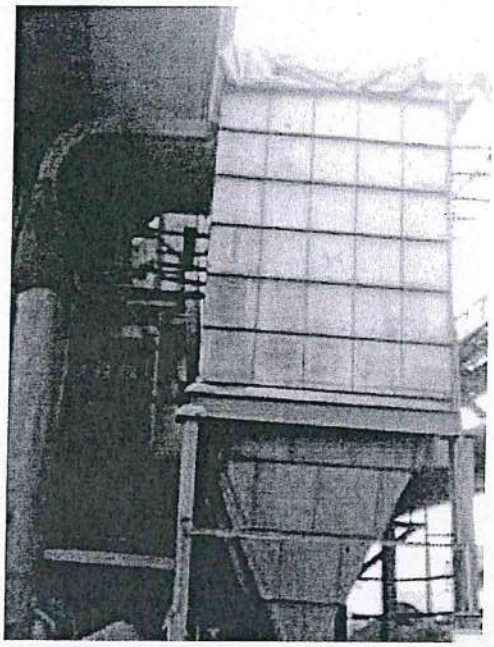

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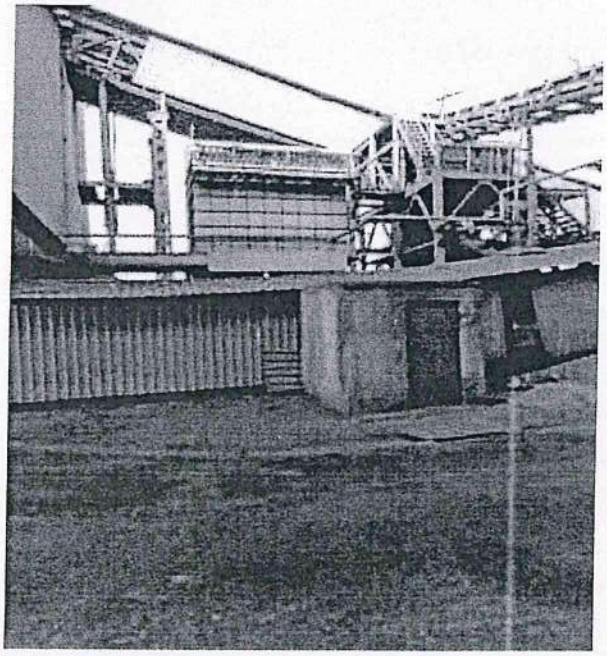

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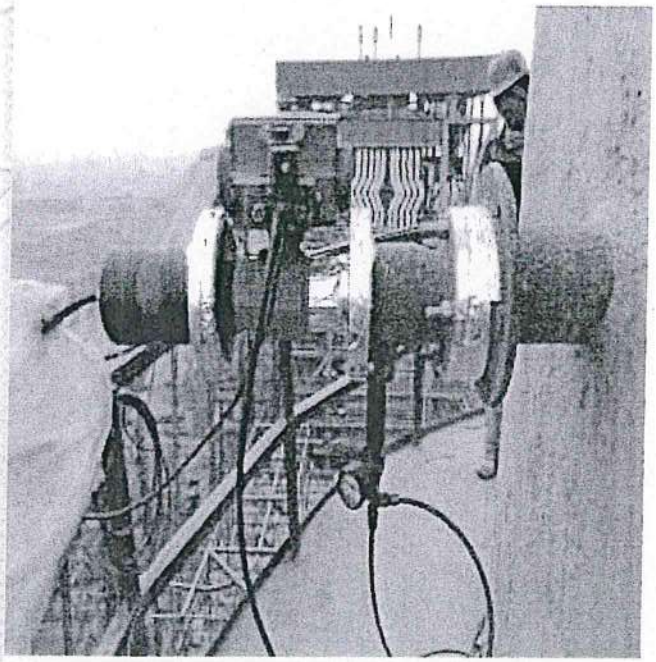
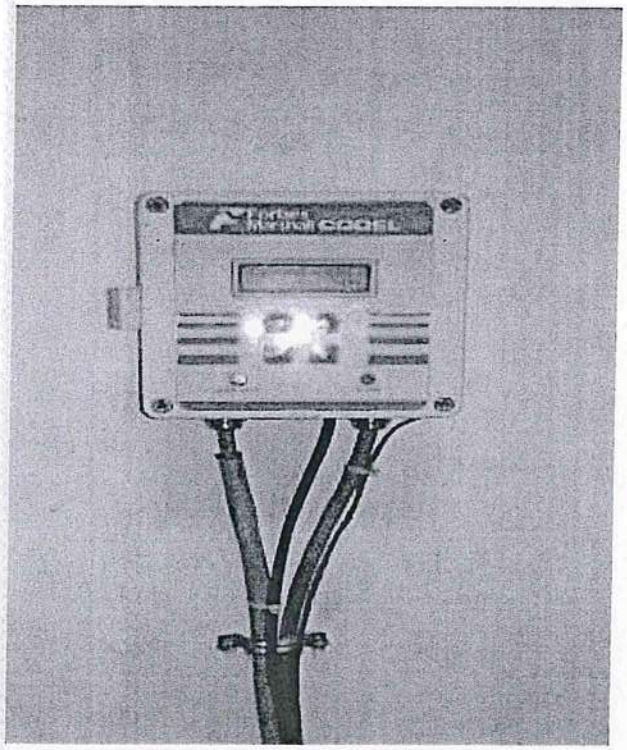
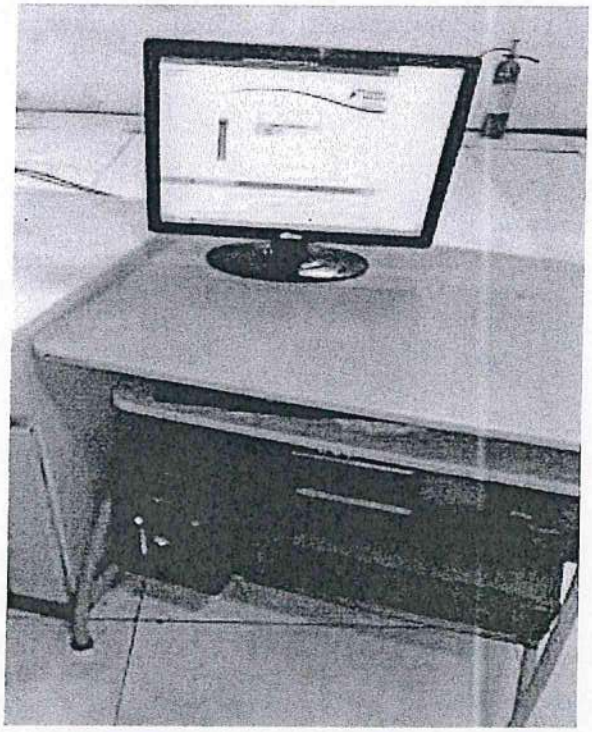
InlandPower LTD.

Online Stack Monitoring Equipments

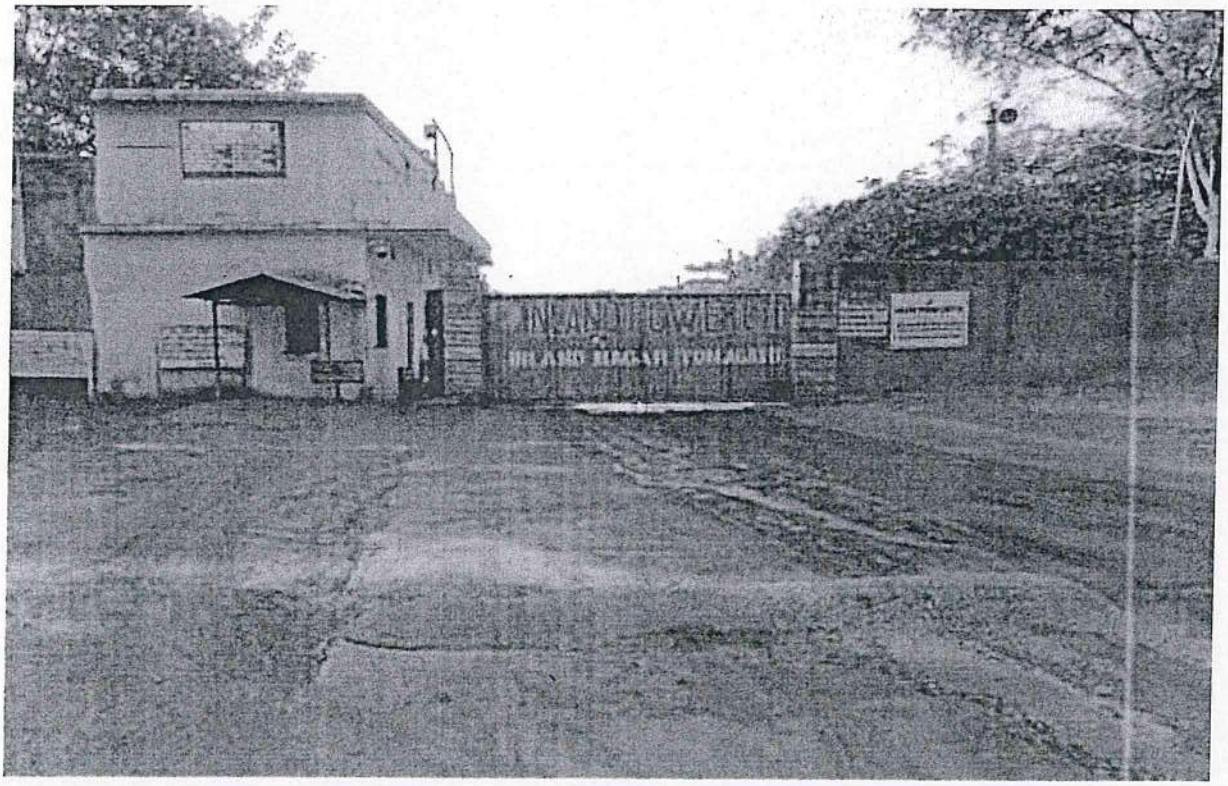






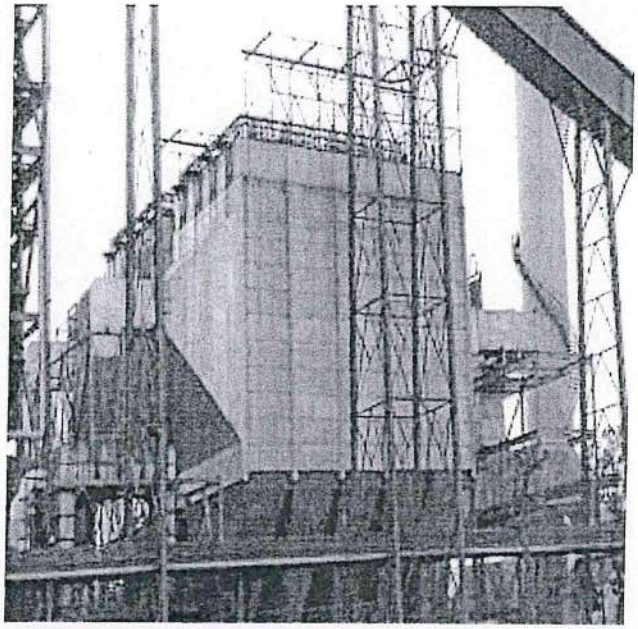
InlandPower LTD.

Display Board at Main Gate



InlandPower LTD.

Pollution Control Equipments



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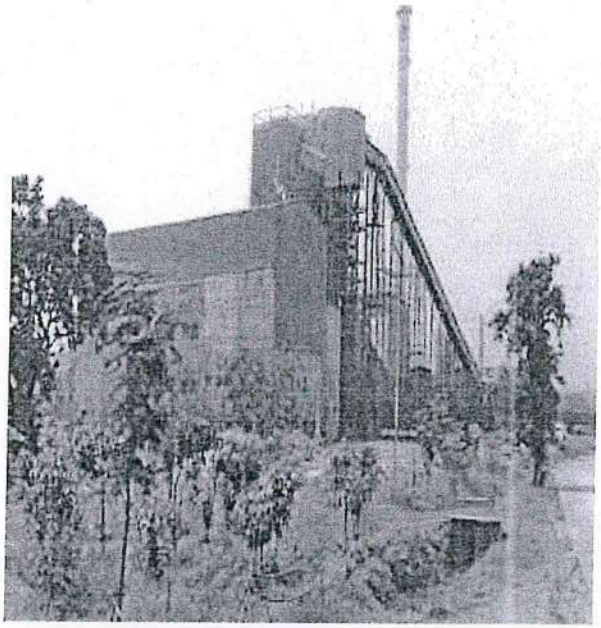

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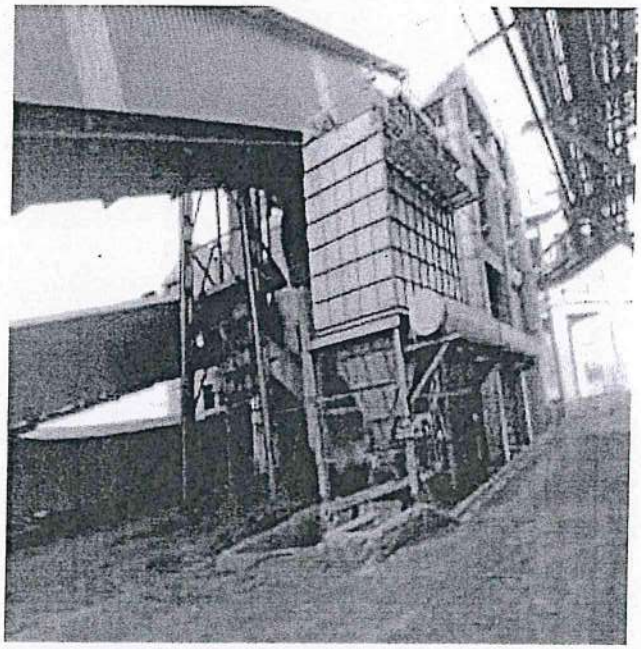

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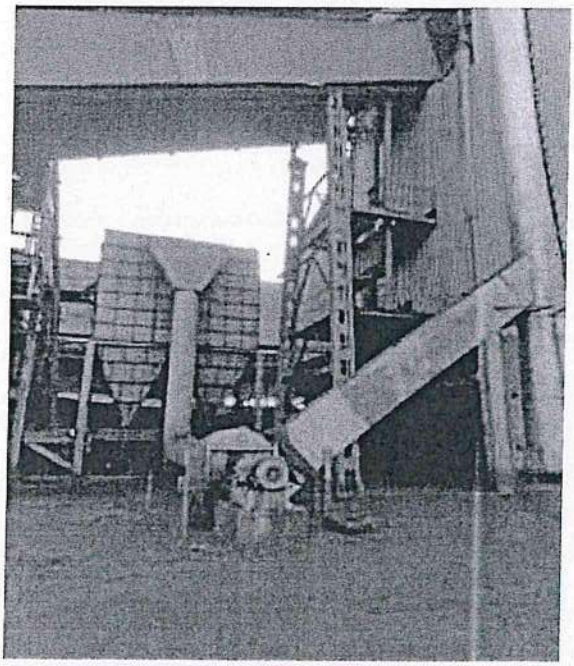

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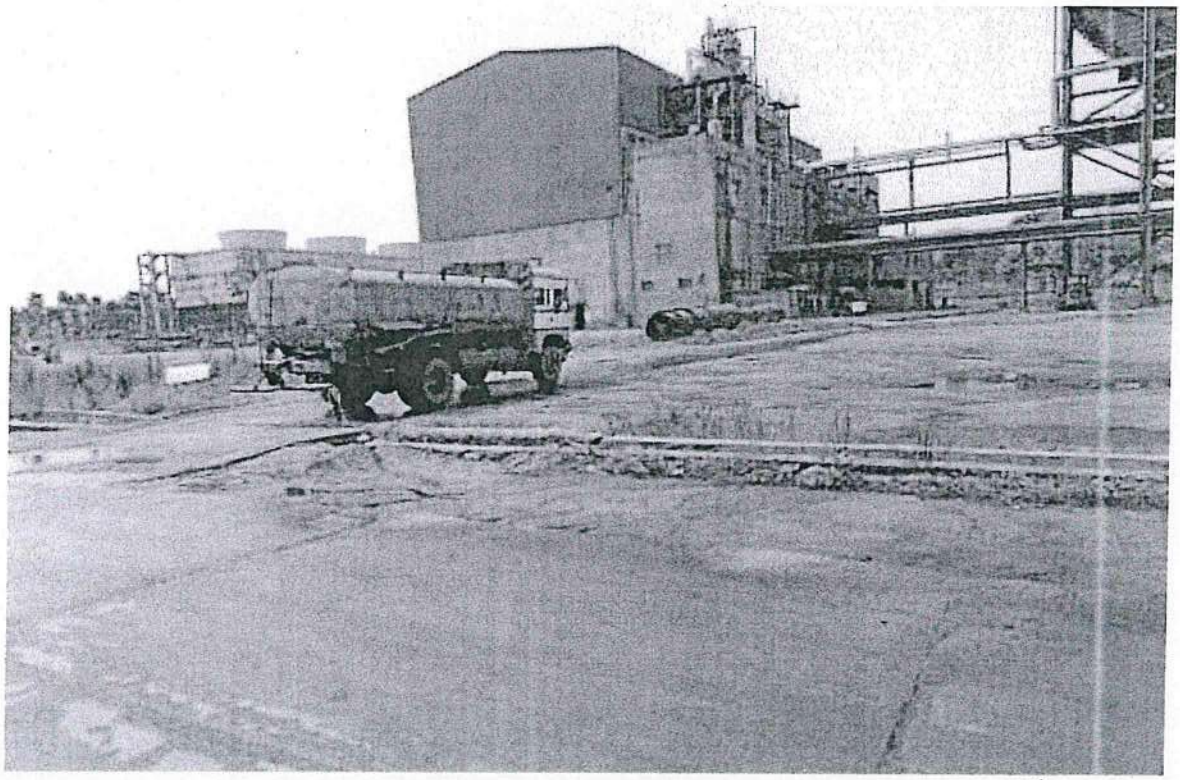
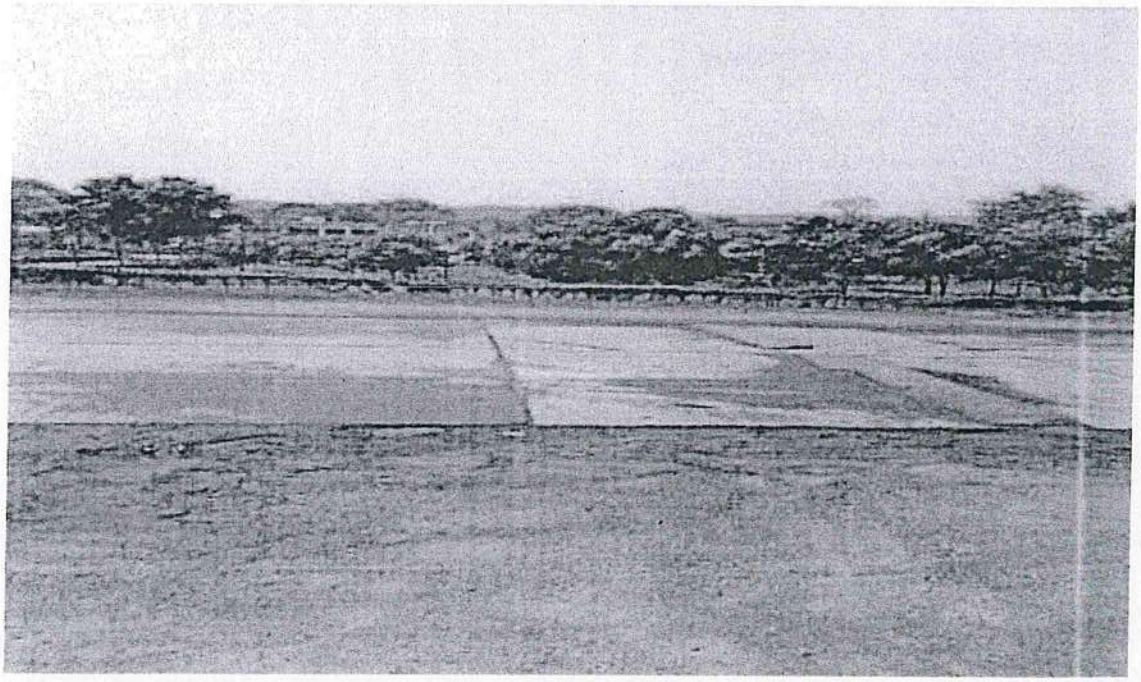
InlandPower LTD.

Water Tanker



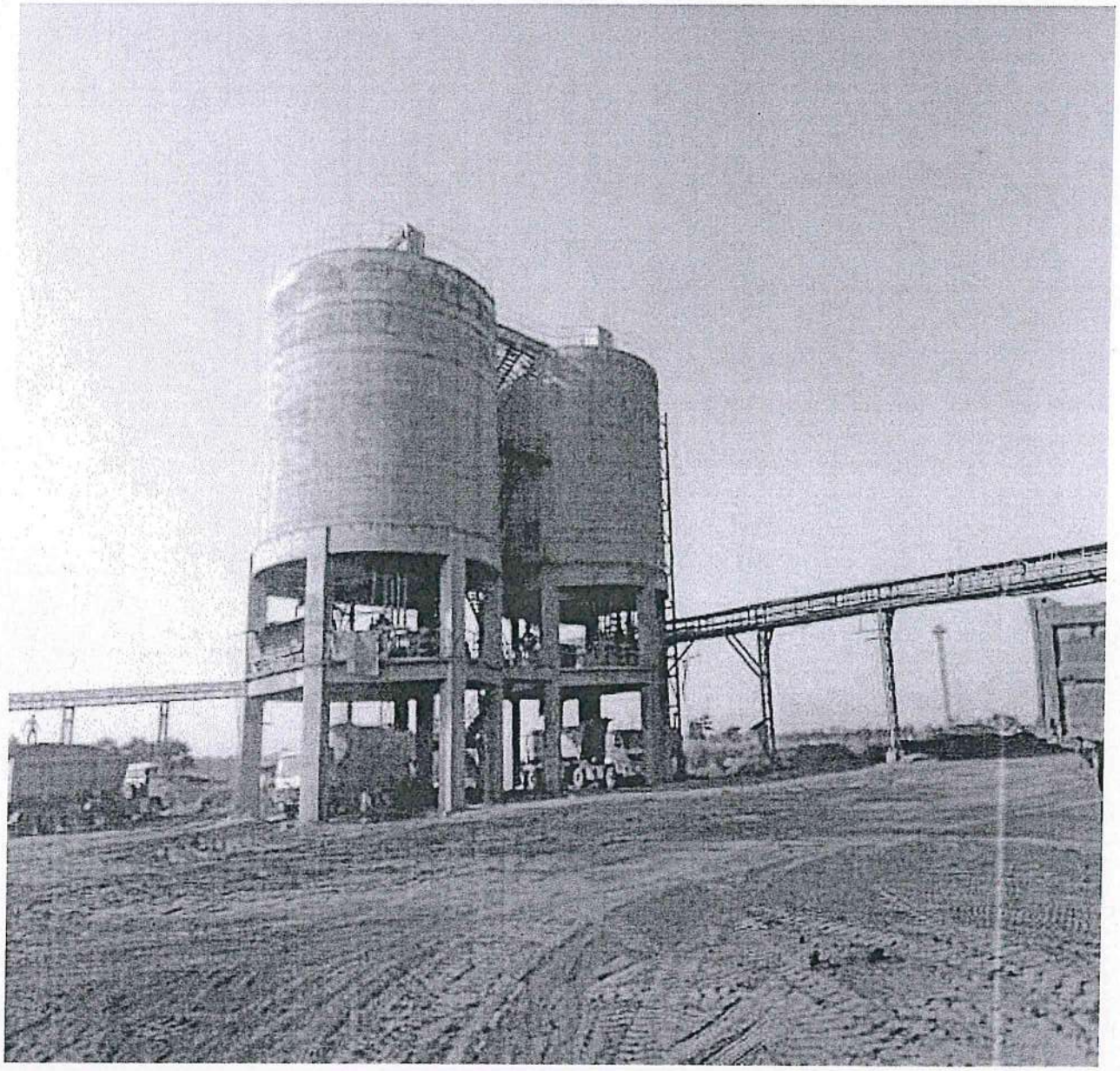
Water Tanker



Plantation

InlandPower LTD.

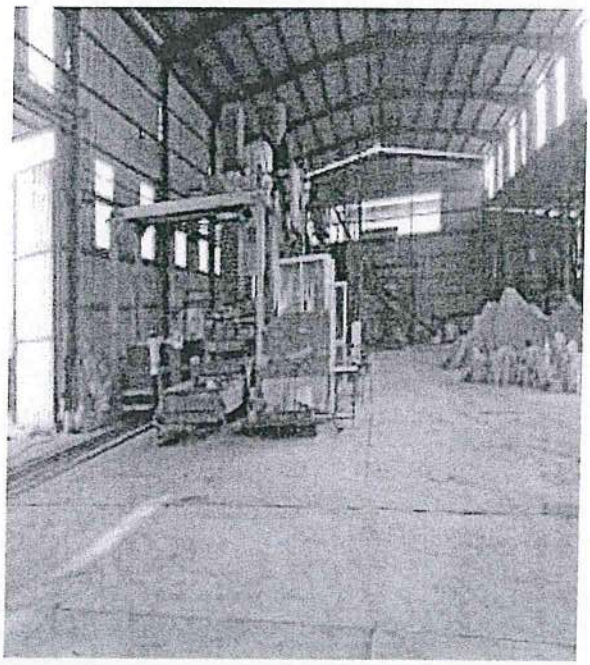
Pollution Control Equipments

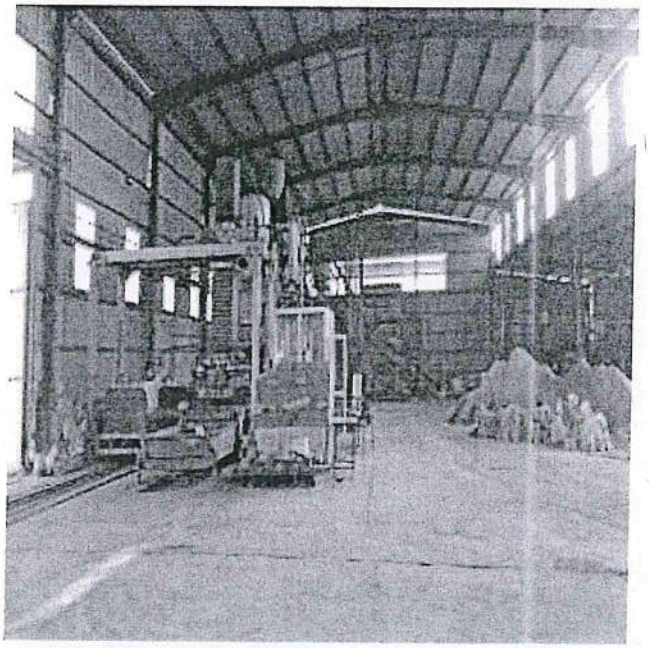


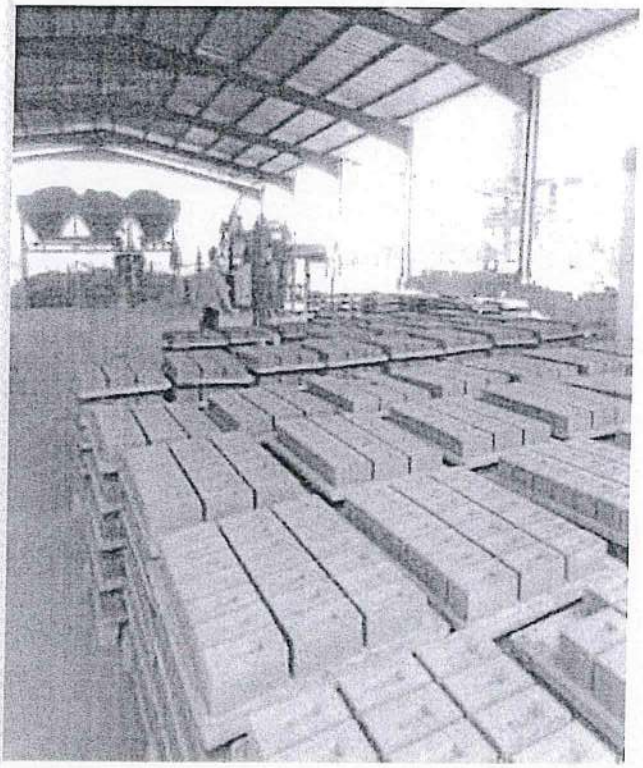
FLY ASH SILO

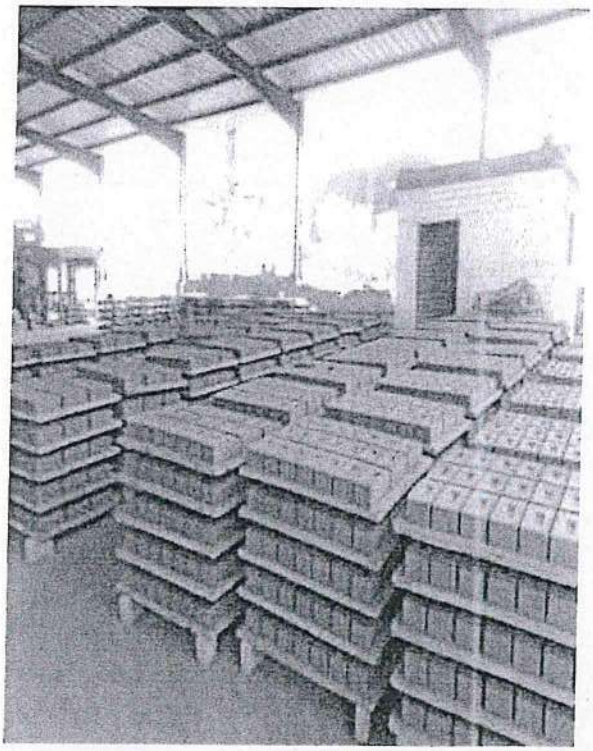
InlandPower LTD.

Fly ash brick making plant



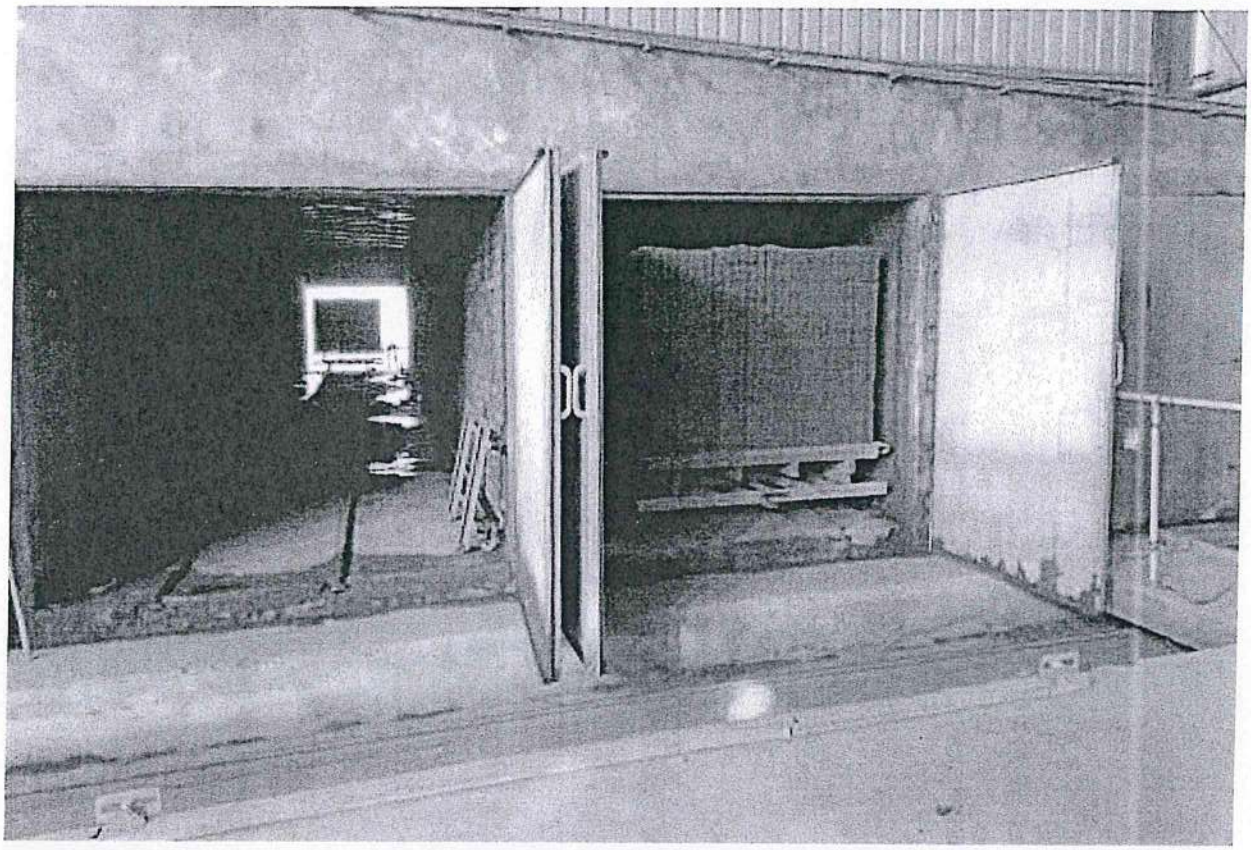


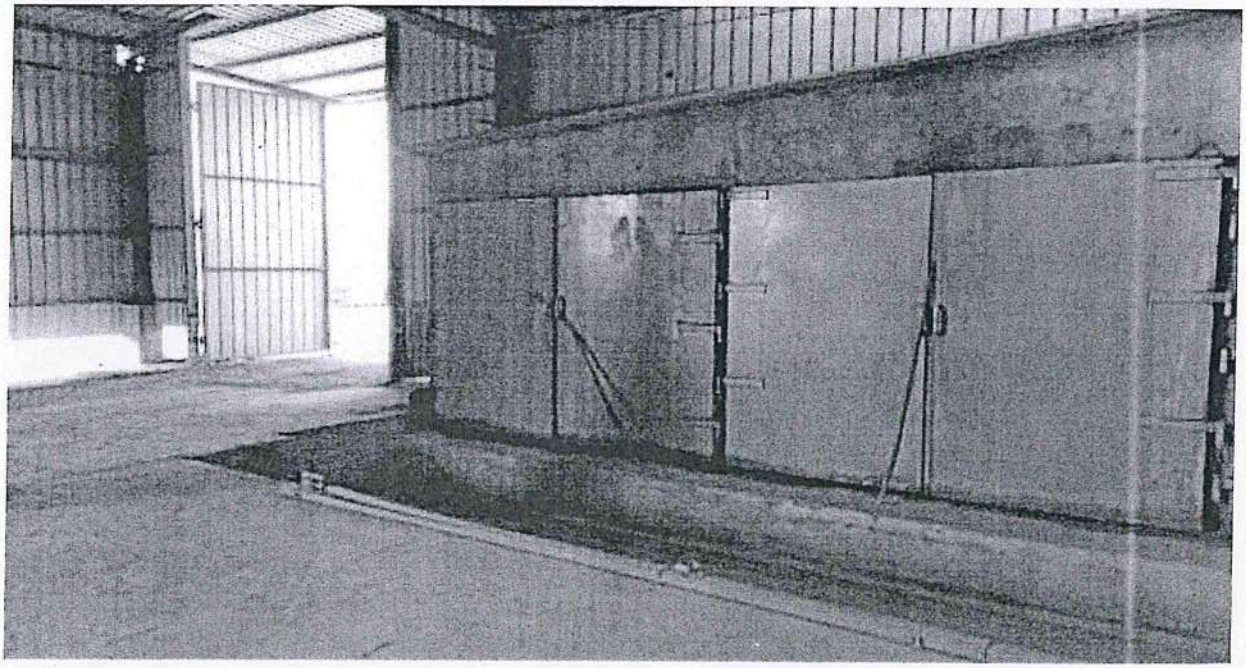




InlandPower LTD.

Steam Curing Chamber for Fly ash brick





InlandPower LTD.

Inland Power
— Imagine. Integrate. Impact.—

Ref. No. IPL/JSPCB/2024-25/14 Date: 12.04.2024

To,
The Regional Officer
Jharkhand State Pollution Control Board
Hazaribag Regional Office,
Hazaribag, Jharkhand

Sub.: Submission of details of Fly Ash Generation and Disposal for the Year 2023-24

Dear Sir,
With reference to the above, please find below month wise Ash generation and Disposal details of the FY 2023-24. It is to submit here that we are also uploading the Ash generation and Disposal reports on https://coalash.cpcb.gov.in/ by 5th of the every next month as per CPCB letter no. IPC-II/TPP/CP-11/76/2022/4030-4056 dated 13.09.2023 and RO, JSPCB letter no. 141 dated 31.01.2024.

INLAND POWER LTD, GOLA DISTT- RAMGARH
Ash Generation & Disposal Report (2023-24)

Month	Op Stock	Ash Generation	Ash Disposal					Cl Stock
			IPL Brick Plant	Cement Manufacture Plant	Bricks Manufacture Plant	Land Development	Road Project	
Apr-22	9457.45	20788	3070.32	8251.80	4469	0	7731.02	6722.88
May-22	6722.88	24422	2997.34	9733.76	4591.06	0	6812.80	7009.92
Jun-22	7009.92	25914	3790.97	11113.67	3422.22	269.20	1533.37	12794.49
Jul-22	12794.49	26218	3348.90	11114.38	2832.40	0.00	20477.81	1239.00
Aug-22	1239.00	22594	4487.71	9966.11	917.41	0.00	0.00	8461.77
Sep-22	8461.77	24268	4281.75	7515.48	902.49	0.00	16442.59	3587.46
Oct-22	3587.46	24762	2379.69	4827.04	0	0	12245.85	8896.88
Nov-22	8896.88	16612	2798.45	3422.78	0	0	15109.71	4177.94
Dec-22	4177.94	0*	3412.22	0	0	0	0	765.72
Jan-23	765.72	29011	4190.67	10999.45	0	0	12298.34	2288.26
Feb-23	2288.26	26374	3893.92	13733	3551	0	5915.69	1568.27
Mar-23	1568.27	30280	3554.78	12270.26	4619.46		8611.61	2792.16
	9457	271243	42206.72	102948.18	25305.40	269.20	107178.79	2792.16

Thanking You
For Inland Power Ltd.

S.N. Sinha
DGM (Coml)

Copy to: Member Secretary, JSPCB, Ranchi

Received
13/4/24

STATE POLLUTION CONTROL BOARD JHARKHAND RANCH

Inland Power Ltd.

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Jharkhand, India

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t : +91 651 2240532

CIN : U51909WB1993PLC059205

W : inlandpower.in | E : info@inlandpower.in

JPP/ 72 /2024
Date: 06/06/2024

Under Secretory
Energy Department
Govt. of Jharkhand

Kind Attention: Sri Mustquim Ansari

Subject: Regarding compliance of order by Honourable NGT New Delhi dated 19.03.2024 & 18.01.2024 in case no O.A.No.-164 /2018//PB (Earlier O.A No 276/2013) Ashwini Kumar Dubey V/s Union of India & Ors.

Context: Letter no 1045 dated 29.05.2024 by Energy department, Government of Jharkhand, Ranchi

Dear Sir,

We received your letter no 1045 dated 29-05-2024 on email on 31.05.2024.

We would like to inform that Jojobera Power Plant, Tata Power, Jamshedpur is coal based thermal power plant with capacity of 547.5 MW (1 X 67.5 MW + 4 X 120 MW) located in East Singhbhum Jharkhand.

The compliance status of the directions asked are as under:

A. We utilise 100% fly ash in eco-friendly way as per Fly ash notification by MOEF dated 31.12.2021 and amendment dated 30.12. 2022.

   There is no Legacy ash in Jojobera Power Plant, Tata Power, Jamshedpur.

   The Annual Compliance audit for ash generation and utilisation was conducted by CPCB authorised auditors from IIT Kharagpur and the report was submitted to CPCB and JSPCB. (Copy of report attached).

B. We have conducted the Ash Pond/Dyke Certification audit on its safety, environmental pollution, available volume, mode of disposal, water consumption or conservation in disposal, ash water recycling and green belt by auditors from IIT Kharagpur as per Fly ash notification by MOEF dated 31.12.2021 and amendment dated 30.12. 2022 and the report was submitted to CPCB, CEA and JSPCB.

C. We have installed AWRS (Ash water recycling system) and all the water used in carrying the ash to ash pond is recycled and reused. There is no discharge from ash pond.

TATA POWER
The Tata Power Company Limited
Jojobera Power Plant, Jamshedpur - 831016
Tel 91 657 2276879, 6511543
Registered Office Bombay House 24 Homi Mody Street Mumbai 400 001

D. We have installed air pollution control devices like Electrostatic Precipitators in all units before start of plant and it remains in operation round the clock. We have also installed CAAQMS and OCEMS in our plant and the real time data connectivity with CPCB and SPCB is in place.

E. We have installed ETP and STP and Zero liquid discharge has been achieved.

F. We have completed 80.11 % of construction work of FGD (Flue gas Desulphurisation) in our plant as on March 2024 and it will get commissioned before the timeline of 31 Dec 2026.

Thanking you,

Yours' faithfully

Jagmit Singh Sidhu
CEO-IEL& Chief-Jamshedpur Operations

CC: Member Secretary, Jharkhand State Pollution Control Board, T. A. Division Building HEC, Dhurwa Ranchi -834004

Regional Officer, Jharkhand State Pollution Control Board, MB 15, New Housing Colony, Adityapur , Jamshedpur -13

TATA POWER
The Tata Power Company Limited
Jojobera Power Plant, Jamshedpur - 831016
Tel 91 657 2276879, 6511543
Registered Office Bombay House 24 Homi Mody Street Mumbai 400 001

REPORT ON

Annual Compliance Audit on Ash Generation, Utilization and Disposal of Jojobera Power Plant, Jamshedpur, Jharkhand

(For Year 2022-23)

Submitted to:

Central Pollution Control Board, Delhi

and

Jharkhand State Pollution Control Board

Prepared by

Department of Mining Engineering

Indian Institute of Technology Kharagpur

November 2023

भारतीय प्रौद्योगिकी संस्थान खड़गपुर
INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

CERTIFICATE

Certify that the Annual Compliance Audit on Ash Generation, Utilization and Disposal for Jojobera Power Plant, Jamshedpur, Jharkhand for the year 2022-2023 has been prepared by Prof. B.K. Prusty, CPCB authorised auditor of Department of Mining Engineering, IIT Kharagpur, after the site inspection, and verification of the records, documents and reports.

(Dr. Basanta Kumar Prusty)
Associate Professor,
Department of Mining Engineering
Indian Institute of Technology- Kharagpur

TABLE OF CONTENTS

1. Preamble and Purpose of the Study

M/s. Tata Power vide Work Order Ref No: 6000068244 dated: 09/08/2023 to Indian Institute of Technology (IIT), Kharagpur has awarded a technical work to conduct "*Annual Compliance Audit on Ash Generation, Utilization and Disposal of Jojobera Thermal Plant, Jamshedpur, Jharkhand for the year 2022-2023*". Prof. B.K. Prusty, CPCB nominated auditor and Prof. K. Dey, Associate Professor from the Department of Mining Engineering, Indian Institute of Technology Kharagpur undertook the above study of "Annual Compliance Audit on Ash Generation, Utilisation and Disposal of Jojobera Power Plant" as per Notification S.O. 5481 (E) dated 31.12.2021 published by the Ministry of Environment, Forest and Climate Change (MoEFCC), Govt. of India. This audit report will be submitted to Central Pollution Control Board (CPCB) and Jharkhand State Pollution Control Board (JSPCB). This audit is intended to study and validate data on Fly Ash generation and utilization compliance report by Jojobera Thermal Plant of M/s Tata Power for the year 2022-2023.

2.0. Introduction about the Power Station

The Jojobera Power Plant (JPP) is located at Jojobera, near Jamshedpur in the East Singhbhum district in the state of Jharkhand. This plant belongs to M/s Tata Power Company which started its operations at Jojobera after acquisition of 67.5 MW coal based captive power unit of Tata Steel in April 1997. Subsequently four units of 120 MW were installed to meet the increasing demand of Tata Steel. The current installed capacity of the Jojobera plant is 547.5 MW.

2.1. Ash handling in the Jojobera Power Plant

Two types of ash i.e. fly ash and bottom ash are generated in the JPP. Dry fly ash is collected from the ESP and taken to the silos pneumatically wherefrom it is suppied to various end users. Fly ash constitutes about 80% of the total ash generated. The JPP has 5 nos. of silo with a total capacity of 2860 MT for handling dry fly ash. Dry fly ash is collected in silos and part of it is pneumatically transferred to Nuvoco Vistas cement plant which shares common boundary with Jojobera Power Plant. Rest of the fly ash is utilized in nearby

cements plants, ready mix concrete and brick plants. The dry ash is transported pneumatically through closed bulkers, covered Hyva and rail. The unused dry fly ash of silo is transferred to ash pond hydraulically.

The bottom ash which is collected from the bottom of the boiler along with water is carried to the ash pond. The bottom ash constitutes about 20% of the total ash generated. There are two ash ponds. Total ash pond area amounted to 7.5 hectare. The pond ash is weighed and supplied to users such as NHAI for reclamation of low-lying area and other uses. An Ash water recycling system (AWRS) has been installed at JPP. The ash water is collected in a well and pumped back to the plant for ash conveying in a cyclic manner.

3.0. Scope of the Audit Work

The scope of the Audit work as per para E(5) of the Ash Notification of 31.12.2021 involves the following activities:

a) Verification of coal consumption data of Jojobera Power Plant for the year 2022-23.
b) Verification of ash generation data of Jojobera Power Plant for the year 2022-23
c) Verification of fly ash and bottom ash utilization data of Jojobera Power Plant for the year 2022-23.
d) Verification of net ash disposal into ash ponds of Jojobera Power Plant for the year 2022-23.
e) Assessment of total ash storage in operational and un-operational ash ponds and available storage capacity for further disposal at the end of financial year 2022-23 for Jojobera Power Plant.
f) Assessment of ash slurry disposal and ash-water re-circulation system used in Jojobera Power Plant.

4.0. Methodology Adopted for Auditing

The methodology adopted for the conducting the fly ash generation, utilization and disposal auditing consisted of three steps: a) Visit of the plant and sites; b) Discussion

with plant officials for collection of relevant data and verification of the records at plant site as well as at IIT Kharagpur; c) Preparation of the ash audit report.

A site visit was made on 5th October 2023 to Jojobera Power Plant by the IIT Kharagpur Audit Team. The IIT Kharagpur Audit team consisted of Prof. B.K. Prusty and Prof. K. Dey, both Associate Professors in the Department of Mining Engineering. The audit team visited various sites such as silos, fly ash pond, wagon tippler, coal storage areas. During the audit, active interactions were held with Plant top management, and officials working with those who are dealing with the generation and utilization of ash.

4.1 Document Verification

During the audit, the following important documents were verified.

1) Records of coal consumption for the period from April-2022 to March-2023.
2) Records of monthly fly ash and bottom ash generation & utilization for the period from April-2022 to March-2023.
3) Log books showing the quantity of fly ash transported per day/per month, number of trips, entry, and exit of the vehicle, etc.
4) Documents related to fly ash utilization in diverse sectors.
5) Layouts, diagrams, maps, photographs, etc.
6) Documents/measurements related to slurry ash disposal, water use, recirculation of water.

5.0. Audit Findings

The ash compliance report of the Jojobera Power Plant for year 2022-23 has been given as Annexure 1. The source/ reference/file number of the data are given in the Annexure 1.

- In the year 2022-23, a total of 25,36,847 Metric Ton (MT) of coal with average ash content of 41.17 % was consumed in the Jojobera Power Plant.

- In the year 2022-23, the total ash generation was 10,44,334 MT out of which fly ash accounted for 8,35,467 MT and bottom ash accounted for 2,08,867 MT.
- In the year 2022-23, a total of 10,44,940 MT of ash was utilized out of which fly ash was 5,98,528 MT and 4,46,412 MT was pond ash (bottom ash + unutilized fly ash). The ash utilization amounted to slightly more than 100 % of the total ash generated in the same year.
- The fly ash was mostly used in manufacturing of cement, ready mix concrete, and filling up of low lying areas.
- A total of 2,08,867 MT of bottom ash was generated in this year. However, a total of 4,46,412 MT of pond ash (bottom ash + unutilized fly ash) was utilized during the same period. The additional amount 237,545 MT of utilized pond ash was taken from the ash pond.
- The pond ash was mostly used for construction of roads, embankments and filling up of low lying areas.
- A total of 4,46,412 MT of ash was disposed in the 2 ash ponds.
- The ash ponds will be able to serve the power station till its life provided regular evacuation of pond ash is done.
- A total of 31,98,170 m^3 of water was used in the year 2022-23 to transport bottom ash in slurry form to ash pond. Ash water recycling system has been installed in JPP and the water is recycled.

6.0. Acknowledgements

The audit team extends its appreciation to officials and staffs of the Jojobera Power Plant who provided verbal, and documentary assistance during the technical audit.

ANNEXURE - 1

Annual Compliance Audit of Ash Generation and Utilization

(In compliance to the Gazette notification S.O. 5481(E) dated 31 th December, 2021 and subsequent amendment notification 6169 (E) dated 30 December 2022)

Ash Compliance Report (for the period 1st April'2022 - 31st March'2023) to be submitted on or before 30th Nov			Remarks
1	Name of Power Plant	Jojobera Power Plant	
2	Name of the company	Tata Power Company Limited	
3	District	East Singhbhum.	
4	State	Jharkhand	
5	Postal address for communication:	Jojobera Power Plant, Tata Power Company Limited, PO- Rahargora, Jamshedpur - 831016	
6	E mail:	bhansdah@tatapower.com	
7	Power Plant installed capacity (MW):	547.5 MW (1 X 67.5 MW + 4 X 120 MW)	
8	Plant Load Factor (PLF):	80.54 % (Unit-1 to4) and 83.81% for U#5	
9	No. of units generated (MWh):	3897268.54	
10	Total area under power plant (ha): (including area under ash ponds)	66.77 + 7.5 = 74.27 ha	
11	Quantity of coal consumption during reporting period (Metric Tons per Annum):	2536846.98	Record No- TPCL/JOJO/MIS/IMS/R021.

12	Average ash content in percentage (per cent):	41.17	Record No-TPCL/JOJO/MIS/IMS/R021 (3rd party NABL lab data)
13	Quantity of current ash generation during reporting period (Metric Tons per Annum):	1044334	Doc No-TPCL-Unit(1-4)/JOJO/AM/IMS-QEO/D022
	Fly ash (Metric Tons per Annum):	835467	Fly Ash /Bottom ash calculated in 80:20 ratio.
	Bottom ash (Metric Tons per Annum):	208867	Fly Ash /Bottom ash calculated in 80:20 ratio.
14	Capacity of dry fly ash storage silo(s) (Metric Tons) :	2860 MT (U#1: 460MT and U#2/3/4/5: 600 MT each).	
15	Details of utilization of current ash generated during reporting period		
	(a)Total quantity of current ash utilized (MTPA) during reporting period:	1044940	Doc No-TPCL-Unit(1-4)/JOJO/AM/IMS-QEO/D022
	(b) Quantity of (Dry) fly ash utilized (MTPA):Avenue wise break up (separately for Fly Ash and Bottom Ash):	598528	
	(i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels)	3117	Doc No-TPCL-Unit(1-4)/JOJO/AM/IMS-QEO/D022
	(ii) Cement manufacturing:	528493	Doc No-TPCL-Unit(1-4)/JOJO/AM/IMS-QEO/D022

	(iii) Ready mix concrete:	66918	Doc No-TPCL Unit (1-4)/JOJO/AM/IMS-QEO/D022
	(iv) Ash and Geo-polymer based construction material:		
	(v) Manufacturing of sintered or cold bonded ash aggregate:		
	(vi) Construction of roads, road and fly over embankment:		
	(vii) Construction of dams:		
	(viii) Filling up of low lying area:		
	(ix) Filling of mine voids:		
	(x) Use in overburden dumps:		
	(xi) Agriculture:		
	(xii) Construction of shoreline protection structures in coastal districts;		
	(xiii) Export of ash to other countries:		
	(xiv) Others (please specify):	Part of Fly Ash not utilized in dry form is sent to ash pond and counted as Pond ash.	236939
	(c) Quantity of Bottom/ Pond ash utilised (MTPA):	446412	DEPOSITED =236939 + 208867 = 445806
	(I) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or		

	pipes or boards or panels):	----	
	(ii) Cement manufacturing:	----	
	(iii) Ready mix concrete:	----	
	(iv) Ash and Geo-polymer based construction material:	----	
	(v) Manufacturing of sintered or cold bonded ash aggregate:	----	
	(vi) Construction of roads, road and flyover embankment:	47302	Doc No-TPCL-Unit(1-4)/JOJO/AM/IMS-QEO/D022
	(vii) Construction of dams:	----	
	(viii) Filling up of low lying area:	399110	Doc No-TPCL-Unit(1-4)/JOJO/AM/IMS-QEO/D022
	(ix) Filling of mine voids:	----	
	(x) Use in overburden dumps:	----	
	(xi) Agriculture:	----	
	(xii) Construction of shoreline protection structures in coastal districts:	----	
	(xiii) Export of ash to other countries:	----	
	(xiv) Others (please specify), if recommended by the committee and added	----	

	in notification as per para A(3):	---	
	Total quantity of current ash unutilised (MTPA) during reporting period:	NIL	
	(i) Current unutilized fly ash:	NIL	
	(ii) Current unutilized bottom:	NIL	
	Total cumulative quantity of current ash unutilized (MT) after 31.03.2022 as on 31 March:	NIL	
16	Percentage utilisation of current ash generated during reporting period (per cent):	100.06% (Note: Ash Utilization in FY22-23 is 100.06% on account of Operational ash (- 606) MT has been utilized in FY23).	
17	Details of disposal of ash in ash ponds		
	(a) Total quantity of ash disposed in ash pond(s) (Metric Tons) as on 31st March (excluding reporting period):	436853	This is the opening stock as on 31.03.2022; Reference previous audit report/official communication.
	(b) Quantity of ash disposed in ash pond(s) during reporting period (Metric Tons):	445806	
	(c) Total quantity of water consumption for slurry discharge into ash ponds during reporting period (m3):	3198170	calculated as per flow rate of slurry discharge pump with running hrs as recorded by operation dept.

	(d) Total number of ash ponds:	2		
	(i) Active:	2		
	(ii) Exhausted (yet to be reclaimed):	Not Applicable		
	(iii) Reclaimed:	Not Applicable		
	(e) total area under ash ponds (ha):	7.5 ha		
18	Individual ash pond details:			
	Ash pond-1,2, etc (please provide below mentioned details separately, if number of ash ponds is more than one)	Ash Pond-1	Ash Pond-2	
	(a) Status: Under construction or Active or Exhausted or Reclaimed	Active	Active	
	(b) Date of start of ash disposal in ash pond (DD/MM/YYYY or MMYYYY):	More than 20 years	More than 20 years	
	(c) Date of stoppage of ash disposal in ash pond after completing its capacity (DD/MM/YYYY or MM/YYYY): (Not applicable for active ash ponds)	Not Applicable	Not Applicable	
	(d) area (hectares):	3.701448	2.237961	
	(e) dyke height (m):	9	9	
	(f) volume (m3):	333130.28	201416.46	

	(g) quantity of ash disposed as on 31st March (Metric Tons): FY22-23	436247 MT of ash is deposited as on 31/03/2023 combining two ponds		
	(h) available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons):	We have two active ash ponds and one is under filling and another is in evacuation process.This cycle continues.		
	(i) expected life of ash pond (number of years and months):	According to previous stability test, the pond is healthy for normal operation.	According to previous stability test, the pond is healthy for normal operation.	
	(j) co-ordinates (Lat and Long): (please specify minimum 4 co-ordinates)	Latitude: 22.762535, Longitude:86.226450	Latitude: 22.762680, Longitude:86.224328	
	(k) type of lining carried in ash pond: HDPE lining or LDPE lining or clay lining or No lining	Geomembrane liner laid below and over 150 mm thick compacted sand with toping 75 mm thick brick lining.	Geomembrane liner laid below and over 150 mm thick compacted sand with toping 75 mm thick brick lining.	
	(l) mode of disposal: Dry disposal or wet slurry (In case of wet slurry please specify whether HCSD or MCSD or LCSD)	WET(LCSD)	WET(LCSD)	
	(m) Ratio of ash: water in slurry mix (1: .....):	6:01	6:01	
	(n) Ash water recycling system (AWRS) installed and functioning: Yes or No	Yes	Yes	
	(o) Quantity of wastewater from ash pond discharged into	0	0	

	land or water body (m3):			
	(p) Last date when the dyke stability study was conducted and name of the organisation who conducted the study:	Date of last stability test conducted on 20-06-2019 M/s Geocon International Pvt. Ltd.	Date of last stability test conducted on 20-06-2019 M/s Geocon International Pvt. Ltd.	
	(q) Last date when the audit was conducted and name of the organisation who conducted the audit:	15/01/2023 /Mr J S Kamyotra	15/01/2023 /Mr J S Kamyotra	
19	Quantity of legacy ash utilised (MTPA):	Not Applicable. There is no Legacy Ash at Jojobera Power Plant .We have two active ash pond only . One remains in filling mode and another in evacuation mode and this cycle continues. In a year almost 3-4 times ash pond fills and gets evacuated.		
	i. Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels):	----		
	ii. Cement manufacturing:	----		
	iii. Ready mix concrete:	----		
	iv. Ash and Geo-polymer based construction material:	----		
	v. Manufacturing of sintered or cold bonded ash aggregate:	----		

	vi. Construction of roads, road and flyover embankment:	----	
	vii. Construction of dams:	----	
	viii. Filling up of low lying area:	----	
	ix. Filling of mine voids:	----	
	x. Use in overburden dumps:	----	
	xi. Agriculture:	----	
	xii. Construction of shoreline protection structures in coastal districts;	----	
	xiii. Export of ash to other countries:	----	
	xiv. Others (please specify):if recommended by the Committee and added in notification as per para A(3):	----	
	Total cumulative quantity of legacy ash utilized (MT) after 31.03.2022 as on 31 March :	NIL	
	Total (depleted) quantity of legacy ash	Nil	

	stored (MT) as on 31 March :				
20	Summary:				
	Details	Quantity generated (MTP)	Quantity utilised (MTP) and (per cent)	Balance quantity (MTP)	
	Current ash during reporting period	1044334	1044940 (100.06%)	436247	As per new format: current balance: NIL, cumulative balance = Opening stock + generation - utilised
	Legacy ash	0	0	0	
	Total	1044334	1044940	436247	As per new format: current balance: NIL, cumulative balance = Opening stock + generation - utilised
21	Any other information: Soft copy of the annual compliance report, and shape files of power plant and ash ponds may be e-mailed to:- moefcccoalash@gov.in	There is no Legacy ash at Jojobera Power Plant .We have two active ash pond only . One remains in filling mode and another in evacuation mode and this cycle continues. In a year almost 3-4 times ash pond fills and gets evacuated. (Note: Ash Utilization in FY22-23 is 100.06% on account of Operational Ash (- 606) MT has been utilized in FY23).			
22	Signature of Authorised Signatory	B Hansdah Chief O & M – Jam[illegible]pur Operation			

दामोदर घाटी निगम
कोडरमा ताप विद्युत केन्द्र
डाकघर – के0टी0पी0एस0, बांझेडीह
जिला– कोडरमा
पिन नं0– 825421, झारखण्ड

DAMODAR VALLEY CORPORATION
KODERMA THERMAL POWER STATION
POST OFFICE- KTPS, BANJHEDIH,
DIST.- KODERMA
PIN- 825421, JHARKHAND.

No: KT/SGM & HOP/EMPC/ 172 Dated: 07/08/2024

To,
Md. Mustaqeem Ansari
Dy Secretary (Govt of Jharkhand)

Sub-Reply against your letter vide no-1236 dated-10/07/2024
Ref: -1) Letter-1045 dated-29.05.2024 & letter -1187 dt:25.06.24
2)letter -no-1286 dt:10-07-2024

Dear Sir,
This has reference to your letter under ref (1). DVC KTPS is Complying the order of NGT. Details of compliance along with annexures of all relevant points are being furnished below

1.Fly ash Utilization:
1(a) FLY Ash utilization at KTPS is being maintained above 100%. Year wise ash utilization is as below
Ash utilization. 2022-23: 128.63%
Ash utilization.2023-24:122.46 %

Fly ash is being utilized by cement, brick/block manufacturing company & more than 4LMT of fly ash from KTPS is being utilized by these industries on annual basis. We have adequate no of MOUs with NHAI, and total quantity of MOU is 58 LMT for two years (up to 2026). Stone Quarry (abandoned) with available space of 30 LMT is also available for ash dumping. Overall, we have total 92 LMT of space available for fly ash utilization. Details LOA &MOUS attached at annexure 1

1(b) Annual Ash audit also has been conducted by professor S.P. Singh of NIT Rourkela and the report will be submitted shortly.

1(c)Ash Dyke Safety Audit: All safety norms are being followed during operation and maintenance of Ash Dyke. Safety audit of Ash Dyke has also been carried out by NIT Rourkela and report is awaited.

2. Online Monitoring System:
- CAAQMS (Continuous Ambient Air Quality Monitoring System): Presently one CAAQMS is in installed condition and transmitting data to CPCB & JSPCB. Another 3 nos. of CAAQMS will be installed within this year.
- OCEMS (Online Continuous Emission Monitoring System) is in service in KTPS and transmitting data to CPCB & JSPCB
- EQMS (Effluent Quality Monitoring System is in service in KTPS and transmitting data to CPCB & JSPCB

3. Public health Camps including water supply:
Public health camps are being organized regularly and water supply is being done also at nearby villages. The details are attached with the annexure-II.

4.CEPI Score:
Koderma does not fall under severely or critically polluted area. However, to improve the overall environmental parameter, KTPS has taken several steps as enumerated below.

1. **Plantation**: KTPS has developed green belt on an area of 107Ha inside KTPS project including ash pond area. Along with the same 7.15 KM of avenue plantation and 1 Ha of fruit orchid has also been developed. Augmenting its plantation drive, DVC has signed MOU with Institute of Forest Productivity (IFP) Ranchi (under MOEF&CC) for 3.6 Ha Land around Ash Pond for developing Green Belt and the work is going on. Further, KTPS is in talk with IFP Ranchi for developing massive plantation on an area of 148 Ha which will cover 1) Peripheral area of KTPS project, 2) The approaching road to the ash pond from KTPS Plant, 3) 4-Lane road to Chandwara (on divider area) and 4) Ash pond area. In house plantation is also going on at KTPS and around 4000 nos. of trees planted during the monsoon season till date and further plantation is also in progress.

2. **Road**: Regular water sprinkling through mobile water tankers is being done at ash transportation road. One no. mobile fog cannon has also been deployed for water mist spraying at ash transportation load and nearby villages. One more no. of Fog cannon will be deployed for water mist spraying around ash pond and work order for the same already issued and mobilization in progress.

3. **FGD:** Unit#1 FGD system was commissioned on 02.07.2024 and Unit#2 will be commissioned within next three months.
After installation of FGD Sox level is maintaining well below the limit (Maintained around 20-30 mg/Nm3 while the limit is 200 mg/Nm3).

4.DeNOx: De-NOx system has been installed in both units of KTPS and NOx and NOx level is maintaining around 250-350 mg/Nm3 while the limit is 450 mg/Nm3.

5. ESP: ESP with 99.97% efficiency is in service for each unit and the SPM level is maintained well below the statuary limit (50 mg/Nm3) around 25 mg/Nm3.

6. Sprinkling at Vulnerable area CHP, Ash Silo, Ash Pond are:
Sprinkling for dust suppression in CHP, Ash Silo, ash pond area, ash pond approach road is being done. One Fog cannon is in service also in ash pond area for dust suppression.

These are the relevant necessary compliance, mentioned under referred letter.

Yours faithfully

D.Kole
7/8/24
Sr.General Manager & HOP
KTPS, Kodema.

वरिष्ठ महाप्रबंधक एवं परियोजना प्रधान
SR. GENERAL MANAGER & HOP
दा.घा.नि.को.ता.वि.के., कोडरमा
DVC, KTPS, Koderma

Annexure: I

Sl No.	Name of Project of NHAI (MOU Existing)	(Allotted quantity) LMT/	Balance Quantity
1	Varanasi-Ranchi-Kolkata Highway ,PIU-Hazaribagh	30.00	30.00
2	Aurangabad Chordaha(NH-2),PIU-Aurangabad	10.00	3.00
3	Varanasi-Ranchi-Kolkata(NH-100), PIU-Ramgarh	10.00	10.00
4	Chordaha Gorhar(NH-2), PIU-Hazaribagh	11.00	5.00
5	BAKARPUR-MANIKPUR (NH-139W),PIU-Patna	10.00	10.00
		Total	58.00 LMT

	Name of Stone Quarry	(Allotted quantity) LMT
1	Domchanch Stone Quarry	30LMT

Details of contract with Cement Factories for lifting of Dry Fly ash

Sl No.	Name of Dry Fly ash Purchaser for Cement Manufacuring	(Allotted quantity) Metric Tons
1	Ultratech Cement limited,Patliputra cement works	300000
2	Ultratech Cement limited, Patratu cement works	85000
3	Soil India limited	100000
4	Rock Hill Hi-Tech cement private Limited	12000
	Total	497000 Tons

Annexure-II

क्रम.स.	गतिविधि का नाम	वर्ष/महीना	व्यय	गांव/स्थान	लाभार्थियों की संख्या
1	Solar Based Drinking Water Facility at village Gandhinagar GP Kariyawan	2022-2023	8,96,385	Kariyawan	
2	Installation of water purifiers in three(03) Govt. Schools under CSR	2022-2023	1,62,458	Chamgudo Khurd,Ghanghari,Dumardiha	
3	Installation of 10(Ten) nos. Tube wells (Hand pumps) in different villages of Gram Panchayat Kariyawan under CSR, DVC, KTPS.	2022-2023	4,71,868	Kariyawan	
4	Day to day drinking water supply through water tanker at Gandhi Nagar Village of Kariyawan Panchayat under CSR, DVC,KTPS.	2022-2023	58,622	Kariyawan	
5	Day to day drinking water supply through water tanker at Gandhi Nagar Village of Kariyawan Panchayat under CSR, DVC,KTPS.	2022-2023	58,622	Kariyawan	
6	Day to day drinking water supply through water tanker at Gandhi Nagar Village of Kariyawan Panchayat under CSR, DVC,KTPS.	2022-2023	34,162	Kariyawan	
7	Day to day drinking water supply through water tanker at Gandhi Nagar Village of Kariyawan Panchayat under CSR, DVC,KTPS.	2022-2023	1,19,309	Kariyawan	
8	Medicine for MMV	April'22 to March'23	4,60,590	05 Cluster	5,281
9	Hiring of MMV	April'22 to March'23	4,03,096	05 Cluster	
10	ORS for combating Diarrhea	April'22 to March'23	14,880	10 Panchayats	10 Panchayats
11	Bleaching Powder for chlorination of wells	April'22 to March'23	19,116	10 Panchayats	10 Panchayats
12	Prescription Pad for Outreach	April'22 to March'23	3,600	For MMV	-
13	Organizing Eye Screening Camp	14.02.2023	47,000	NPS Dumardiha	382
14	2 Days Anti Malarial Camp	05.04.2023 & 06.04.2023	34,500	UMS Kariyawan & NPS Dumardiha	332

15	Payment of STC Trainer's	April'22 to March'23	1,29,000	Training Centre KTPS	170
16	Lab Kit for 02 No. of High Schools	31.12.2022	49,900	Sonpura & Birsodih	02 high Schools
17	Medicine for MMV	April'22 to Mar	4,60,590	05 Cluster	5,281
18	Hiring of MMV	April'22 to Mar	4,03,096	05 Cluster	
19	Vertigo Test	April'22	39,961	KTPS Dispens	175
20	Blood Donation Camp	26.04.2022	0	KTPS Dispens	27
21	School Health Check up Camp	05.07.2022	13,500	Dumardiha	125
22	School Health Check up Camp	06.07.2022	0	Kosmadih	81
23	CSR Camp at Latehar	28.08.222 to 30	0	Latehar	95
24	Covid Booster Dose Camp	05.08.2022 &17	0	KTPS Dispens	493
25	Diarrhea Awareness & Checkup Camp	06.09.2022	26,700	High School Sc	120
26	Diarrhea Awareness & Checkup Camp	07.09.2022	0	Anganwadi Ch	205
27	Blood Donation Camp	27.09.2022	0	KTPS Dispens	21 Unit
28	Random Boold Sugar Check up Camp	10.12.2022	0	KTPS Dispens	15
29	Total Cholesterol Check up camp	10.12.2022	0	KTPS Dispens	15
30	Retina Operation	25.03.2022	15,000	LNJPEH Chou	1
31	ORS for combating Diarrhea	April'22 to Mar	14,880	10 Panchayats	10 Panchayats
32	Bleaching Powder for chlorination of wells	April'22 to Mar	19,116	10 Panchayats	10 Panchayats
33	Prescription Pad for Outreach	April'22 to Mar	3,600	For MMV	-
34	Organizing Eye Screening Camp	14.02.2023	47,000	NPS Dumardih	382
35	Payment tro LNJPEH Chouparan for Cataract Surgery bill & others	14.02.2022	1,79,440	NPS Dumardih	382
36	2 Days Anti Malarial Camp	05.04.2023 & 0	34,500	UMS Kariyawan & NPS Dumardiha	332

ADITYA BIRLA
GRASIM

GIL-CDR/ENV/2024-25/260 11.07.2024

To,
The Deputy Secretary to the Government,
Energy Department,
Ranchi-834004 (Jharkhand)

Sub: Submission of the required document regarding utilization of Fly Ash in compliance of Hon'ble NGT, New Delhi No. 164/2018/PB.

Letter dated 10/07/204 for Fly Ash Compliance against O.A. No.:- 164/2018/PB.

Sir/Madam,

This has reference to the letter received through email from Hon'ble Under Secretary Energy (Depatment of Energy), Govement of Jharkahand dated 10.07.2024 regarding Utilization of Fly Ash in compliance of Hon'ble NGT, New Delhi No. 164/2018/PB.

In response to the letter, we are herewith submitting the required documents to your good office, Hope you will find the same in order.

A) Ash Compliance report submission received copy from Environment Forest and Climate Change Department, RO, Ranchi.
B) Ash Compliance report submission received copy from Regional Officer,JSPCB, Ranchi.
C) Screenshot of Ash Availability & Utilization Portal (Gov. of India MoP/MOEF/CEA/CPCB)

Thanking You.

Yours faithfully,
For Grasim Industries Limited,
Chemical Division, Rehla

(Hitendra Keshav Awasthi)
Unit Head – Grasim Industries Ltd, Rehla

Encl.: As above.
CC:

1. Member Secretary, Jharkhand State Pollution Control Board, T.A. Bhawan, H.E.C. Complex, Ranchi.
2. Special Secretary, Forest Environment and Climate Change Department, Jharkhand, Ranchi.

ADITYA BIRLA
GRASIM

GIL-CDR/ENV/2024-25/68

30.04.2024

To,
The Member Secretary,
Jharkhand State Pollution Control Board,
T.A. Bhawan, H.E.C. Complex,
Ranchi, Jharkhand.

Sub: Submission of Ash Compliance report for the Captive Powerplant Unit 1 & 2, for the Period 1st April 2023 to 31st March 2024

Dear Sir,

In compliance to the flyash notification, we Grasim Industries Limited, Chemical Division, operating a Chlor Alkali Plant at Rehla (Jharkhand), hereby submitting the Ash Compliance report in Annexure-1 for our Captive Powerplants (02 × 30MW) for the period of 1st April 2023 to 31st March 2024.

Particulars	Generation (MT)	Disposal (MT)	Disposal / Utilization %	Remarks
Fly Ash / Bottom Ash	180558.76	180518.2	99.97%	Opening Stock is 42.14 MT and Closing Stock is 82.70 MT (in Silo at the end of the year)

Mode of Ash Disposal / Utilisation	Quantity (MT)
Cement manufacturing	137004.99
Construction of roads, road and fly over embankment	6787.82
Flyash Based Product	4438.98
Filling up of Lowline area	32286.41
Total	180518.20

Hope the above are in line with the statutory requirements.

Thanking you,

Yours faithfully, .
For Grasim Industries Limited, Chemical Division

(Hitendra Keshav Awasthi)
Unit Head – Grasim Industries Ltd, Rehla

Encl.: As above.

CC:
1. The Regional Officer, JSPCB, Tupudana, Ranchi- 834003
2. Addl. Principal Chief Conservator of Forests, Integrated Regional Office, MoEFCC 2nd Floor, Headquarter-Jharkhand State Housing Board, Harmu Chowk, Ranchi, Jharkhand – 834002
3. The Regional Director, CPCB (Eastern Zone), Southern Conclave, Block 502, Rajdanga Main Road, Kolkata- 700107.

Annexure-01

Sl. N.	Details	Compliance Report
1	Name of Power Plant	Captive Power Plant Unit 1 & Unit 2
2	Name of the company	Grasim Industries Limited, Chemical Division, Rehla
3	District	Palamau
4	State	Jharkahnd
5	Postal address for communication:	Rehla, Garhwa, Palamau-822124
6	E-mail:	grasim.rehla@adityabirla.com
7	Power Plant installed capacity (MW):	60 MW (i.e. 2 × 30 MW)
8	Plant Load Factor (PLF):	89.15
9	No. of units generated (MWh):	469590.277
10	Total area under power plant (ha): (including area under ash ponds)	3.49 ha
11	Quantity of coal consumption during reporting period (Metric Tons per Annum):	449411.97
12	Average ash content in percentage (per cent):	39.65
13	Quantity of current ash generation during reporting period (Metric Tons per Annum):	180558.76
	Fly ash (Metric Tons per Annum):	151257.19
	Bottom ash (Metric Tons per Annum):	29301.57
14	Capacity of dry fly ash storage silo(s) (Metric Tons) :	1465 MT (Flyash- 950 MT) (Bottom Ash- 515 MT)
15	Details of utilisation of current ash generated during reporting period	
(a)	Total quantity of current ash utilised (MTPA) during reporting period:	180518.20
(b)	Quantity of fly ash utilised (MTPA):	151496.32
	(i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels)	4050.80
	(ii) Cement manufacturing:	137004.99
	(iii) Ready mix concrete:	0.00
	(iv) Ash and Geo-polymer based construction material:	0.00
	(v) Manufacturing of sintered or cold bonded ash aggregate:	0.00
	(vi) Construction of roads, road and fly over embankment:	3475.14
	(vii) Construction of dams:	0.00
	(viii) Filling up of low lying area:	6965.39
	(ix) Filling of mine voids:	0.00
	(x) Use in overburden dumps:	0.00
	(xi) Agriculture:	0.00
	(xii) Construction of shoreline protection structures in coastal districts;	0.00
	(xiii) Export of ash to other countries:	0.00
	(xiv) Others (please specify):	0.00
(c)	Quantity of bottom ash utilised (MTPA):	29021.88
	(i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels):	388.18
	(ii) Cement manufacturing:	0
	(iii) Ready mix concrete:	0
	(iv) Ash and Geo-polymer based construction material:	0
	(v) Manufacturing of sintered or cold bonded ash aggregate:	0
	(vi) Construction of roads, road and flyover embankment:	3312.68
	(vii) Construction of dams:	0
	(viii) Filling up of low lying area:	25321.02
	(ix) Filling of mine voids:	0
	(x) Use in overburden dumps:	0
	(xi) Agriculture:	0
	(xii) Construction of shoreline protection structures in coastal districts:	0
	(xiii) Export of ash to other countries:	0
	(xiv) Others (please specify):	0
	Total quantity of current ash unutilised (MTPA) during reporting period:	82.70

Grasim Industries Ltd. Palamau (Jharkhand) Rehla

16	**Percentage utilisation of current ash generated during reporting period (per cent):**	99.978%
17	**Details of disposal of ash in ash ponds**	
(a)	Total quantity of ash disposed in ash pond(s) (Metric Tons) as on 31st March (excluding reporting period):	NA
(b)	Quantity of ash disposed in ash pond(s) during reporting period (Metric Tons):	NA
(c)	Total quantity of water consumption for slurry discharge into ash ponds during reporting period (m3):	NA
(d)	Total number of ash ponds:	NA
	(i) Active:	NA
	(ii) Exhausted (yet to be reclaimed):	NA
	(iii) Reclaimed:	NA
(e)	total area under ash ponds (ha):	NA
18	**Individual ash pond details** **Ash pond-1,2, etc (please provide below mentioned details separately, if number of ash ponds is more than one)**	
(a)	Status: Under construction or Active or Exhausted or Reclaimed	NA
(b)	Date of start of ash disposal in ash pond (DD/MM/YYYY or MMYYYY):	NA
(c)	Date of stoppage of ash disposal in ash pond after completing its capacity (DD/MM/YYYY or MM/YYYY): (Not applicable for active ash ponds)	
(c)	area (hectares):	NA
(d)	dyke height (m):	NA
(d)	volume (m3):	NA
(e)	quantity of ash disposed as on 31st March (Metric Tons):	NA
(f)	available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons):	NA
(g)	expected life of ash pond (number of years and months):	NA
(e)	co-ordinates (Lat and Long): (please specify minimum 4 co-ordinates)	NA
(f)	type of lining carried in ash pond: HDPE lining or LDPE lining or clay lining or No lining	NA
g)	mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD)	NA
(h)	Ratio of ash: water in slurry mix (1:___):	NA
(i)	Ash water recycling system (AWRS) installed and functioning: Yes or No	NA
(j)	Quantity of wastewater from ash pond discharged into land or water body (m3):	NA
(k)	Last date when the dyke stability study was conducted and name of the organisation who conducted the study:	NA
(l)	Last date when the audit was conducted and name of the organisation who conducted the audit:	NA
19	**Quantity of legacy ash utilised (MTPA):**	NA
	i. Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels):	NA
	ii. Cement manufacturing:	NA
	iii. Ready mix concrete:	NA
	iv. Ash and Geo-polymer based construction material:	NA
	v. Manufacturing of sintered or cold bonded ash aggregate:	NA
	vi. Construction of roads, road and flyover embankment:	NA
	vii. Construction of dams:	NA
	viii. Filling up of low lying area:	NA
	ix. Filling of mine voids:	NA
	x. Use in overburden dumps:	NA
	xi. Agriculture:	NA
	xii. Construction of shoreline protection structures in coastal districts;	NA
	xiii. Export of ash to other countries:	NA
	xiv. Others (please specify):	NA

Sesim Industries Ltd. Palamau (Jharkhand) Chemical

20	Summary:			
	Details	Quantity generated (MTP)	Quantity utilised (MTP) and (percent)	Balance quantity (MTP)
	Current ash during reporting period	180558.76	180518.20	82.70
	Legacy ash	0	0	0
	Total	180558.76	180518.20	82.70
21	Any other information: Soft copy of the annual compliance report, and shape files of power plant and ash ponds may be e-mailed to:- moefcccoalash@gov.in	Acknowledged		
22	Signature of Authorised Signatory			

ACC

adani
Cement

Ref.: ACC/CH/Govt./2024/176

Date: 16.07.2024

To
The Deputy Secretary
Department of Energy
Government of Jharkhand
Ranchi-834001

Sub. : Submission of information regarding fly ash generation and disposal at ACC Limited, Chaibasa Cement Works for the year 2023-24

Ref.: Your letter No. 1286/Ranchi dated 10.07.2024

Dear Sir,

With reference to your letter No.1286/Ranchi dated 10.07.2024 we are enclosing herewith the copy of annual report regarding generation and disposal of fly ash at ACC Limited, Chaibasa Cement Works for the year 2023-24.

Thanking you,

Yours faithfully,
For ACC Limited

(Raj Gurung)
Plant Manager

Encl. : As above

ACC Limited
Unit-Chaibasa Cement Works
P.O. Jhinkpani-833215
District: West Singhbhum
Jharkhand, India

Registered Office:
Adani Corporate House
Shantigram, S. G. Highway, Khodiyar,
Ahmedabad – 382 421, Gujarat, India
Ph +91 79-2656 5555
www.acclimited.com
CIN:L26940GJ1936PLC149771

Quantity of Fly Ash Generation in Jharkhand by TPPs (2023-2024)												
Sl No.	Name of Unit	Plant Capacity (MW)	Coal Consumption on MT	Quantity of Fly ash generation		Disposal (MT)						
				Wet	Dry	Brick Mfg.	Cement Plant	Block/ Brick Mfg.	Land filling/ Mine Void	Mine Stoing	Other Purpose	Total
1	ACC Limited Chaibasa Cement Works	20	53434	0	30014	4517	25497	-	-	--	-	30014

तेनुघाट विद्युत निगम लिमिटेड
(झारखण्ड सरकार का उपक्रम)
TENUGHAT VIDYUT NIGAM LTD.
(A Govt. of Jharkhand Undertaking)
हिनु, डोरण्डा, राँची-834002 (झारखण्ड) Hinoo, Doranda, Ranchi-834002 (Jharkhand)
ई.पी.बी.एक्स नं.: 0651-2252160/61 & 62 CIN U40101JH1987SGC013153 EPBX No. : 0651-2252160 / 61 & 62
Website : www.tvnlonline.com

पत्रांक/ Ref. 312/24-25 दिनांक/ Date 02/07/2024

सेवा में,

मो0 मुस्तकीम अंसारी
सरकार के उप सचिव,
ऊर्जा विभाग, झारखण्ड,
राँची ।

विषय– माननीय NGT, नई दिल्ली में दायर वाद सं0– O.A. No-164/2018/PB/(Earlier O.A. No-276/2013) Ashwini Kumar Dubey V/s Union of India & others में दिनांक–19.03.24 के पारित आदेश के अनुपालन के संबंध में ।

प्रसंग–1. ऊर्जा विभाग, झारखण्ड का पत्रांक–1187, दिनांक 30.05.24 एवं पत्रांक–611, दिनांक–19.03.2024।

2. वन, पर्यावरण एवं जलवायु परिवर्तन विभाग, झारखण्ड, राँची का पत्रांक–1751, दिनांक–09.05.2024 एवं पत्रांक–961, दिनांक–14.03.2024

महाशय,

उपर्युक्त विषयक TVNL द्वारा माननीय NGT, नई दिल्ली में दायर वाद सं0–O.A. No-164/2018/PB (Earlier O.A. No-276/2013) Ashwini Kumar Dubey V/s Union of India & others में दिनांक–19.03.24 के पारित आदेश के अनुपालन से संबंधित अद्यतन स्थिति निम्नवत् है :–

i) टी0टी0पी0एस0, ललपनिया में Air pollution control & monitoring संयंत्र का अधिष्ठापन वर्ष 2018 में किया जा चूका है, जो सफलतापूर्वक कार्य कर रहा है । संयंत्र से प्राप्त डाटा घोषित प्रदूषण मानको के अनुरूप है जो राज्य प्रदूषण आयोग को online उपलब्ध हैं, **अनुलग्नक–I** संलग्न ।

ii) टी0टी0पी0एस0 प्रबधन द्वारा ऐश पॉन्ड का रख–रखाव सजगता एवं गंभीरता से की जाती है, ऐश पॉन्ड से ऐश की कटाई एवं ढुलाई नियमित रूप से कराई जाती है ताकि पॉन्ड पर अतिरिक्त दबाव नहीं बने। टी0टी0पी0एस0 से प्रति वर्ष उत्पादित ऐश से ज्यादा मात्रा में ऐश पॉन्ड से ऐश की कटाई एवं ढुलाई प्रदषण नियमों के अनुरूप की जाती है। विगत तीन बर्षो में Ash production तथा Ash utilisation की संबंधित सूची अवलोकनार्थ **अनुलग्नक–II** संलग्न है।

iii) Ash dyke की सुरक्षा हेतु जगह जगह पर Boulder Pitching कार्य करायी गई है, ताकि Pond breach की संभावनाओं से बचा जा सके ।

iv) टी0टी0पी0एस0 ऐश पॉन्ड से छन कर निकल रहे जल का जाँच नियमित रूप से कराया जाता है, उक्त स्थल पर एक Settling Pond बनाया गया है और यह सुनिश्चित किया गया है कि नदी में ऐश का बहाव न हो। Effluent जल की मासिक जाँच रिपोर्ट की प्रति अवलोकनार्थ, **अनुलग्नक–III** संलग्न है ।

v) टी0टी0पी0एस0 ऐश पॉन्ड से Legacy ऐश के कटाई एवं ढुलाई हेतु निगम द्वारा एक खुली निविदा सं0 –11/Civil/W/TVNL/RAN/2024-25 प्रकाशित की गयी है। इस निविदा के finalization के उपरांत Legacy ऐश का डिस्पोजल एवं उपयोग NHAI द्वारा भारतमाला प्रोजेक्ट के अंतर्गत सड़क निर्माण के लिये शीघ्र शुरू कराया जायेगा।

पुनः NGT, नई दिल्ली में दायर उपरोक्त वाद में पारित आदेश के अनुपालन हेतु वन, पर्यावरण एवं जलवायु परिवर्तन विभाग, झारखण्ड के पत्रांक–961, दिनांक–14.03.24 के कमांक i में वर्णित सुझाव के आलोक में Fly Ash Management & Utilization Mission के गठन हेतु विभागीय स्तर से कार्रवाई की जा सकती है ।

सादर सूचनार्थ समर्पित ।

अनुलग्नक–यथोपरि ।

विश्वासभाजन

02/07/2024

(उदय कुमार सिंह)
विद्युत अधीक्षण अभियंता
(F&A/ Civil)

Commissioned at TTPS, Lalpania	Commissioned on
Continuous Ambient Air Quality Monitoring Station (CAAQMS)-3 SET AAQMS	09.04.2018
Online continous emission monitoring system (OCEMS) -2 SET OCEMS	22.03.2018
Continuous Effluent Quality Monitoring Station (CEQMS) -1 SET at ETP	25.03.2017
Continuous Effluent Quality Monitoring Station (CEQMS) -1 SET at Ash Pond	06.03.2024
Online SPM analyser- 2 SET for both Unit No-1&2 stack	16.10.2021

Raj Kumar
01/07/24
HOD (CRT-II)

YUGANTAR BHARATI
ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Accredited by :- NABL Accreditated Testing Laboratory Vide Certificate No. TC -12989
Certified by :- ISO 9001:2015 & ISO 45001:2018

TC-12989

Test Report

ULR (Unique Lab Report) No.	TC 1 2 9 8 9 2 4 0 0 0 0 0 0 2 5 1 F		
Discipline: Chemical	Group: Pollution & Environment	Sample Description	Waste Water / Effluent Water
Report Release Date	20th April, 2024	Report ID	YBAEEL-2404-04
W. Order/ JSPCB App. No.	433233813/O&E/23-24	Work Order Date	25.06.2023
Type of Industry(If any)	Thermal Power Plant	Job code/ Ref. no.	YBAEEL/C/April-02
Report Issue to	M/s Tenughat Vidhyut Nigam Limited. Tenughat Thermal Power Station, Lalpania, Dist.- Bokaro, Jharkhand – 829149.		
Sampling Date	13/04/2024	Mode of sample collection	By YBAEEL Team
Sampling Protocol	IS : 17614 (Part-1): 2021	Sample Code	240415-WW-06
Sampling Location	Ash Pond	Sampling Source	Effluent Water
Sample pkg. Condition	Sealed Pack in PP Bottle	Sample Quantity	3000 ml
Meteorological Cond. of Field	W.C.– Cloudy	RH % - 35	Temp.– 30°C
Sample receipt Date	15/04/2024	Analysis Started on: 15/04/2024	Analysis completed on: 20/04/2024

******Test Results ******

Sl	Parameter	Test Method	Units	Results	Limits
1.	pH value	IS 3025 (P-11) 2022 (Electrometric Method)	pH	7.45 at 26.9°C	6.5-8.5
2.	Total dissolved solids	IS 3025 (P-16):2023 (Gravimetric Method)	mg/l	98.0	--
3.	Total Suspended Solids	IS 3025 (P-17):2022 (Gravimetric Method)	mg/l	86.0	100
4.	BOD (3 days at 27°C)	IS 3025 (P-44):1993, RA 2019 (Oxygen Depletion Method)	mg/l	BDL (MDL 1.0)	--
5.	COD (Open reflux)	IS 3025 (P-58):2006, RA 2022	mg/l	12.0	--
6.	Oil & Grease	IS 3025 (P-39):2021 (Partition Gravimetric Method)	mg/l	BDL (MDL 4.0)	20
7.	Dissolved Oxygen	IS 3025 (P-38):1989, RA 2019 (Titrimetric Method)	mg/l	5.8	--
8.	Copper (as Cu)	APHA 3111 B 24th edition 2023 (Direct Air Acetylene Flame Method)	mg/l	BDL (MDL 0.01)	--
9.	Iron (as Fe)	APHA 3111 B 24th edition 2023 (Direct Air Acetylene Flame Method)	mg/l	0.48	--
10.	Zinc (as Zn)	APHA 3111 B 24th edition 2023 (Direct Air Acetylene Flame Method)	mg/l	0.16	--
11.	Chromium (as Cr)	APHA 3111 B 24th edition 2023 (Direct Air Acetylene Flame Method)	mg/l	BDL (MDL 0.02)	--

Note:- Parameter pH & Temperature observed in Field.

Limit is specified as	Environmental (Protection) Rule – 1986, G.S.R. 593 (E)
Abbreviation	MDL – Minimum detection limit, BDL – Below detection [illegible]
Env. Condition of Lab	Laboratory [illegible] Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196 1966 (C)
Specific contractual notes	All values are expressed [illegible] results [illegible] refer only to the tested sample and applicable parameter in Lab's Permanent Facility
	This report in full or in part shall not be used for advertising or as evidence in any court of law
	This report cannot be reproduced, except when in full, without the written permission of the CEO
	The sample [illegible] shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise
	The liability of the laboratory is limited to the invoiced amount
	All disputes are subjected to the Ranchi Jurisdiction
Remarks	Sample complies with prescribed limit.

Sample Drawn By – Angad Munda
Tested By - Shivani Kumari Singh (Sr. Lab Analyst)

28/04/24
Verified & Issued by
Sanjeev Kumar Singh
(Technical Manager)

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

YUGANTAR BHARATI
ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY
Accredited by :- NABL Accredited Testing Laboratory Vide Certificate No. TC -12989
Certified by :- ISO 9001:2015 & ISO 45001:2018
TC-12989

Test Report

ULR (Unique Lab Report) No.	TC 1 2 9 8 9 2 4 0 0 0 0 0 0 0 2 4 4 F		
Discipline: Chemical	Group: Water	Sample Description	Surface Water
Report Release Date	20th April, 2024	Report ID	YBAEEL-2404-04
W. Order/ JSPCB App. No.	433333613/O&E/23-24	Work Order Date	25.06.2023
Type of Industry (If any)	Thermal Power Plant	Job code/ Ref. no.	YBAEEL/C/April-01
Report Issue to	M/s Tenughat Vidhyut Nigam Limited. Tenughat Thermal Power Station, Lalpania, Dist.- Bokaro, Jharkhand – 829149.		
Sampling Date	13/04/2024	Mode of sample collection	By YBAEEL Team
Sampling Protocol	IS : 17614 (Part-1): 2021	Sample Code	240415-SW-01
Sampling Location	Lalpania Pond	Sampling Source	Surface Water
Sample pkg. Condition	Sealed Pack in PP Bottle	Sample Quantity	3000 ml
Meteorological Cond. of Field	W.C.- Cloudy	RH % - 35	Temp. – 30°C
Sample receipt Date	15/04/2024	Analysis Started on: 15/04/2024	Analysis completed on: 20/04/2024

******Test Results******

Sl	Parameter	Test Method	Units	Results	Limits
1.	pH value	IS 3025 (P-11):2022 (Electrometric Method)	pH	7.50 at 25.4°C	6.5-8.5
2.	Colour	IS 3025 (P-04):2021 (Visual Comparison Method)	Hazen	5	--
3.	Conductivity	IS 3025 (P-14):2013, RA 2019	µs/cm	494.0 at 25.6°C	--
4.	Dissolved Oxygen	IS 3025 (P-38):1989, RA 2019 (Titrimetric Method)	mg/l	5.3	>5
5.	Total dissolved solids	IS 3025 (P-16):2023 (Gravimetric Method)	mg/l	232.0	--
6.	Total suspended solids	IS 3025 (P-17):2022 (Gravimetric Method)	mg/l	18.0	--
7.	BOD	IS 3025 (P-44):1993, RA 2019 (Oxygen Depletion Method)	mg/l	0.8	3
8.	Chloride (as Cl-)	IS 3025 (P-32):1988, RA 2019 (Argentometric Method)	mg/l	22.0	--
9.	Fluoride (as F-)	APHA 4500 F-C 24th edition 2023 (Ion Selective Electrode Method)	mg/l	0.48	--
10.	Nitrate (as NO_3^-)	APHA 4500 NO - (B) 24th edition 2023 (UV Screening Method)	mg/l	0.82	--
11.	Sulphate (as SO_4^{2-})	IS 3025 (P-24-Sec 1):2022 (Turbidity Method)	mg/l	24.6	--
12.	Ammoniacal Nitrogen	IS 3025 (P-34):1988, RA 2019 (Titrimetric Method)	mg/l	0.11	--

Limit is specified as	G.S.R. 742 (E) 25th September, 2000.
Abbreviation	MDL – Minimum detection limit, BDL – Below detection limit.
Env. Condition of Lab	Laboratory is maintaining Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (R).
Specific contractual notes	All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility
	This report in full or in part shall not be used for advertising or as evidence in any court of law.
	This report cannot be reproduced except when in full without the written permission of the CEO
	The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise
	The liability of the laboratory is limited to the invoiced amount
	All disputes are subjected to the Ranchi jurisdiction
Remarks	Sample complies with prescribed limits.

Sample Drawn By – Angad Munda
Tested By – Shivani Kumari Singh (Sr. Lab Analyst)

20/04/24
Verified & Issued by
Sanjeev Kumar Singh
(Technical Manager)
Authorized Signatory
Chemical Section
Yugantar Bharati Analytical & Environmental Engineering Laboratory

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

अनुलग्नक – II

Monthly Abstract of Ash Generatin and Utilization

(For the Period from 1st April' 2023 to March'2024)

ASH GENERATION AND UTILIZATION

Sl. No.	Month	Coal consumed (MT)	Coal Consumption (LMT)	Ash content of coal (%)	Total Ash Generation (LMT)	Fly Ash Utilization	Ash Utilization (LMT)	Others	Total	%age utilization
1	APRIL'23	154523.40	1.54523	31.88	0.49262	70912.16	0.709	0.03093	0.740	150.23
2	MAY' 23	151850.50	1.51851	33.56	0.50961	135084.92	1.351	0	1.351	265.07
3	JUNE' 23	119465.40	1.19465	37.45	0.44740	99157.44	0.992	0	0.992	221.63
4	JULY'23	101521.70	1.01522	34.10	0.34619	99455.79	0.995	0.02407	1.019	294.24
5	AUGUST' 23	79395.50	0.79396	29.41	0.23350	35769.86	0.358	0	0.358	153.19
6	SEPTEMBER'23	107248.80	1.07249	33.88	0.36336	52815.36	0.528	0	0.528	145.35
7	OCTOBER'23	168826.50	1.68827	33.38	0.56354	88315.69	0.883	0	0.883	156.72
8	NOVEMBER'23	175442.80	1.75443	33.38	0.58563	26153.87	0.262		0.262	44.66
9	DECEMBER'23	162779.40	1.62779	33.38	0.54336	70877.54	0.709		0.709	130.44
10	JANUARY'24	179484.10	1.79484	33.38	0.59912	88034.59	0.880		0.880	146.94
11	FEBRUARY'24	161633.80	1.61634	33.38	0.53953	87861.69	0.879		0.879	162.85
12	MARCH'24	176620.20	1.76620	33.38	0.58956	67436.93	0.674		0.674	114.39
		1738792.10	**17.38792**	**33.38**	**5.81342**	**921875.84**	**9.219**	**0.1581**	**9.377**	**165.48**

08/06/24
AEx. E(C)

08.06.24
EE(C)

12/06/24
ESE(C)

FORMAT NO. - III

MINISTRY OF POWER
CENTRAL ELECTRICITY AUTHORTY
THERMAL CIVIL DESIGN DIVISION

Monthly Abstract of Ash Generation and Utilization
(For the Period from 1st April, 2022 to 31st March 2023)

Name of Power Utility / Company : TENUGHAT VIDYUT NIGAM LIMITED, RANCHI (JH) Name of Thermal Power Plant : TENUGHAT THERMAL POWER STATION, LALPANIA

Installed Capacity (Total): 420 MW

PERIOD OF REPORT- 1st April, 2022 to 31st March 2023

Sl. No	ASH GENERATION AND UTILIZATION (In LMT)						MODE OF ASH UTILIZATION AND UTILIZATION IN EACH MODE (In LMT)									
	Month	Coal consumed	Ash content of coal	Ash Generation	Ash Utilization	% age Utilization	In making of Fly Ash based/ Bricks/ Blocks/ Tiles etc.	In manufacture of Portland Pozzolana Cement	In construction of Highways & Roads including Flyovers	Part replacement of cement in concrete	In Hydro Power Sector in RCC Dam Construction	In Ash dyke raising	In reclamation of low lying Area	In Mine filling	In Agriculture/ Waste land Development	Others
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	Apr-22	1.61217	36.54	0.58909	0.62146	105.50							0.62146			
2	May-22	1.68168	33.68	0.56639	0.92336	163.03							0.92336			
3	Jun-22	1.53240	31.82	0.48761	0.19859	40.73							0.19859			
4	Jul-22	1.42781	32.80	0.46832	0.44599	95.23							0.44599			
5	Aug-22	1.65686	31.20	0.51694	0.36799	71.19							0.36799			
6	Sep-22	1.56797	31.20	0.48921	0	0							0			
7	Oct-22	1.62090	28.66	0.46455	0.70763	152.33							0.70763			
8	Nov-22	1.63136	33.50	0.54651	0.89815	164.34							0.89815			
9	Dec-22	1.67870	30.60	0.51368	0.76103	148.15							0.76103			
10	Jan-23	1.70164	32.22	0.54827	0.73434	133.94							0.73434			
11	Feb-23	1.37756	32.22	0.44385	0.66619	150.09							0.66619			
12	Mar-23	1.20864	32.22	0.38947	0.60799	156.13							0.60799			
TOTAL		18.69769	32.22	6.02383	6.93271	115.05							6.9327			

Note: (i) Ash means all type of Ash including Fly Ash, Bottom Ash, Pond Ash and Hopper Ash etc.
(ii) Quantity of ash may be provided in Lakh Metric Tonnes (LMT) upto Five Decimal Places.
(iii) Ash utilisation in Column (6) shall be equal to summation of modes of ash utilisation in each mode i.e. summation of column (8) to column (17)

Abbreviations :-
MW - Mega Watt
TPS - Thermal Power Station
KM - Kilometre
LMT - Lakh Metric Tonne
Kcl - Kilocalories

19/4/23
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MINISTRY OF POWER
CENTRAL ELECTRICITY AUTHORTY
THERMAL CIVIL DESIGN DIVISION

Monthly Abstract of Ash Generatin and Utilization

(For the Period from 1st April,2021 to 31st March 2022

Name of Power Utility:TENUGHAT VIDYUT NIGAM LIMITED, RANCHI (JH)

Name of Thermal Power Plant:TENUGHAT THERMAL POWER STATION, LALPANIA.

Installed Capacity (Total):420MW (2 X 210MW)

PERIOD OF REPORT-1st April,2021 to 31st March 2022

Sl. No.	ASH GENERATION AND UTILIZATION (In LMT)						MODES OF ASH UTILIZATION AND UTILIZATION IN EACH MODE (In LMT)									
	Month	Coal consumed	Ash content of coal	Ash Generation	Ash Utilization	% age Utilization	In making of Fly Ash based/ Bricks/ Blocks/ Tiles etc.	In manufacture of Portland Pozzolana Cement	In construction of Highways & Roads including flyovers	Part replacement of cement in concrete	In Hydro Power Sector In RCC Dam Construction	In Ash dyke raising	In reclamation of low lying Area	In Mine Filling	In Agriculture/ Waste land Development	Others
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	April'2021	1.24373	28.03	0.34862	0.22	61.78							0.21536			
2	May'2021	0.76918	28.03	0.21560	0.18	84.42							0.15200			
3	June'2021	0.79517	36.60	0.29103	0.22	76.43							0.22245			
4	July'2021	0.81556	36.30	0.29605	0.00	0.00							0.00000			
5	August'2021	0.81609	31.70	0.25870	0.36	137.44							0.35556			
6	September'2021	0.76185	33.90	0.25827	0.40	155.65							0.40200			
7	October'2021	0.84212	31.16	0.26240	0.190	72.41							0.19000			
8	November'2021	0.79362	29.08	0.23078	0.090	39.00							0.09000			
9	December'2021	1.27381	28.85	0.36750	0.948	258.00							0.94812			
10	January'2022	1.49397	31.60	0.47209	0.520	110.15							0.52000			
11	February'2022	1.56218	27.60	0.43116	0.590	136.84							0.59000			
12	March'2022	1.54633	35.00	0.54121	0.760	140.48							0.76030			
	TOTAL	12.71361	31.49	3.97342	4.47579	112.64321							4.47579			

Note: (i) Ash means all type of ash including Fly Ash, bottom Ash and Pond Ash etc
(ii) Quantity of ash may be provided in Lakh Metric Ton (LMT) upto five decimal places
(iii) Ash utilisation in Column (6) shall be equal to summation of modes of ash utilisation in each mode i.e. summation of column (8) to column (17)

Abbreviations:-
MW-Mega Watt
TPS- Thermal Power Station
KM- Kilometre
LMT- Lakh Metric Tonne
Kcl- Kilocalories

25.05.2022

Monthly Abstract of Ash Generatin and Utilization

(For the Period from 1st April,2020 to March, 2021

Name of Power Utility:TENUGHAT VIDYUT NIGAM LIMITED, RANCHI (JH)

Name of Thermal Power Plant:TENUGHAT THERMAL POWER STATION, LALPANIA.

Installed Capacity (Total)=420MW (2 X 210MW)

PERIOD OF REPORT-1st April,2020 to March, 2021

Sl. No.	ASH GENERATION AND UTILIZATION (in LMT)						MODES OF ASH UTILIZATION AND UTILIZATION IN EACH MODE (in LMT)									
	Month	Coal consumed	Ash content of coal	Ash Generation	Ash Utilization	% age Utilization	In making of Fly Ash based/ Bricks/ Blocks/ Tiles etc.	In manufacture of Portland Pozzolana Cement	In construction of Highways & Roads including Flyovers	Part replacement of cement in concrete	In Hydro Power Sector in RCC Dam Construction	In Ash dyke raising	In reclamation of low lying Area	In Mine filling	In Agriculture/ Waste land Development	Others
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	April'2020	130043.00	36.77	47816.81	0.00	0.00							0.00			
2	May'2020	131485.00	33.84	44494.52	0.00	0.00							0.00			
3	June'2020	142771.00	33.96	48468.39	32328.82	66.70							32328.82			
4	July' 2020	140546.6	30.25	42535.35	56717	133.03							56717.00			
5	August' 2020	137852.5	28.08	35760.58	54806	153.26							54806.00			
6	September'2020	117549.6	36.53	43086.59	61192	142.02							51192.00			
7	October' 2020	134632.3	29.79	40106.90	24302.12	60.59							24302.12			
8	November'2020	144176.2	33.63	48486.46	47500	97.97							47500.00			
9	December'2020	105754	32.72	35911.51	0	0.00							0.00			
10	January'2021	136529.4	33.17	45286.80	14602.37	32.24							14602.37			
11	February'2021	125394.1	29.20	36615.08	90879.38	248.20							90879.38			
12	March'2021	151478.5	33.50	50745.50	95000	187.21							95000.00			
	TOTAL	1562482.00	32.62	519415.69	477327.69	91.90							477327.69			

Note: (i) Ash means all type of ash including Fly Ash, bottom Ash and Pond Ash etc

(ii) Quantity of ash may be provided in Lakh Metric Ton (LMT) upto five decimal places

(iii) Ash utilisation in Column (5) shall be equal to summation of modes of ash utilisation in each mode i.e. summation of column (8) to column (17)

Abbreviations:-

MW-Mega Watt

TPS- Thermal Power Station

Km- Kilometre

LMT- Lakh Metric Tonne

Kc- Kilocalories

23/09/21
SEE(C-I)

28.09.2021
EE(Civil)-I/III

Audit Report
for
ASH GENERATION AND UTILISATION
at
THERMAL INDEPENDENT POWER PLANT
of
M/s. Maithon Power Limited at Maithon

Submitted to:

Maithon Power Limited
(A Joint Venture Company of Tata Power & DVC)
Dambhui, Barbindia, Nirsa,
Dhanbad-828 205, Jharkhand

Submitted by:

School of Infrastructure
Indian Institute of Technology Bhubaneswar
Argul, Odisha
November 2023

Audit Report
for
ASH GENERATION AND UTILISATION
of
M/s. Maithon Power Limited at Maithon

1. Preamble

M/s. Maithon Power Limited (MPL) at Maithon in the state of Jharkhand has awarded a consultancy work vide WO No: 6000067848 dated: 18.07.2023 to IIT Bhubaneswar. The title of the work is "Audit compliance on fly ash generation and utilization". This report entails information on ash generation and its utilization for the FY 2022-23, as achieved by Maithon Power Limited (MPL) at Maithon. This report is prepared based on the factual information provided by Maithon Power Limited (MPL) at Maithon and site visit to witness the same.

2. Site Visit

A site visit was made on 6th November 2023 to Maithon Power Limited (MPL) at Maithon to audit the information furnace by them to JPCB from time to time over ash generation and utilization. Further on the utilization aspect, places were visited where ash is being utilized. This includes brick manufacturing plants, ready mix concrete units and others. A few photographs illustrating the actual usage of ash are enclosed in this report at the end of this report.

3. Introduction

Maithon Power Ltd, in which the Tata Power company and DVC hold 74:26 stake respectively, is the country's first green field power project under public-private partnership. Maithon Power Plant is a coal based thermal power plant located at Maithon in the Dhanbad district of the Indian state of Jharkhand. Maithon Mega Power Plant is located in the coast of River Barakar, north of Dombhuin village in Maithon taluka, in Dhanbad district of Jharkhand. The site is remotely connected by road, rail, air and sea. Joint venture of Tata Power & Damodar Valley Corporation has implemented the 1050 MW (2X525 MW units) in Nirsa District of Dhanbad in the state of Jharkhand in India. This Project is India's first 525 MW unit thermal power plants using subcritical technology. Project supplies power to four states namely New Delhi, Jharkhand, West Bengal and Kerala.

As regards to ash management, the Company generated approximately 18.11 lakh MTPA of ash comprising approximately 13.58 lakh MTPA of fly ash and 4.52 lakh MTPA of bottom ash, out of both the units of 525 MW each, at PLF of 82.14% during FY23. As a part of community development program and to support local self-help groups consisting of land losers and villagers, the Company has made MOMs with Local Transporters for Transportation of dry fly ash through hywas to brick manufacturing industries at zero subsidy thereby ensuring usage of fly ash and improving the economic condition of the villagers.

The ash generated by the plant is handled by silo's and ash pond. Fly ash is stored in silo's and sent for its utilization. Bottom ash is stored in hydro bins/ash pond.

4. Purpose of The Study

According to the Notification S.O. 5481 (E) dated 31.12.2021 published by the Ministry of Environment, Forest and Climate Change (MoEFCC) of India a detailed stock of disposal and utilization of ash (fly and bottom) in coal or lignite based thermal power plants, has to be provided on a regular basis. The provisions specify for the utilization of 100% of ash, in an eco-friendly manner for specified purposes such as the manufacture of cement, building materials. or mine void filling, filling of low-lying areas etc. Additionally, unutilized ash (accumulated) stored before the publication of this Notification must also be completely utilized within 10 years, and if this is not achieved, environmental compensation will be imposed based on the quantity to the particular organization. The government authority monitors ash utilization on a quarterly basis, and thermal power plants are required to upload monthly information on the generation and utilization of ash on the portal within the 1st week of the following month.

4.1 Responsibilities of thermal power plants in the disposal of fly ash and bottom ash:

(1) Every coal or lignite based thermal power plant (including captive or co-generating stations or both) shall be primarily responsible to ensure 100 percent utilisation of ash (fly ash, and bottom ash) generated by it in an eco-friendly manner as given in sub-paragraph (2);

(2) The ash generated from coal or lignite based thermal power plants shall be utilised only for the following eco-friendly purposes, namely: -

(i) Fly ash based products viz. bricks, blocks, tiles, fibre cement sheets, pipes, boards, panels;

(ii) Cement manufacturing, ready mix concrete;

(iii) Construction of road and fly over embankment, Ash and Geo-polymer based construction material;

(iv) Construction of dam;

(v) Filling up of low lying area;

(vi) Filling of mine voids;

(vii) Manufacturing of sintered or cold bonded ash aggregate;

(viii) Agriculture in a controlled manner based on soil testing;

(ix) Construction of shoreline protection structures in coastal districts;

(x) Export of ash to other countries;

(xi) Any other eco-friendly purpose as notified from time to time.

(3) A committee shall be constituted under the chairmanship of Chairman, Central Pollution Control Board (CPCB) and having representatives from Ministry of Environment, Forest and Climate Change (MoEFCC), Ministry of Power, Ministry of Mines, Ministry of Coal, Ministry of Road Transport and Highways, Department of Agricultural Research and Education, Institute of Road Congress, National Council for Cement and Building Materials, to examine and review and recommend the eco-friendly ways of utilisation of ash and make inclusion or exclusion or modification in the list of such ways as mentioned in Sub-paragraph (2) based on technological developments and requests received from stakeholders. The committee may invite the State Pollution Control Board or Pollution Control Committee, operators of thermal power plants and mines, cement plants and other stakeholders as and when required for this purpose. Based on the recommendations of the Committee, Ministry of Environment, Forest and Climate Change (MoEFCC) may publish such eco-friendly purpose.

(4) Every coal or lignite based thermal power plant shall be responsible to utilise 100 percent ash (fly ash and bottom ash) generated during that year, however, in no case shall utilisation fall below 80 per cent in any year, and the thermal power plant shall achieve average ash utilisation of 100 per cent in a three years' cycle. Provided that the three years cycle applicable for the first time is extendable by one year for the thermal power plants where ash utilisation is in the range of 60-80 per cent, and two years where ash utilisation is below 60 per cent and for the purpose of calculation of percentage of ash utilisation, the percentage quantity of utilisation in the year 2021- 2022 shall be taken into account as per the table below:

Utilisation percentages of thermal power plants	First compliance Cycle to meet 100 per cent utilisation	Second compliance cycle onwards, to meet 100 per cent utilisation
>80 per cent	3 years	3 years
60-80 per cent	4 years	3 years
<60 per cent	5 years	3 years

Provided further that the minimum utilisation percentage of 80 per cent shall not be applicable to the first year and first two years of the first compliance cycle for the thermal power plants under the utilisation category of 60-80 per cent and <60 per cent, respectively.

Provided also that 20 percent of ash generated in the final year of compliance cycle may be carried forward to the next cycle which shall be utilised in the next three years cycle along with the ash generated during that cycle.

(5) The unutilised accumulated ash i.e. legacy ash, which is stored before the publication of this notification, shall be utilised progressively by the thermal power plants in such a manner that the utilization of legacy ash shall be completed fully within ten years from the date of publication of this notification and this will be over and above the utilisation targets prescribed for ash generation through current operations of that particular year:

Provided that the minimum quantity of legacy ash in percentages as mentioned below shall be utilised during the corresponding year and the minimum quantity of legacy ash is to be calculated based on the annual ash generation as per installed capacity of thermal power plant.

Year from date of publication	1st	2nd	3rd-10th
Utilisation of legacy ash (in percentage of Annual ash)	At least 20 per cent	At least 35 per cent	At least 50 per cent

Provided further that the legacy ash utilisation shall not be required where ash pond or dyke has stabilised and the reclamation has taken place with greenbelt or plantation and the concerned State Pollution Control Board shall certify in this regard. Stabilisation and reclamation of an ash pond or dyke including certification by the Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be carried out within a year from the date of publication of this notification. The ash remaining in all other ash ponds or dykes shall be utilised in progressive manner as per the above mentioned timelines.

Note: The obligations under sub-paragraph (4) and (5) above for achieving the ash utilisation targets shall be applicable from 1st April, 2022.

(6) Any new as well as operational thermal power plant may be permitted an emergency or temporary ash pond with an area of 0.1 hectare per Mega Watt (MW). Technical specifications of ash ponds or dykes shall be as per the guidelines of Central Pollution Control Board (CPCB) made in consultation with Central Electricity Authority (CEA) and these guidelines shall also lay down a procedure for annual certification of the ash pond or dyke on its safety, environmental pollution, available volume, mode of disposal, water consumption or conservation in disposal, ash water recycling and greenbelt, etc., and shall be put in place within three months from the date of publication of this notification.

(7) Every coal or lignite based thermal power plant shall ensure that loading, unloading, transport, storage and disposal of ash is done in an environmentally sound manner and that all precautions to prevent air and water pollution are taken and status in this regard shall be reported to the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) in Annexure attached to this notification.

(8) Every coal or lignite based thermal power plant shall install dedicated silos for storage of dry fly ash silos for at least sixteen hours of ash based on installed capacity and it shall be reported upon to the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) in the Annexure and shall be inspected by Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) from time to time.

(9) Every coal or lignite based thermal power plant (including captive or co-generating stations or both) shall provide real time data on daily basis of availability of ash with Thermal Power Plant (TPP), by providing link to Central Pollution Control Board's web portal or mobile phone App for the benefit of actual user(s).

(10) Statutory obligation of 100 percent utilisation of ash shall be treated as a change in law, wherever applicable.

Thermal power plants are responsible for utilizing 100% of ash generated in a given year, however, in no case may the utilization rate fall below 80% and must achieve an average ash utilization rate of 100% in a three years cycle. It may be noted that for the first applicable three years cycle, there are mitigation measures as shown in the table below (effective from April 1, 2022).

5. Methodology for audit

The IIT Bhubaneswar study team visited the sites and followed the following methodology for the audit of ash management study.

1) Enlisting the parameters and preparations of the documentation
2) Filling up of the required documents/forms as per the list /notification
3) Site visit and discussions with the concerned officials
4) Understanding the level of compliance based on field-based observations during the site visit and review of the documentation provided.

6. Assumption and Limitations

This auditing study report is limited to the field observations, the documents reviewed, and other relevant information provided by the concerned officials at the time of field visit.

7. Acknowledgements

The study team extends its appreciation to all the individuals who provided verbal, visual or documentary assistance during the assessment study.

8. Findings

In the Table below, reference is made to general observations made during the documentation review/assessment as well as site specific observations made during the site visit.

TABLE A: Summary of audit details on fly ash generation and utilization for the FY 2022-23

1	Name of Power Plant	Maithon Power Ltd
2	Name of the company	Maithon Power Ltd., (A Joint Venture Company of Tata Power & DVC)
3	District	Dhanba
4	State	Jharkhand
5	Postal address for communication:	Maithon Power Ltd., (A Joint Venture Company of Tata Power & DVC), Works: Villàge Dambhui, P.O. Barbindia, P.S. Nirsa, District Dhanbad 828 205, Jharkhand, India
6	E-mail:	bandhupk@tatapower.com
7	Power Plant installed capacity (MW):	2 x 525 MW
8	Plant Load Factor (PLF):	82.14
9	No. of units generated (MWh):	Two
10	Total area under power plant (ha): (including area under ash ponds)	1094.48 Acres
11	Quantity of coal consumption during reporting period (Metric Tons per Annum):	4346873 Metric Tons
12	Average ash content in percentage (per cent):	41.61%
13	Quantity of current ash generation during reporting period (Metric Tons per Annum): Fly ash (Metric Tons per Annum): Bottom ash (Metric Tons per Annum):	1811336 Metric Tons 1358501 Metric Tons 452835 Metric Tons
14	Capacity of dry fly ash storage silo(s) (Metric Tons) :	Main Silo: 4x 1000 MT Intermediate Silo: 2x 500 MT
15	Details of utilization of current ash generated during reporting period (a) Total quantity of current ash utilized (MTPA) during reporting period: (b) Quantity of fly ash utilized (MTPA): (i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels) (ii) Cement manufacturing: (iii) Ready mix concrete:	 1748374 Metric Tons 85754 Metric Tons 592304 Metric Tons Nil

	(iv) Ash and Geo-polymer based construction material:	Nil
	(v) Manufacturing of sintered or cold bonded ash aggregate:	Nil
	(vi) Construction of roads, road and fly over embankment:	Nil
	(vii) Construction of dams:	Nil
	(viii) Filling up of low lying area:	Nil
	(ix) Filling of mine voids:	351490 Metric Tons
	(x) Use in overburden dumps:	Nil
	(xi) Agriculture:	Nil
	(xii) Construction of shoreline protection structures in coastal districts;	Nil
	(xiii) Export of ash to other countries:	Nil
	(xiv) Others (please specify):	Nil
	(c) Quantity of bottom ash utilized (MTPA):	
	(i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels):	Nil
	(ii) Cement manufacturing:	Nil
	(iii) Ready mix concrete:	Nil
	(iv) Ash and Geo-polymer based construction material:	Nil
	(v) Manufacturing of sintered or cold bonded ash aggregate:	Nil
	(vi) Construction of roads, road, and flyover embankment:	Nil

	(vii) Construction of dams:	Nil
	(viii) Filling up of low lying area:	Nil
	(ix) Filling of mine voids:	718829 Metric Tons
	(x) Use in overburden dumps:	Nil
	(xi) Agriculture:	Nil
	(xii) Construction of shoreline protection structures in coastal districts:	Nil
	(xiii) Export of ash to other countries:	Nil
	(xiv) Others (please specify):	NA
	Total quantity of current ash unutilized (MTPA) during reporting period:	1748374 Metric Tons
16	Percentage utilization of current ash generated during reporting period (per cent):	96.524 % (Previous legacy ash utilized fully i.e.100% but normal running stock has been increased slightly at ash pond)
17	Details of disposal of ash in ash ponds	
	Total quantity of ash disposed in ash pond(s) (Metric Tons) as on 31st March (excluding reporting period):	283454 Metric Tons
	Quantity of ash disposed in ash pond(s) during reporting period (Metric Tons):	62943 Metric Tons
	Total quantity of water consumption for slurry discharge into ash ponds during reporting period (m3):	1182499 (m3)
	Total number of ash ponds: Active: Exhausted (yet to be reclaimed): Reclaimed:	Two Two None None
	(e) total area under ash ponds (ha):	34.55 (Ha)

	Individual ash pond details Ash pond-1,2, etc (please provide below mentioned details separately, if number of ash ponds is more than one)		
	Status: Under construction or Active or Exhausted or Reclaimed	Active	
	Date of start of ash disposal in ash pond (DD/MM/YYYY or MMYYYY):	02.09.2011	
	Date of stoppage of ash disposal in ash pond after completing its capacity (DD/MM/YYYY or MM/YYYY): (Not applicable for active ash ponds)	Not Applicable	
	area (hectares):	Not Applicable	
	dyke height (m):	5.5m appx	
	volume (m3):	1751489 m3	
	quantity of ash disposed as on 31st March (Metric Tons):	283454 Metric Tons	
	available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons):	50 to 60%	
18	expected life of ash pond (number of years and months):	35 years	
	co-ordinates (Lat and Long): (please specify minimum 4 co-ordinates)	23°50'02°N 86°44'50°E 23°50'06°N 86°44'33°E 23°49'55°N 86°44'11°E 23°49'53°N 86°44'36°E	
	type of lining carried in ash pond: HDPE lining or LDPE lining or clay lining or No lining	HDPE	
	mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD)	Wet Slurry: MCSD	

	Ratio of ash: water in slurry mix Ash water recycling system (AWRS) installed and functioning: Yes or No Quantity of wastewater from ash pond discharged into land or water body (m3): Last date when the dyke stability study was conducted and name of the organization who conducted the study: Last date when the audit was conducted and name of the organization who conducted the audit:	(1: 3) Yes. Nil IIT Chennai on 02.02.2013. Prof. S. R. Gandhi (HOD Civil) 22.09.2021 Regional Officer (JSPCB, Dhanbad)	
19	Quantity of legacy ash utilized (MTPA): Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels): Cement manufacturing: Ready mix concrete: Ash and Geo-polymer based construction material: Manufacturing of sintered or cold bonded ash aggregate: Construction of roads, road and flyover embankment: Construction of dams: Filling up of low lying area: Filling of mine voids: Use in overburden dumps: Agriculture:	283454 MT	

<table>
<tr><td></td><td>Construction of shoreline protection structures in coastal districts;

Export of ash to other countries:

Others (please specify):</td><td colspan="3"></td></tr>
<tr><td>20</td><td>Summary:</td><td colspan="3"></td></tr>
<tr><td></td><td>Details</td><td>Quantity generated (MTP)</td><td>Quantity utilized (MTP) and (per cent)</td><td>Balance quantity (MTP)</td></tr>
<tr><td></td><td>Current ash during reporting period</td><td>1811336</td><td>1464920</td><td>346397</td></tr>
<tr><td></td><td>Legacy ash</td><td>283454</td><td>283454</td><td>Nil</td></tr>
<tr><td></td><td>Total</td><td>2094790</td><td>1748374</td><td>346397</td></tr>
<tr><td>21</td><td>Any other information:
Soft copy of the annual compliance report, and shape files
of power plant and ash ponds may be e-mailed to:- moefcc-coalash@gov.in</td><td colspan="3">(Previous legacy ash utilized fully i.e.100% but normal running stock has been increased slightly at ash pond).

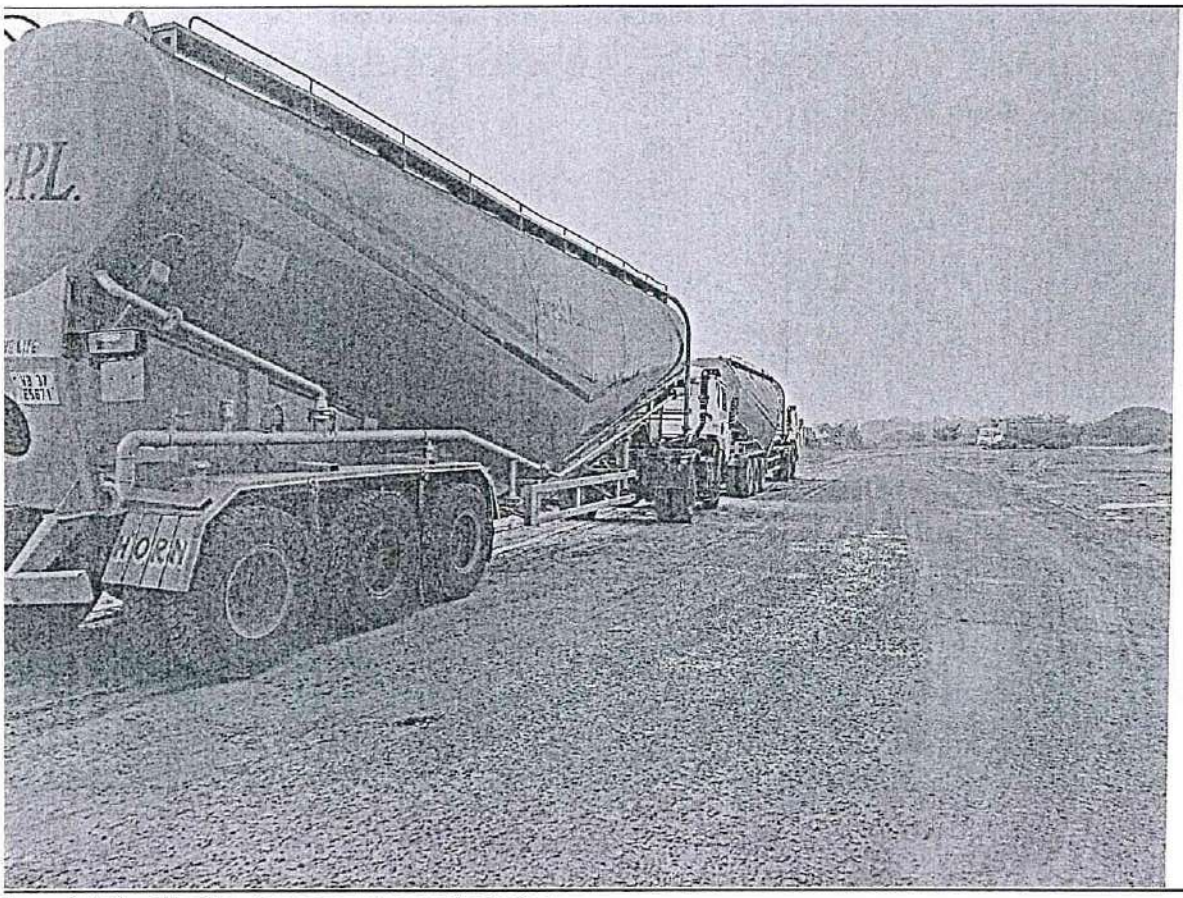
<table>
<tr><th>FY</th><th>Ash Generation (MT)</th><th>Ash Utilization (MT)</th><th>Balance Ash (MT)</th><th>Utilization %</th></tr>
<tr><td>20</td><td>1578063</td><td>1596653</td><td>628938</td><td>101.18</td></tr>
<tr><td>21</td><td>1648299</td><td>2187917</td><td>89321</td><td>132.73</td></tr>
<tr><td>22</td><td>1851817</td><td>1657702</td><td>283436</td><td>89.52</td></tr>
<tr><td>23</td><td>1811336</td><td>1748374</td><td>346397</td><td>96.52</td></tr>
</table>

Attached.</td></tr>
<tr><td>22</td><td>Signature of Authorized Signatory</td><td colspan="3">SCHOOL OF INFRASTRUCTURE * IIT BHUBANESWAR *
Dr. B. Hanumantha Rao</td></tr>
</table>

9. Conclusions

This is to certify that M/s. Maithon Power Limited located at Maithon has accomplished 96.52% ash utilization generated by it for the FY 2022-23. The unutilized ash is stored in the ash ponds. From the evidential experience, it is found that 100% of ash is utilized in brick manufacturing, cement manufacturing, and mine void filling.

Some photograph of backfilling using fly ash and overburden captured during the field visit are provided here with.



igure 1 Ash utilization for cement manufacturing

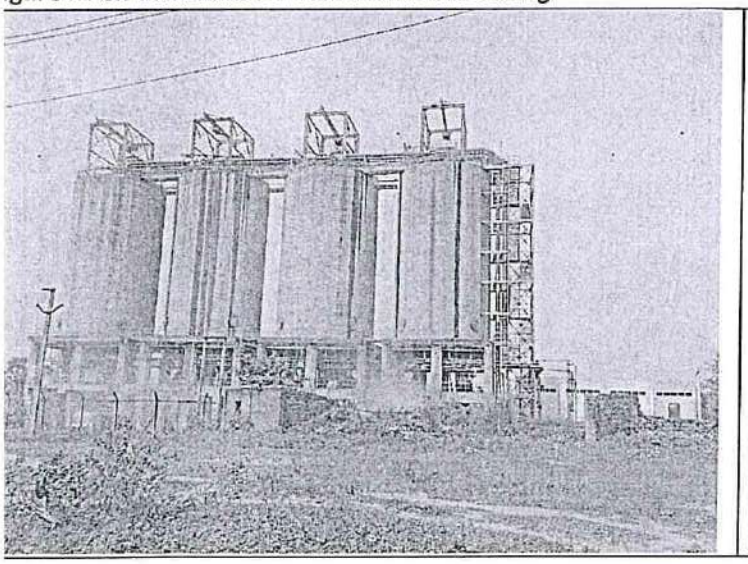


Figure 2 Ash storage in silos

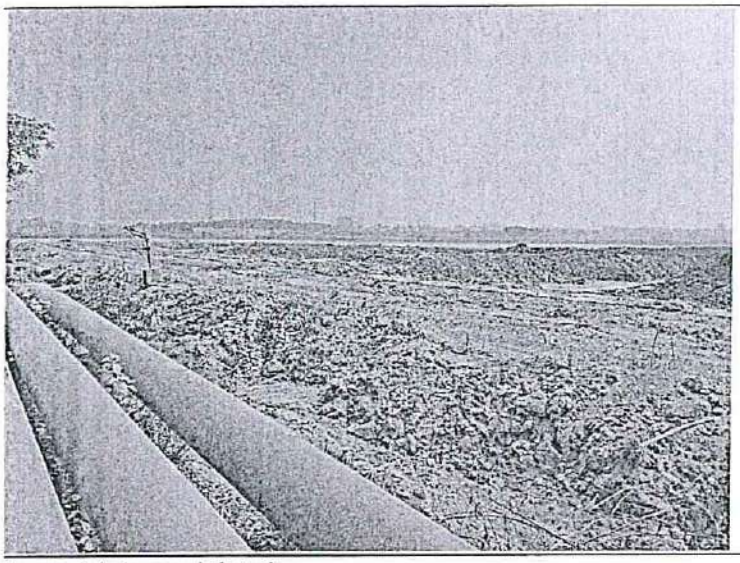


Figure 3 Ash utilization in brick manufacturing outside the plant area

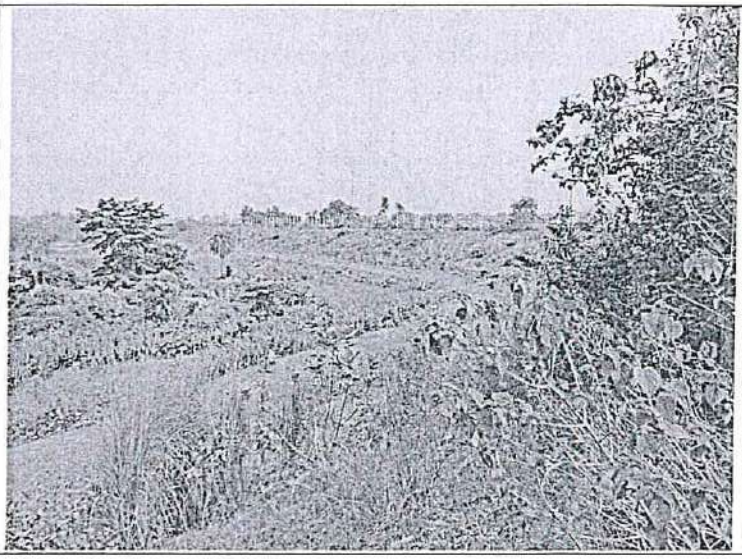


Figure 4 Ash pond details

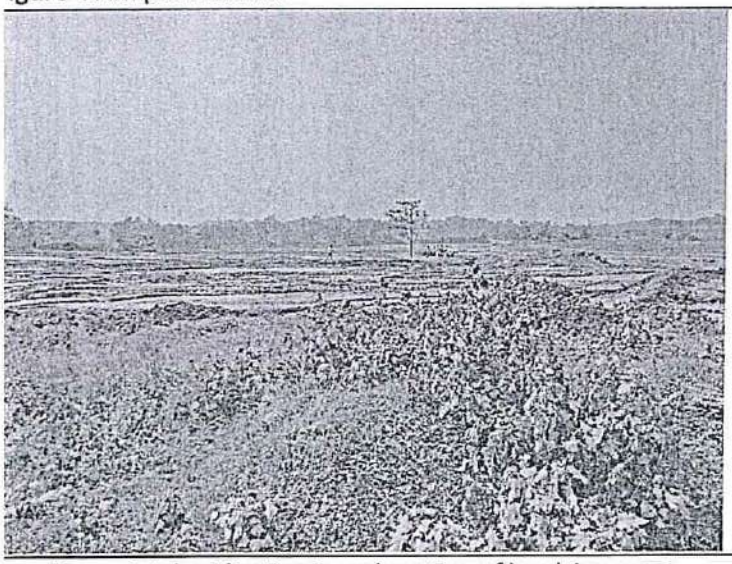


Figure 5 Ash pond details

Figure 6 Ash utilization in reclamation of low lying areas

Figure 7 Ash discharge from pond area for low lying area filling

MPL
MAITHON POWER LIMITED

Ref: MPL/ FY 25/24-05/11

Date: 24.05.2024

To,
Shri Santosh Tewari, IFS
Deputy Director General of Forest (C),
Ministry of Environment, Forest, and Climate Change,
Integrated Regional Office, 2nd Floor,
Headquarter- Jharkhand State Housing Board,
Harmu Chowk, Ranchi, Jharkhand — 834002, Ranchi

Subject: Submission of Ash Compliance Report (for the period 1st April 2023 to 31st Mar 2024)

Dear Sir,

With reference to the above-mentioned subject, we are enclosing herewith the Ash Compliance Report (for the period 1st April 2023 to 31st Mar 2024) of Maithon Power Ltd, Dhanbad.

This is for your information and record please.

Thanking You

Sincerely

For Maithon Power Ltd

(P.K. Bardhan)

Dinesh Kumar Gangwal
(Chief O&M -Services)

Enclosure: Ash Compliance Report (for the period 1st April 2023 to 31st Mar 2024)

(Total 07 pages enclosed).

Cc: (i) Incharge
CPCB, Kolkata
(ii) Member Secretary,
JSPCB, Ranchi (Jharkhand)
(iii) Regional Officer
JSPCB, Dhanbad (Jharkhand)

Ash Compliance Report (for the period 1st April-31st March) to be submitted on or before 31st May.

1	Name of Power Plant	Maithon Power Ltd
2	Name of the company	Maithon Power Ltd., (A Joint Venture Company of Tata Power & DVC)
3	District	Dhanbad
4	State	Jharkhand
5	Postal address for communication:	Maithon Power Ltd., (A Joint Venture Company of Tata Power & DVC), Works: Village Dambhui, P.O. Barbindia, P.S. Nirsa, District Dhanbad 828 205, Jharkhand, India
6	E-mail:	bandhupk@tatapower.com
7	Power Plant installed capacity (MW):	2 x 525 MW
8	Plant Load Factor (PLF):	88.7
9	No. of units generated (MWh):	Two
10	Total area under power plant (ha): (including area under ash ponds)	1094.48 Acres
11	Quantity of coal consumption during reporting period (Metric Tons per Annum):	4820008 Metric Tons
12	Average ash content in percentage (per cent):	42.80%
13	Quantity of current ash generation during reporting period (Metric Tons per Annum): Fly ash (Metric Tons per Annum): Bottom ash (Metric Tons per Annum):	2066003 Metric Tons 1549502 Metric Tons 516501 Metric Tons
14	Capacity of dry fly ash storage silo(s) (Metric Tons) :	Main Silo: 4x 1000 MT

		Intermediate Silo: 2x 500 MT
15	Details of utilization of current ash generated during reporting period	
	(a)Total quantity of current ash utilized (MTPA) during reporting period:	2173513 Metric Tons
	(b) Quantity of fly ash utilized (MTPA):	
	(i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels)	25371 Metric Tons
	(ii) Cement manufacturing:	526256 Metric Tons
	(iii) Ready mix concrete:	Nil
	(iv) Ash and Geo-polymer based construction material:	Nil
	(v) Manufacturing of sintered or cold bonded ash aggregate:	Nil
	(vi) Construction of roads, road and fly over embankment:	Nil
	(vii) Construction of dams:	Nil
	(viii) Filling up of low lying area:	Nil
	(ix) Filling of mine voids:	643830 Metric Tons
	(x) Use in overburden dumps:	Nil
	(xi) Agriculture:	Nil
	(xii) Construction of shoreline protection structures in coastal districts;	Nil
	(xiii) Export of ash to other countries:	Nil
	(xiv) Others (please specify):	Nil

	(c) Quantity of bottom ash utilized (MTPA):	
	(i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels):	Nil
	(ii) Cement manufacturing:	Nil
	(iii) Ready mix concrete:	Nil
	(iv) Ash and Geo-polymer based construction material:	Nil
	(v) Manufacturing of sintered or cold bonded ash aggregate:	Nil
	(vi) Construction of roads, road, and flyover embankment:	Nil
	(vii) Construction of dams:	Nil
	(viii) Filling up of low lying area:	374441 Metric Tons
	(ix) Filling of mine voids:	603614 Metric Tons
	(x) Use in overburden dumps:	Nil
	(xi) Agriculture:	Nil
	(xii) Construction of shoreline protection structures in coastal districts:	Nil
	(xiii) Export of ash to other countries:	Nil
	(xiv) Others (please specify):	NA
	Total quantity of current ash unutilized (MTPA) during reporting period:	2173513 Metric Tons

16	Percentage utilization of current ash generated during reporting period (per cent):	104 % (Previous legacy ash utilized fully i.e.100% and normal running stock has been reduced substantially at ash pond)
17	Details of disposal of ash in ash ponds	
	(a) Total quantity of ash disposed in ash pond(s) (Metric Tons) as on 31st March (excluding reporting period):	346397 Metric Tons
	(b) Quantity of ash disposed in ash pond(s) during reporting period (Metric Tons):	238851 Metric Tons
	(c) Total quantity of water consumption for slurry discharge into ash ponds during reporting period (m3):	1030435 (m3)
	(d) Total number of ash ponds: (i) Active: (ii) Exhausted (yet to be reclaimed): (iii) Reclaimed:	Two Two None None
	(e) total area under ash ponds (ha):	34.55 (Ha)
18	Individual ash pond details *Ash pond-1,2, etc (please provide below mentioned details separately, if number of ash ponds is more than one)*	
	(a) Status: Under construction or Active or Exhausted or Reclaimed	Active
	(b) Date of start of ash disposal in ash pond (DD/MM/YYYY or MMYYYY):	02.09.2011

	(c) Date of stoppage of ash disposal in ash pond after completing its capacity (DD/MM/YYYY or MM/YYYY): (Not applicable for active ash ponds)	Not Applicable	
	(d) area (hectares):	Not Applicable	
	(e) dyke height (m):	5.5m appx	
	(f) volume (m3):	1751489 m3	
	(g) quantity of ash disposed as on 31st March (Metric Tons):	346397 Metric Tons	
	(h) available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons):	70 to 75%	
	(i) expected life of ash pond (number of years and months):	35 years	
	(j) co-ordinates (Lat and Long): (please specify minimum 4 co-ordinates)	23°50'02°N 86°44'50°E 23°50'06°N 86°44'33°E 23°49'55°N 86°44'11°E 23°49'53°N 86°44'36°E	
	(k) type of lining carried in ash pond: HDPE lining or LDPE lining or clay lining or No lining	HDPE	
	(l) mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD)	Wet Slurry: MCSD	
	(m) Ratio of ash: water in slurry mix	(1: 4)	
	(n) Ash water recycling system (AWRS) installed and functioning: Yes or No	Yes.	

	(o) Quantity of wastewater from ash pond discharged into land or water body (m3): (p) Last date when the dyke stability study was conducted and name of the organization who conducted the study: (q) Last date when the audit was conducted and name of the organization who conducted the audit:	Nil Dr. B. Hanumantha Rao (Ph.D., IIT Bombay). Associate Professor Geotechnical Engineering Division School of Infrastructure Indian Institute of Technology Bhubaneswar, Argul Campus, Jatani. Odisha-752 050 06.11.2023	
19	Quantity of legacy ash utilized (MTPA): i. Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels): ii. Cement manufacturing: iii. Ready mix concrete: iv. Ash and Geo-polymer based construction material: v. Manufacturing of sintered or cold bonded ash aggregate: vi. Construction of roads, road and flyover embankment: vii. Construction of dams: viii. Filling up of low lying area: ix. Filling of mine voids:	346397 MT	

	x. Use in overburden dumps: xi. Agriculture: xii. Construction of shoreline protection structures in coastal districts; xiii. Export of ash to other countries: xiv. Others (please specify):	
20	Summary:	

Details	Quantity generated (MTP)	Quantity utilized (MTP) and (per cent)	Balance quantity (MTP)
Current ash during reporting period	2066001	1827116	238884
Legacy ash	346397	346397	Nil
Total	2412398	2173513	238884

21	Any other information: Soft copy of the annual compliance report, and shape files of power plant and ash ponds may be e-mailed to:- moefcccoalash@gov.in	(Previous legacy ash utilized fully i.e.100% but normal running stock has been increased slightly at ash pond). Attached.
22	Signature of Authorized Signatory (Head Environment)	

FY	Ash Generation (MT)	Ash Utilization (MT)	Balance Ash (MT)	Utilization %
21	1648299	2187917	89321	132.73
22	1851817	1657702	283436	89.52
23	1811336	1748374	346397	96.52
24	2066001	2173513	238884	105.20

MPL
MAITHON POWER LIMITED

Ref: MPL/ FY 25/ 24-06/

Date: 04.06.2024

To,
Under Secretory
Energy Department
Govt. of Jharkhand

Kind Attention: Sri Mustquim Ansari

Subject: Regarding compliance of order by Honourable NGT New Delhi dated 19.03.2024 & 18.01.2024 in case no O.A.N0.-164 /2018//PB (Earlier O.A No 276/2013) Ashwini Kumar Dubey v/s 19.03.2024 & 18.01.2024 in case no O.A.N0.-164 /2018//PB (Earlier O.A No 276/2013) Ashwini Kumar Dubey v/s Union of India & Ors.

Ref: Your letter no – 1045 dated 29.05.2024 by Energy department, Government of Jharkhand, Ranchi.

Dear Sir,

We received your letter no 1045 dated 29-05-2024 on email on 31.05.2024.

We would like to inform that Maithon Power Ltd is coal based thermal power plant with capacity of 2 x 525 MW, located in Dhanbad, Jharkhand.

The compliance status of the directions asked are as under:

A. We utilize 100% fly ash in eco-friendly way as per Fly ash notification by MOEF dated 31.12.2021 and amendment dated 30.12. 2022. There is no Legacy ash in Maithon Power Ltd.

FY	Ash Generation (MT)	Ash Utilization (MT)	Balance Ash (MT)	Utilization %
21	1648299	2187917	89321	132.73
22	1851817	1657702	283436	89.52
23	1811336	1748374	346397	96.52
24	2066001	2173513	238884	105.20

The Annual Compliance audit for ash generation and utilization was conducted by CPCB authorized auditors from IIT Bhubaneswar and the report was submitted to CPCB and JSPCB. (Copy of report attached) on 06.11.2023, as per Fly ash notification by MOEF dated 31.12.2021 and amendment dated 30.12. 2022 and the report was submitted to CPCB, CEA and JSPCB.

MPL
MAITHON POWER LIMITED

B. We have conducted the Ash Pond/Dyke stability test on its safety, environmental pollution, available volume, mode of disposal, water consumption or conservation in disposal, ash water recycling and green belt by auditors from IIT Chennai. Toe drain and recycle system had been established as per recommendations and also ash pond bund has been strengthen further with waste stone.

C. We have installed AWRS (Ash water recycling system) and all the water used in carrying the ash to ash pond is recycled and reused. There is no discharge from ash pond. We have also installed ash pond dust suppression system in entire area of ash dyke. AWRS water is used for pond dust suppression system.

D. We have installed air pollution control devices like Electrostatic Precipitators in all units before start of plant and it is in operational round the clock. We have also installed CAAQMS and OCEMS in our plant and the real time data connectivity with CPCB and SPCB is in place.

E. We have installed ETP, High efficiency industrial RO and STP and Zero liquid effluent discharge has been achieved.

F. We have completed 85 % of construction work of FGD (Flue gas Desulphurization) in our plant as on March 2024 and it will get commissioned before the timeline of 31 Dec 2026.

This is for your kind information and record please.

Sincerely

For Maithon Power Ltd

Dinesh Kumar Gangwal
(Chief O&M -Services)

Cc:
Member Secretary,
Jharkhand State Pollution Control Board,
T A Division Building, HEC, Dhurwa
Ranchi (Jharkhand)

The Regional Officer
Jharkhand State Pollution Control Board,
Dhanbad (Jharkhand)

Rungta Mines Limited
(CHALIYAMA STEEL PLANT)
RUNGTA CHAMBERS, SADAR BAZAR, CHAIBASA - 833 201, JHARKHAND, INDIA
Phone : (06582) 255261, 255361, Telefax : +91-6582-255461, Email : csp@rungtamines.com

RML/CSP/F93/24-25/348 Dated 04.06.2024

To,
The Deputy Secretary,
Department of Energy,
Government of Jharkhand
Ranchi, Jharkhand.

Subject: To provide information regarding Fly-Ash Disposal/Usage for NGT

Reference: Letter no. पत्रांक- 3/उ० वि० - कोर्ट केस -16/24/1045 dated 29.05.2024

Respected Sir,

This has reference to your letter no. पत्रांक- 3/उ० वि० - कोर्ट केस -16/24/1045 dated 29.05.2024 received via your office e-mail dated 31.05.2024 directing to provide information regarding fly ash disposal.

In the matter, we wish to submit that Chaliyama Steel Plant of M/s Rungta Mines Limited is operating 138 MW (33 MW WHRB + 105 MW AFBC and CFBC based CPP) located at village Chaliyama district Saraikela – Kharsawan Jharkhand and Chaliyama Steel Plant of M/s Rungta Mines Limited is uploading Monthly Fly Ash generation and Utilization at Central Pollution Control Board (CPCB) portal i.e. *coal ash.cpcb.gov.in*

Further we wish to submit that 100% fly ash generated is being utilized by Chaliyama Steel Plant of M/s Rungta Mines Limited in its own brick manufacturing unit, other brick manufacturing units, Cement Plants and road construction etc.

In addition to the above, this is also to submit that Annual Audit report on compliance audit of fly ash utilization and disposal conducted by NIT Rourkela at Chaliyama Steel Plant of M/s Rungta Mines Limited for the financial year 2022-23 had been submitted to CPCB / JSPCB. A copy of the said Audit Report is enclosed for your information.

This is for your kind information please.

Thanking you,

Yours faithfully,
For Rungta Mines Limited
Chaliyama Steel Plant

(Vikesh Singh)
Sr. Vice President

Encl: a/a

Audit Report

On

Annual Compliance Audit of Fly Ash Utilization and Disposal of Chaliyama Steel Plant of M/s Rungta Mines Limited, Seraikela-kharsawan, Jharkhand for the Financial Year 2022-23

Submitted To

Central Pollution Control Board, New Delhi

Submitted By

Prof. Rabi Narayan Behera

National Institute of Technology Rourkela, Odisha

December 2023

To

The Member Secretary
Central Pollution Control Board, New Delhi
Parivesh Bhawan, East Arjun Nagar
New Delhi-110032

Sub.: Annual Compliance Audit of Fly Ash Utilization and Disposal of Chaliyama Steel Plant of M/s Rungta Mines Limited, Seraikela-kharsawan, Jharkhand for the Financial Year 2022-23

Dear Madam/Sir,
Enclosed herewith please find a copy of the ***Annual Compliance Audit of Fly Ash Utilization and Disposal of Chaliyama Steel Plant of M/s Rungta Mines Limited, Seraikela-kharsawan, Jharkhand for the Financial Year 2022-23.***

The main objective of this audit was to ascertain the utilization and disposal of coal ash (both fly ash and bottom ash) of Chaliyama Steel Plant of M/s Rungta Mines Limited, Seraikela-kharsawan, Jharkhand for the Financial Year 2022-23 as per ash utilization notification nos. 5481(E) dated December 31, 2021 and 6169(E) dated December 30, 2022.

Chaliyama Steel Plant of M/s Rungta Mines Limited, Seraikela-kharsawan, Jharkhand approached National Institute of Technology Rourkela as per Central Pollution Control Board (CPCB) Office Memorandum dated March 06, 2023 to carry out the compliance audit of fly ash utilisation and disposal for their Unit for the financial year 2022-2023 and NIT Rourkela accepted it.

On the basis of the audit findings, it is found that utilisation of ash generated during April 01, 2022 to March 31, 2023 is 449353.56 MT (100 %) and there is **NO** legacy ash.

I would like to thank and acknowledge the cooperation and assistance extended by the Executives of Chaliyama Steel Plant of M/s Rungta Mines Limited, District Seraikela-kharsawan, Jharkhand particularly Mr Rajeev Kumar, Dy. Manager (Env), Dr. Balbandhu, AGM (Geology) and Mr. Gyan Prakash Sharma, General Manager (Env) and Mr Rabin Banerjee, Joint Vice President (Plant) during the Plant visit for audit work.

Yours Sincerely,

Behera 08.12.2023

Dr. Rabi Narayan Behera
Dr. R. N. Behera
Assistant Professor
Department of Civil Engineering
National Institute of Technology
Rourkela (Odisha)

Copy to:

1. The Member Secretary, Jharkhand State Pollution Control Board, Township Administration Building, HEC Complex, Dhurwa, Ranchi-834004, Jharkhand
2. The General Manager (Env), Chaliyama Steel Plant of M/s Rungta Mines Limited, Seraikela-kharsawan, Jharkhand

Ash Compliance Report (for the period April 01, 2022 – March 31, 2023) of M/s Chaliyama Steel Plant, Seraikela-kharsawan, Jharkhand

Sl. No.	Details	Observation	Reference/Remarks
1	Name of Power Plant	Chaliyama Steel Plant of M/s Rungta Mines Ltd. (Captive Power Plant)	As per CTO, Attached as Enclosure-1
2	Name of the company	Chaliyama Steel Plant of M/s Rungta Mines Ltd. (Integrated Steel Plant)	
3	District	Seraikela-Kharsawan	
4	State	Jharkhand	
5	Postal address for communication:	P.O: Kehsargaria, P.S: Rajnagar, Dist: Seraikela – Kharsawan, Jharkahnd	
6	E-mail:	environment@rungtamines.com, csp@rungtamines.com	Rabin Banerjee, Joint Vice President
7	Power Plant installed capacity (MW):	WHRB: 33 MW AFBC: 25 MW CFBC: 80 MW	As per CTO, Attached as Enclosure-1
8	Plant Load Factor (PLF)	80%	As per Enclosure-2
9	No. of units generated (MWh):	WHRB: 2,58,049 Kwh AFBC: 1,87,987 Kwh CFBC: 4,62,677 Kwh	
10	Total area under power plant (ha): (including area under ash ponds)	Power Plant area: 10.12 ha Ash Pond: NA	As per Enclosure-3
11	Quantity of coal consumption during reporting period (Metric tons per Annum):	Coal: 4,05,370.54 MT Char: 1,20,838.73 MT	As per Enclosure-4
12	Average ash content in percentage (per cent):	Coal: 44.2% Char: 52%	As per Enclosure-5
13	Quantity of current ash generation during reporting period (Metric Tons per Annum):	4,49,353.560 MT (WHRB Fly ash 95,415.94 MT + AFBC & CFBC Fly ash 2,64,067.62 MT)	As per Enclosure-6
	Fly ash (Metric Tons per Annum):	3,59,483.56 MT	
	Bottom ash (Metric Tons per Annum):	89,870 MT	

Sl. No.	Details	Observation	Reference/Remarks
14	Capacity of dry fly ash storage silo(s) (Metric Tons):	Fly Ash M. S. Silo (300 × 1 m^3) = 300 MT Bed Ash M. S. Silo (420 × 1 m^3) = 420 MT Fly Ash M. S. Silo (470 × 2 m^3) = 940 MT	As per drawings of General Arrangement of Ash Silos, Attached as Enclosure-7 and considering fly ash and bed ash density as 1 MT/m^3
15	Details of utilisation of current ash generated during reporting period		
	(a) Total quantity of current ash utilised (MTPA) during reporting period:	4,49,353.560 MT.	As per Enclosure-8
	(b) Quantity of fly ash utilised (MTPA):	3,59,483.56 MT	
	(i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels)	96,750.330 MT	
	(ii) Cement manufacturing:	90,130.180 MT	
	(iii) Ready mix concrete:	0	
	(iv) Ash and Geo-polymer based construction material:	0	
	(v) Manufacturing of sintered or cold bonded ash aggregate:	0	
	(vi) Construction of roads, road and fly over embankment:	0	
	(vii) Construction of dams:	0	
	(viii) Filling up of low lying area:	1,72,603.05 MT	
	(ix) Filling of mine voids:	0	
	(x) Use in overburden dumps:	0	
	(xi) Agriculture:	0	
	(xii) Construction of shoreline protection structures in coastal districts:	0	
	(xiii) Export of ash to other countries:	0	

Sl. No.	Details	Observation	Reference/Remarks
	(xiv) Others (please specify):	0	
	(c) Quantity of bottom ash utilised (MTPA)	89,870 MT	
	(i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels):	0	
	(ii) Cement manufacturing:	0	
	(iii) Ready mix concrete:	0	
	(iv) Ash and Geo-polymer based construction material:	0	
	(v) Manufacturing of sintered or cold bonded ash aggregate:	0	
	(vi) Construction of roads, road and fly over embankment:	0	
	(vii) Construction of dams:	0	
	(viii) Filing up of low lying area:	89,870 MT	
	(ix) Filling of mine voids:	0	
	(x) Use in overburden dumps:	0	
	(xi) Agriculture:	0	
	(xii) Construction of shoreline protection structures in coastal districts:	0	
	(xiii) Export of ash to other countries:	0	
	(xiv) Others (please specify):	0	
	Total quantity of current ash unutilised (MTPA) during reporting period:	0	
16	Percentage of utilisation of current ash generated during reporting period (per cent):	**100 %**	As per Enclosure-8
17	Details of disposal of ash in ponds	No Ash Pond	
	(a) Total quantity of ash disposed in ash ponds (Metric Tons) as on 31st March 2022 (excluding reporting period):		

Sl. No.	Details	Observation	Reference/Remarks
	(b) Quantity of ash disposed in ash pond(s) during reporting period (Metric Tons):	NA	As per observation during Plant visit
	(c) Total quantity of water consumption for slurry discharge into ash ponds during reporting period (m^3):		
	(d) Total number of ash ponds:		
	(i) Active:		
	(ii) Exhausted (yet to be reclaimed):		
	(iii) Reclaimed:		
	(e) Total area under ash ponds (ha):		
18	Individual ash pond details	No Ash Pond	
	Ash pond-1, 2 etc. (please provide below mentioned details separately, if number of ash ponds is more than one)	NA	As per observation during Plant visit
	(a) Status: Under construction or Active or Exhausted or Reclaimed		
	(b) Date of start of ash disposal in ash pond (DD/MM/YYYY or MMYYYY):		
	(c) Date of stoppage of ash disposal in ash pond after completing its capacity (DD/MM/YYYY or MM/YYYY) (Not applicable for active ash ponds)		
	(d) area (hectares):		
	(e) dyke height (m):		
	(f) volume (m^3):		
	(g) quantity of ash disposal as on 31st March 2023 (Metric Tons):		
	(h) available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons):		

Sl. No.	Details	Observation	Reference/Remarks
	(i) expected life of ash pond (number of years and months):		
	(j) Coordinates (Lat and Long): (please specify minimum 4 coordinates)		
	(k) type of lining carried in ash pond: HDPE lining or LDPE lining or clay lining or No lining		
	(l) mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD)		
	(m) Ratio of ash: water in slurry mix (1:__):		
	(n) Ash water recycling system (AWRS) installed and functioning: Yes or No		
	(o) Quantity of waste water from ash pond discharged into land or water body (m^3)		
	(p) Last date when the dyke stability study was conducted and name of the organisation who conducted the study:		
	(q) Last date when the audit was conducted and name of the organisation who conducted the audit:		
19	Quantity of legacy ash utilised (MTPA):	0	As per Enclosure-10
	(i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels):	0	
	(ii) Cement manufacturing:	0	
	(iii) Ready mix concrete:	0	
	(iv) Ash and Geo-polymer based construction material:	0	
	(v) Manufacturing of sintered or cold bonded ash aggregate:	0	

Sl. No.	Details	Observation	Reference/Remarks
	(vi) Construction of roads, road and flyover embankment:	0	
	(vii) Construction of dams:	0	
	(viii) Filling up of low lying area:	0	
	(ix) Filling of mine voids:	0	
	(x) Use in overburden dumps:	0	
	(xi) Agriculture:	0	
	(xii) Construction of shoreline protection structures in coastal districts:	0	
	(xiii) Export of ash to other countries:	0	
	(xiv) Others (please specify)	0	

20	Summary			
	Details	Quantity generated (MTPA)	Quantity utilised (MTPA) and (per cent)	Balance quantity (MTPA)
	Current ash during reporting period	4,49,353.56	4,49,353.56 (100 %)	0
	Legacy ash	0	0	0
	Total	4,49,353.56	4,49,353.56 (100 %)	0
21	Any other information Soft copy of the annual compliance report, and shape files or power plant and ash ponds may be e-mailed to: moefcc-coalash@gov.in	Some selected photographs during the site visit are attached as Enclosure-9.		
22	Auditor details			
	Name	Dr. Rabi Narayan Behera		
	Designation	Assistant Professor		
	Address	Department of Civil Engineering, National Institute of Technology Rourkela, Rourkela-769008, Odisha		
	Email	beherarabin@nitrkl.ac.in, rnbehera82@gmail.com		
	Telephone	0661 246 2348		

	Mob. No.	78731 00435
	Date of Plant Visit	November 04, 2023
23	Signature of Authorised Signatory	03.12.2023 Dr. Rabi Narayan Behera Assistant Professor Department of Civil Engineering National Institute of Technology Rourkela Dr. R. N. Behera Assistant Professor Department of Civil Engineering National Institute of Technology Rourkela (Odisha)

NA: Not Applicable

References

- Ministry of Environment, Forest and Climate Change Notification: S.O. 5481(E) dated 31st December 2021
- Ministry of Environment, Forest and Climate Change Notification: S.O. 6169(E) dated 30th December 2022
- Central Pollution Control Board (CPCB) Office Memorandum vide reference no. IPC-II/TPP/CP-II/76/20222/1257 dated 06th March 2023
- Central Pollution Control Board (CPCB) Office Memorandum vide reference no. IPC-II/TPP/CP-II/76/2022/285 dated 17th July 2023

Enclosure- 1

JHARKHAND STATE POLLUTION CONTROL BOARD

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

Ref No. JSPCB/HO/RNC/CTO-17185015/2023/1952 Dated : 2023-11-17

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

1. Application (s) dated 2023-09-26 of Chaliyama Steel Plant of M/s. Rungta Mines Ltd., Occupier Name :Vikesh Singh for consent under section 25 (1)(b)/25 (1) (c)/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21(1) of the Air (Prevention & Control of Pollution) Act,1981..

2. **Documents Relied Upon:**

(a) The content Environmental Clearance issued vide ref. no. J-11011/305/2012-IA.II(I) dated 28.01.2019 from MoFF&CC, New Delhi;

(b) The content of Environmental Clearance from MOEF vide letter No. J- 11011/305/2012- IA II (I) dated 07.08.2018.

(c) The content of Environmental Clearance from MOEF vide letter No. J- 11011/305/2012- IA II (I) dated 27.08.2020 of MoEF&CC, New Delhi;

(c) The content of Consent to Establish (CTE) vide Ref. No. N-346 dated 25.05.2005 from JSPCB Product Sponge Iron – 7X100 TPD Quantity – 210000 TPA;

(d) The content of Consent to Establishh (CTE) vide Ref. No. JSPCB/HO/RNC/CTE-743113/2016/161 dated 12.07.2016 from JSPCB for 1. DRI - 2x350 TPD, 2. Power Plant (WHRB) 1x2 MW, 2x8 MW 3. Billete Plant - 4x15 T (Induction Furnace) 1x3 CCM & 1x20 TLRF.

(e) The content of Consent to Establish (CTE) vide Ref. NO. CTE-3319984/2018/1075 dated 19.10.2018 for Sponge Iron - 0.17 MTPA, Billete plant - 0.062 MTPA (Induction Furnace), Rolling Mill- 17325 TPA, WHRB- 1 MW.

(f) The content of Consent to Establish (CTE) issued vide Ref No.: JSPCB/HO/RNC/CTE-5396290/2019/445 Dated : 2019-07.29 for Sponge Iron – 37600 TPA, SMS- 92400 TPA(SMS I-2x20T LF, SMS II-1x35T LRF) (SMS III-1x35T LRF), Billets - 90552 TPA, Rolling mill-304255 TPA, Power Plant-80 MW (TG sets-02 nos.)

(g) The content of Consent to Operate (CTO) vide Ref. No. CTO-1047382/2017/154 dated 20.02.2017 from JSPC Board valid up to 31-3-2020.

(h) The content of Consent to Operate (CTO) vide Ref. No. CTO-1994603/2018/1230 dated 20.07.2018 from JSPC Board valid up to 31-3-2020.

(i) The content of current Consent to Operate (CTO) vide ref. no. JSPCB/HO/RNC/CTO-3875529/2018/1812 Dated : 2018-11-22 valid up to 31-3-2020.

(j) The content of Consent to operate (CTO) vide Ref No. JSPCB/HO/RNC/CTO-6940536/2020/631 Dated : 2020-03-12 for Sponge Iron - 658000 TPA (8x100 TPD +2x350 TPD), SMS (I &II)- 554400 TPA (SMS I-2x20T LF, SMS II-1x35T LRF, SMS III-1x35T LRF), Billets (I &II) - 543312 TPA(2x3 Strand CCM), Rolling mill (I)- 260790 TPA, Power Plant- 58 MW(WHRB- 33 MW + AFBC- 25 MW) valid up to 31.03.2025 with compliance report;

(k) The content of Consent to Establish (CTE) vide Ref No.: JSPCB/HO/RNC/CTE-8842269/2020/403 Dated : 2020-11-10 for 7x100 DRI Kiln Sponge Iron - 41825 TPA ;(Overall - 360325 TPA); 1x100 DRI Kiln Sponge Iron - 5975 TPA; (Overall- 51475 TPA); 2x350 DRI Kiln SPonge Iron - 46800 TPA; (Overall - 340800 TPA); ** SMS1 (IF 4x15 T, LRF 3x20 T - 69300 TPA ;(Overall - 346500 TPA), Confg. changed from IF 4x15 T, LRF 2x20T to IF 4x15 T LRF 3x20 T; SMS II - Confg. change from IF 4x15 T, LRF 1x35 T to IF 4x15T, LRF- 2x35 T & Production enhance- 69300 TPA; (Overall - 346500 TPA); SMS III - 346500 TPA;** Billets caster -1: 339570 TPA; Billets caster -2: 339570 TPA; Billets caster - 3: 339570 TPA;** Rolling Mill 1: 325988 TPA; Rolling Mill 2: 325988 TPA; Rolling Mill 3: 325988 TPA;** Blast Furnace - 458500 TPA;** Oxygen :- 26950000 Cum/annum;** Pellet plant - 3 MTPA;**Sinter plant - 665280 TPA;** Coke Oven - 280000 TPA (4x70000 T);** Producer gas plant - 51000 Nm3/Hr;

(l) The content of Consent to Operate (CTO) vide Ref No. JSPCB/HO /RNC /CTO- 9572347/2021/573 Dated : 2021-04-06 At- Within existing Plant Area 592.16 acres Investment 50200 lakh for Sponge Iron - 94600 TPA (8x100 TPD +2x350 TPD), SMS (I &II)- 138600 TPA (SMS I & II IF-8x15T LRF- 3x20T + 2x35T), Billets (I &II) - 135828 TPA (2x4 Strand CCM), Rolling mill (I)- 65198 TPA valid till 31.12.2023 with compliance report and photographs as compliance;

(m) The content of Hazardous Waste Authorisation vide JSPCB/HO/RNC/HWM-13401259/2023/34 dated 09/06/2023 valid till 20.11.2025;

(n) The content of inspection report dated 16.10.2023 of Regional Officer, Regional Office-cum-Laboratory, JSPC Board, Jamshedpur;

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

Project	Site-Area		Investment (Rs)	Product & Capacity	Period of CTO
	Plot Nos.	Area			Date of issue To
Before Expansion	Within existing Plant	592.16 acres	50200 lakh	Sponge Iron - 752600 TPA (8x100 TPD +2x350 TPD), SMS (I&II)- 693000 TPA (SMS I & II IF- 8x15 T LRF- 3x20T + 2x35T), Billets (I &II) - 679140 TPA(2x4 Strand CCM), Rolling mill (I)- 325988 TPA; Power Plant- 58 MW(WHRB- 33 MW + AFBC- 25 MW)	31/03/2025

(A) Specific Conditions:

1. That, the occupier shall ensure the cleaning and wetting of ground regularly to improve house keeping.

2. That, the occupier shall operate & maintain effluent treatment plant for treatment of effluent.

3. That, the occupier shall obtain authorization under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

4. That, the occupier shall submit Noise monitoring report to the Board.

5. That, the occupier shall operate and maintain Air Pollution Control Device (APCD) regularly and submit the photographs;

6. That, the occupier shall submit photographs of Tree Plantation, Rain water harvesting, Boundary wall and Water sprinkling system.

7. That, the occupier shall do Loading & unloading of product & raw material in a covered area.

8. That, the occupier shall make Work area and transport roads concrete/ black top.

9. That, the occupier shall purchase raw material only from valid source.

10. That, the occupier shall maintain systems for online monitoring of ambient air quality and all stacks

emission with connectivity to Jharkhand State Pollution Control Board server and unit shall ensure the data transfer;

11. That, the occupier shall operate and maintain air pollution control devices such as ESP & Bag filters regularly to keep the emission level below 50 mg/Nm³.

12. That, the occupier shall cover the coal char with wire mesh and keep it within boundary wall and shall submit the photograph of the same as an evidence to the Board.

13. That, the occupier shall operate and maintain fume extraction system and Bag filters with stack in Steel Melting shop regularly.

14. That, the occupier shall operate and maintain Closed Circuit Television (CCTV) camera for monitoring of operational status of APCDs for observations of the same as and when required.

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

16. That, the occupier shall installed STP for treatment of all domestic discharge water

17. That, the occupier shall make arrangement for washing of returning vehicles after unloading the iron ores, coal, dolomite etc

18. hat, the occupier shall submit half yearly progress report on compliance to the conditions stipulated in Environmental Clearance issued by MOEF, Govt. of India vide letter no.J-11011/305/2012- IA II (I) dated 07.08.2018.

19. That, the occupier shall dispose off/utilize Coal Char fully and its records should be maintained and shall be submitted to the Board quarterly.

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

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

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

23. That, the occupier shall construct garland drain, toe wall and settling tanks for storage of solid wastes and raw materials separately and de-siltation of settling tanks shall be done regularly.

24. That, the unit shall utilised complete fly ash as per Fly ash notification, 1999 and amendments.

25. That, the unit shall submit compliance report of all ECs and CTO conditions at the interval of every 6 months.

26. That, the Occupier shall maintain its effluent standard as follows in Steel Melting Shop
1. pH – 6 to 8.5
2. Suspended solids – 100 mg/l
3. Oil and grease – 10 mg/l

27. That, the Occupier shall make gas recovery system in Steel Melting Shop and no flue gas shall be emitted in
atmosphere.

28. That, the occupier shall maintain particulate matter up to 50 mg/Nm³ in stacks attached to De-dusting of desulphurisation, Secondary refining etc. in Steel Melting Shop.

29. That, the Occupier shall maintain its fugitive emission standard as follows in Steel Melting Shop ;
1. PM10 – 3000 µg /m3
2. SO - 150 µg /m3
3. NOx - 150 µg /m3
4. CO – 5000 µg /m3 (8 hours) and 10000 µg /m3 (1 hour)
5. Lead, as Pb in fugitive dust at Converter floor – 2 µg /m3

30. That, the Occupier shall maintain its effluent standard as follows in Rolling Mills ;
1. pH – 6 to 9
2. Suspended solids – 100 mg/l
3. Oil and grease – 10 mg/l
That, the occupier shall maintain particulate matter up to 150 mg/Nm³ in stacks attached to Rolling Mills.

31. That, the unit shall make all stacks attached to de-dusting arrangement up to 30 metre height minim

32. That, the unit shall make arrangement of separate electricity meter and totalizer for continuous recording of
power consumption. The amperage of the ID fan may also be recorded continuously. Non-functioning of Pollution Control Equipment should be recorded in the same logbook along with reasons for not running the Pollution Control Equipment.

33. That, the Occupier shall not use safety cap/emergency stack for discharging the untreated emission.

34. That, the Occupier shall install software controlled interlocking facility on the basis of real time data from
the plant control system, to ensure stoppage of feed conveyor, if safety cap of the rotary kiln is opened or Air Pollution Control system is not in operation.

35. That, the Occupier shall install Mechanical Operated system for timely collection and removal of the flue

dust generated in air pollution control device.

36. That, the Occupier shall maintain logbook for daily record of Char production and usage.

37. That the occupier shall submit application for renewal of consent under section 25 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 again 120 days to the date of expiry of this consent i.e. 31.03.2025 with requisite fee and documents showing compliance of all the above conditions.

38. This CTO supersedes previous CTO granted vide Ref No. JSPCB/HO/RNC/CTO-6940536/2020/631 Dated : 2020-03-12 valid till 31.03.2025 and stands revised up to this extent.

(B) General Conditions :

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

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

Note : Serial no. 1 to 4 – Mandatory
Serial no. 5 to 12 As applicable for specific type of industry.

(2) That, the occupier shall maintain the emission quality within the standard and the quantity, as follows:

S N	Parameter	Standard
1	Particulate Matter	100 ug/ Nm3

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

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

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

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

(5) That, the occupier shall keep D G Set(s) within acoustic enclosure and shall keep the height(s) of exhaust pipe(s) as per Central Pollution Control Board norm.

(6) That, the occupier shall install and maintain Central Ground Water Board/ State Ground Water Directorate approved system of rain water harvesting-cum-ground water recharge and submit the photographic view of the structures within a month.

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

(8) That, the occupier shall submit environmental statement with supporting stoichiometric calculations analyses reports, every year latest by 30th September of the next financial year.

(9) That, the occupier shall submit report(s) duly monitored and issued by an NABL accredited / ISO 9001:2008 and OHSAS 18001:2007 certified laboratory in compliance sub-para (2), (3), (4) and (5) of paragraph 3 of this CTO yearly at required periodicity.

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

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

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

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

4. **That, this CTO shall not absolve the occupier from making compliance of other statutory prescribed under any law or direction of courts or any other instrument for the time being in force.**

5. **That, this CTO is being issued on the basis of information/ documents/ certificate submitted by the unit. This CTO will be revoked if any of the information/documents/certificates/undertaking given by the occupier is found false/fictitious/forged in future.**

6. **The Order shall be valid subject to compliance of all other legal requirements applicable to the unit.**

7. **The State Board reserve the right to revoke, withdraw or make any reasonable variation / change / alteration in conditions of this consent.**

This is issued with the approval of the Competent authority

Yatindra Kumar Das
Digitally signed by Yatindra Kumar Das
Date: 2023.11.17 08:40:51 +05'30'

(Y.K. Das)
Member Secretary

Memo No. : JSPCB/HO/RNC/CTO-17185015/2023/1952

Dated : 2023-11-17

Copy to: M/s Chaliyama Steel Plant of M/s. Rungta Mines Ltd., At-Chaliyama, P.O.- Keshargaria, P.S.- Rajnagar, SERAIKELA KHARSAWAN/ Chief Inspector of Factories, Ranchi/ Director of Industry, Govt of Jharkhand, Ranchi/ Director of Mines, Govt of Jharkhand, Ranchi/ Deputy Commissioner, SERAIKELA KHARSAWAN/ DFO, SERAIKELA KHARSAWAN/ D.M.O, SERAIKELA KHARSAWAN/ RO, Jamshedpur for information & necessary action.

Yatindra Kumar Das
Digitally signed by Yatindra Kumar Das
Date: 2023.11.17 08:41:08 +05'30'

(Y.K. Das)
Member Secretary

JHARKHAND STATE POLLUTION CONTROL BOARD

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

Ref No. JSPCB/HO/RNC/CTO-12859381/2022/843 Dated : 2022-06-14

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

1. Application (s) dated 2022-03-30 of Chaliyama Steel Plant of M/s. Rungta Mines Ltd., Occupier Name :Vikesh Singh for consent under section 25 (1)(b)/25 (1) (c)/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21(1) of the Air (Prevention & Control of Pollution) Act,1981..

2. **Documents Relied Upon:**

(a) The content of Environmental Clearance vide letter no. J-11011/305/2012-IA.II.(I) dated 19.01.2021 for Expansion of Chaliyama Steel Plant (Steel production from 1.0395 MTPA to 2.8805 MTPA by M/s Rungta Mines Ltd., located at village Chaliyama , Bankasai and Kuju, Dist- Seraikela Kharsawan from MoFF&CC, New Delhi with point wise compliance report;

(b) The content of Consent to establish (CTE) vide Ref No.: JSPCB/HO/RNC/CTE-8842269/2020/403 Dated : 2020-11-10 for 7x100 DRI Kiln Sponge Iron - 41825 TPA ;(Overall - 360325 TPA); 1x100 DRI Kiln Sponge Iron - 5975 TPA; (Overall- 51475 TPA); 2x350 DRI Kiln SPonge Iron - 46800 TPA;(Overall - 340800 TPA); ** SMS1 (IF 4x15 T, LRF 3x20 T - 69300 TPA ;(Overall - 346500 TPA), Confg. changed from IF 4x15 T, LRF 2x20T to IF 4x15 T LRF 3x20 T; SMS II - Confg. change from IF 4x15 T, LRF 1x35 T to IF 4x15T, LRF- 2x35 T & Production enhance- 69300 TPA; (Overall - 346500 TPA); SMS III - 346500 TPA;** Billets caster -1: 339570 TPA; Billets caster -2: 339570 TPA; Billets caster - 3: 339570 TPA;** Rolling Mill 1: 325988 TPA; Rolling Mill 2: 325988 TPA; Rolling Mill 3: 325988 TPA;** Blast Furnace - 458500 TPA;** Oxygen :- 26950000 Cum/annum;** Pellet plant - 3 MTPA;** Sinter plant - 665280 TPA;** Coke Oven - 280000 TPA (4x70000 T);** Producer gas plant - 51000 Nm3/Hr;** with compliance report

(c) The content of Consent to operate (CTO) vide Ref No. JSPCB/HO/ RNC /CTO-10658562/2021/1069 Dated : 2021-09-18 for Pellet plant TPA 3000000, SMS III (IF 4x15 T LRF 2x35 T) TPA 346500, Billet caster (1x4 strand) TPA 339570, Power Plant (2x40 MW) 80 MW valid till 30.06.2022 with compliance report;

(d) The content of inspection report of RO, Jamshedpur vide dated 22.04.2022;

3. The consent is granted under section 25 / 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 to operate the project in Mauza -Land Schedule Enclosed , P S -Chaliyama Bankasai and Kuju , District -SERAIKELA KHARSAWAN , as follows:

Project	Site-Area	Investment (Rs)	Product & Capacity	Period of CTO

	Plot Nos.	Area			Date of issue To
Before Expansion	Within existing Plant	592.16 acres	1281 Crore	Pellet plant - 3000000 TPA, SMS III (IF 4x15 T LRF 2x35 T) - 346500 TPA, Billet caster(III)(1x4 strand)-339570 TPA, Power Plant (2x40 MW)-80 MW	30/06/2024

(A) Specific Conditions:

1. That, the occupier shall install and operate systems for online monitoring of ambient air quality and all stacks emission with connectivity to Jharkhand State Pollution Control Board server

2. That, the occupier shall operate and maintain air pollution control devices such as ESP & Bag filters regularly to keep the emission level below 50 mg/Nm^3.

3. That, the occupier shall provide information regarding shut down of Air Pollution Control Device and plant within 24 hrs. to the Board.

4. That, the occupier shall operate and maintain fume extraction system and Bag filters with stack in Steel Melting shop regularly.

5. That, the occupier shall submit photographs as compliance of all above conditions at the time of renewal of CTO application.

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

7. That, the occupier shall operate and maintain Closed Circuit Television (CCTV) camera for monitoring of operational status of APCDs for observations of the same as and when required.

8. That, the occupier shall submit compliance of conditions of CTO half yearly to the Board

9. That, the occupier shall installed STP for treatment of all domestic discharge water within 3 months.

10. That, the occupier shall make arrangement for washing of returning vehicles after unloading the iron ores, coal, dolomite etc.

11. That, the occupier shall establish and operate well equipped environmental laboratory with facilities to monitor at least all regulatory parameters and duly accredited by NABL.

12. That, the occupier shall submit half yearly progress report on compliance to the conditions stipulated in Environmental Clearance issued by MOEF, Govt. of India

13. That, the occupier shall maintain & operate water sprinkler at all dusty places inside the plant to suppress the fugitive emission.

14. That, the occupier shall do processing of raw materials and products within intact cover with provisions of dust collection.

15. That, the occupier shall maintain and develop good house keeping and make the internal road Pucca

16. That, the occupier shall submit photographs as compliance of all above conditions at the time of renewal of CTO application.

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

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

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

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

21. That, the occupier shall construct garland drain, toe wall and settling tanks for storage of solid wastes and raw materials separately and de-siltation of settling tanks shall be done regularly.

22. That, the occupier shall installed CETP for treatment of all surface run off during the rainy season before discharging from the premises.

23. That, the unit shall utilized complete fly ash as per Fly ash notification, 1999 and amendments.

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

(B) General Conditions :

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

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

Note : Serial no. 1 to 4 – Mandatory
Serial no. 5 to 12 As applicable for specific type of industry.

(2) That, the occupier shall maintain the emission quality within the standard and the quantity, as follows:

S N	Parameter	Standard
1	Particulate Matter	100 µg/ Nm3

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

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

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

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

(5) That, the occupier shall keep D G Set(s) within acoustic enclosure and shall keep the height(s) of exhaust pipe(s) as per Central Pollution Control Board norm.

(6) That, the occupier shall install and maintain Central Ground Water Board/ State Ground Water Directorate approved system of rain water harvesting-cum-ground water recharge and submit the photographic view of the structures within a month.

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

(8) That, the occupier shall submit environmental statement with supporting stoichiometric calculations analyses reports, every year latest by 30th September of the next financial year.

(9) That, the occupier shall submit report(s) duly monitored and issued by an NABL accredited / ISO 9001:2008 and OHSAS 18001:2007 certified laboratory in compliance sub-para (2), (3), (4) and (5) of paragraph 3 of this CTO yearly at required periodicity.

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

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

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

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

4. **That, this CTO shall not absolve the occupier from making compliance of other statutory prescribed under any law or direction of courts or any other instrument for the time being in force.**

5. **That, this CTO is being issued on the basis of information/ documents/ certificate submitted by the unit. This CTO will be revoked if any of the information/documents/certificates/undertaking given by the occupier is found false/fictitious/forged in future.**

6. **The Order shall be valid subject to compliance of all other legal requirements applicable to the unit.**

7. **The State Board reserve the right to revoke, withdraw or make any reasonable variation / change / alteration in conditions of this consent.**

Yatindra Kumar Das Digitally signed by Yatindra Kumar Das Date: 2022.06.14 09:03:29 +05'30'

This is issued with the approval of the Competent authority

(Y. K. Das)
Member Secretary

Memo No. : JSPCB/HO/RNC/CTO-12859381/2022/843

Dated : 2022-06-14

Copy to: M/s Chaliyama Steel Plant of M/s. Rungta Mines Ltd., At-Chaliyama, P.O.- Keshargaria, P.S.- Rajnagar, SERAIKELA KHARSAWAN/ Chief Inspector of Factories, Ranchi/ Director of Industry, Govt of Jharkhand, Ranchi/ Director of Mines, Govt of Jharkhand, Ranchi/ Deputy Commissioner, SERAIKELA KHARSAWAN/ DFO, SERAIKELA KHARSAWAN/ D.M.O, SERAIKELA KHARSAWAN/ RO, Jamshedpur for information & necessary action.

Yatindra Kumar Das Digitally signed by Yatindra Kumar Das Date: 2022.06.14 09:03:04 +05'30'

(Y. K. Das)
Member Secretary

Enclosure - 2

RUNGTA MINES LIMITED
CHALIYAMA STEEL PLANT

Power generated (MWh) for the period April 01, 2022 to March 31, 2023

WHRB :- 258049 KWh

AFBC :- 187987 KWh

CFBC :- 462677 KWh

For Rungta Mines Limited
Chaliyama Steel Plant

(Rabin Banerjee)
Jt. Vice President

Enclosure- 3

RUNGTA MINES LIMITED
CHALIYAMA STEEL PLANT

Total area under power plant (ha.) – 10.12 Ha. (25 Acres)
(AFBC + CFBC)

For Rungta Mines Limited
Chaliyama Steel Plant

(Rabin Banerjee)
Jt. Vice President

Enclosure-4

Rungta Mines Limited
Chaliyama Steel Plant
Coal Consumption

Month	Coal Consumption CPP (T)	Coal Consumption DRI (T)
Apr-22	28728.00	54198.00
May-22	25059.00	47498.00
Jun-22	18722.00	48661.00
Jul-22	23706.00	51622.00
Aug-22	32049.00	41728.00
Sep-22	27709.00	46378.00
Oct-22	42878.00	46034.00
Nov-22	27931.54	52254.00
Dec-22	38446.00	45627.00
Jan-23	51030.00	43108.00
Feb-23	42612.00	48980.00
Mar-23	46500.00	58073.00
G. Total	**405370.54**	**584161.00**

For Rungta Mines Limited
Chaliyama Steel Plant

(Rabin Banerjee)
Jt. Vice President

Rungta Mines Limited
Chaliyama Steel Plant
Dolo Char Consumption

Month	Sponge Production (T)	Dolo Char Consumption in AFBC (T)
Apr-22	55295.000	14918.000
May-22	45875.000	13045.000
Jun-22	49115.000	10033.290
Jul-22	49305.000	8005.420
Aug-22	38795.000	7562.840
Sep-22	44595.000	9260.180
Oct-22	47345.000	8323.000
Nov-22	58245.000	10782.000
Dec-22	50465.000	8923.000
Jan-23	46040.000	6678.000
Feb-23	51954.000	9028.000
Mar-23	57701.000	14280.000
G. Total	**594730.000**	**120838.730**

For Rungta Mines Limited
Chaliyama Steel Plant

(Rabin Banerjee)
Jt. Vice President

Enclosure- I

RUNGTA MINES LIMITED
CHALIYAMA STEEL PLANT

Average ash content in percentage for the period April 01, 2022 to March 31, 2023

Coal :- 44.2%

Char :- 52%

For Rungta Mines Limited
Chaliyama Steel Plant

(Rabin Banerjee)
Jt. Vice President

Enclosure-6

RUNGTA MINES LIMITED
CHALIYAMA STEEL PLANT

Qantity of current ash generation for the period April 01, 2022 to March 31, 2023

(i) WHRB Fly ash – 95415.94 TPA

(ii) AFBC/CFBC Fly ash – 264067.62 TPA

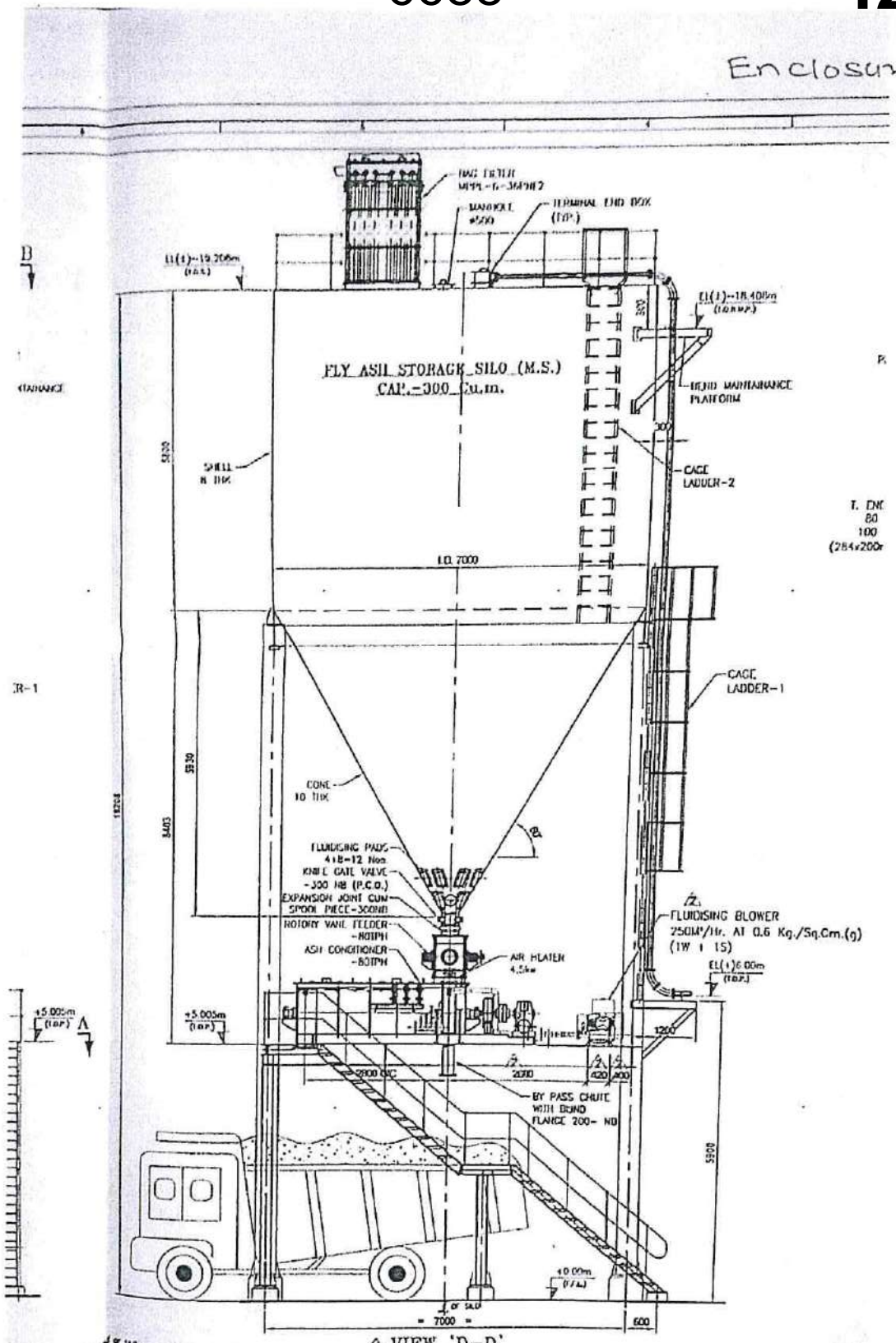
(iii) Bottom Ash – 89870 TPA

For Rungta Mines Limited
Chaliyama Steel Plant

(Rabin Banerjee)
Jt. Vice President

RUNGTA MINES LIMITED
CHALIYAMA STEEL PLANT

Enclosure - 7

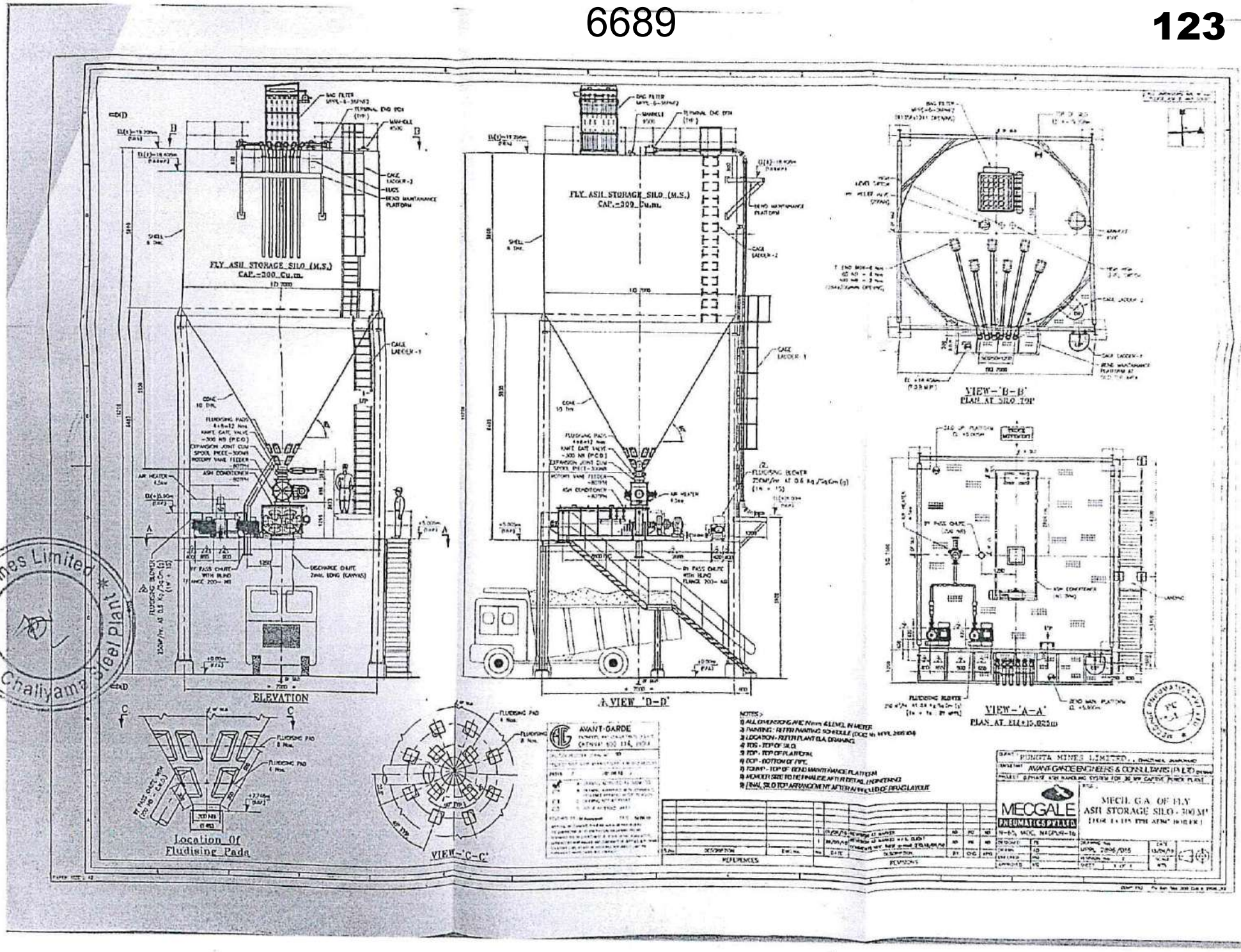


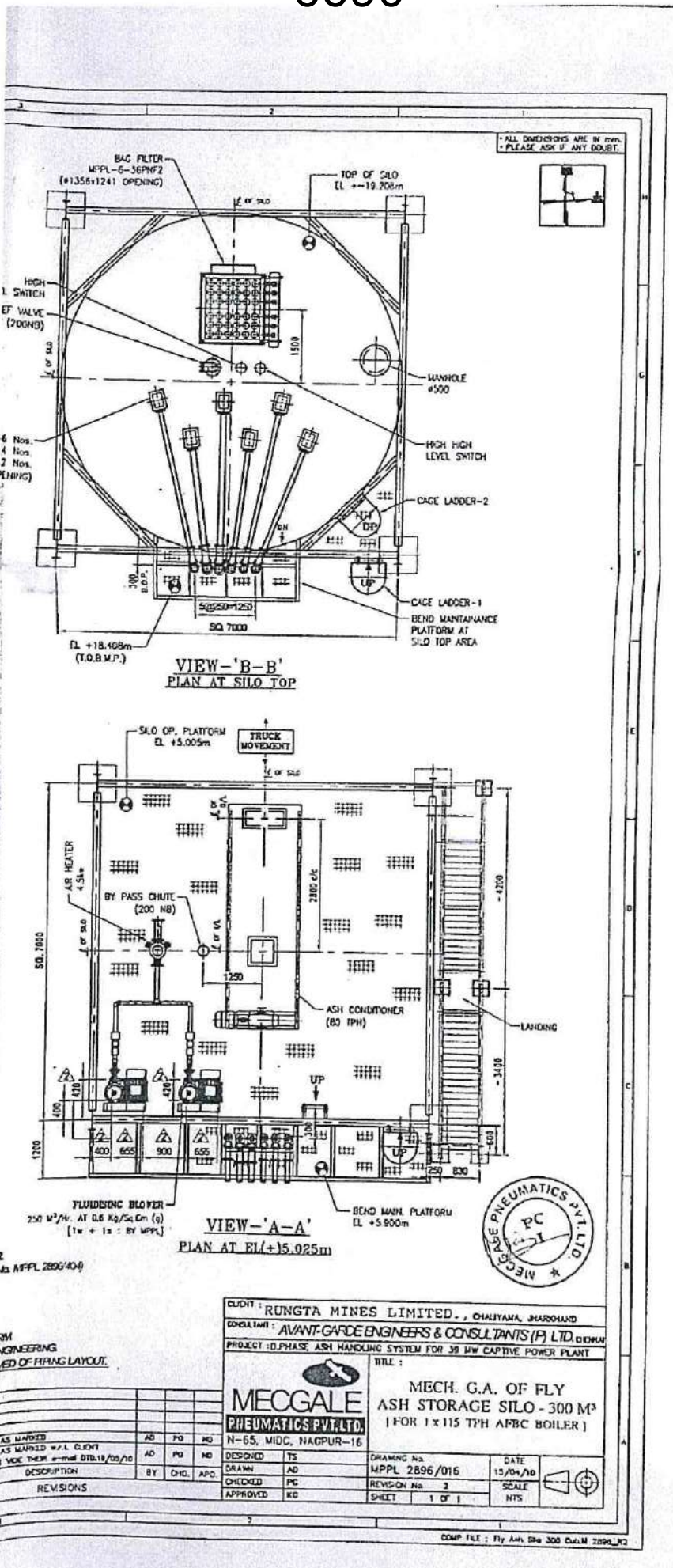
AVANT-GARDE
CHENNAI 600 116, INDIA.

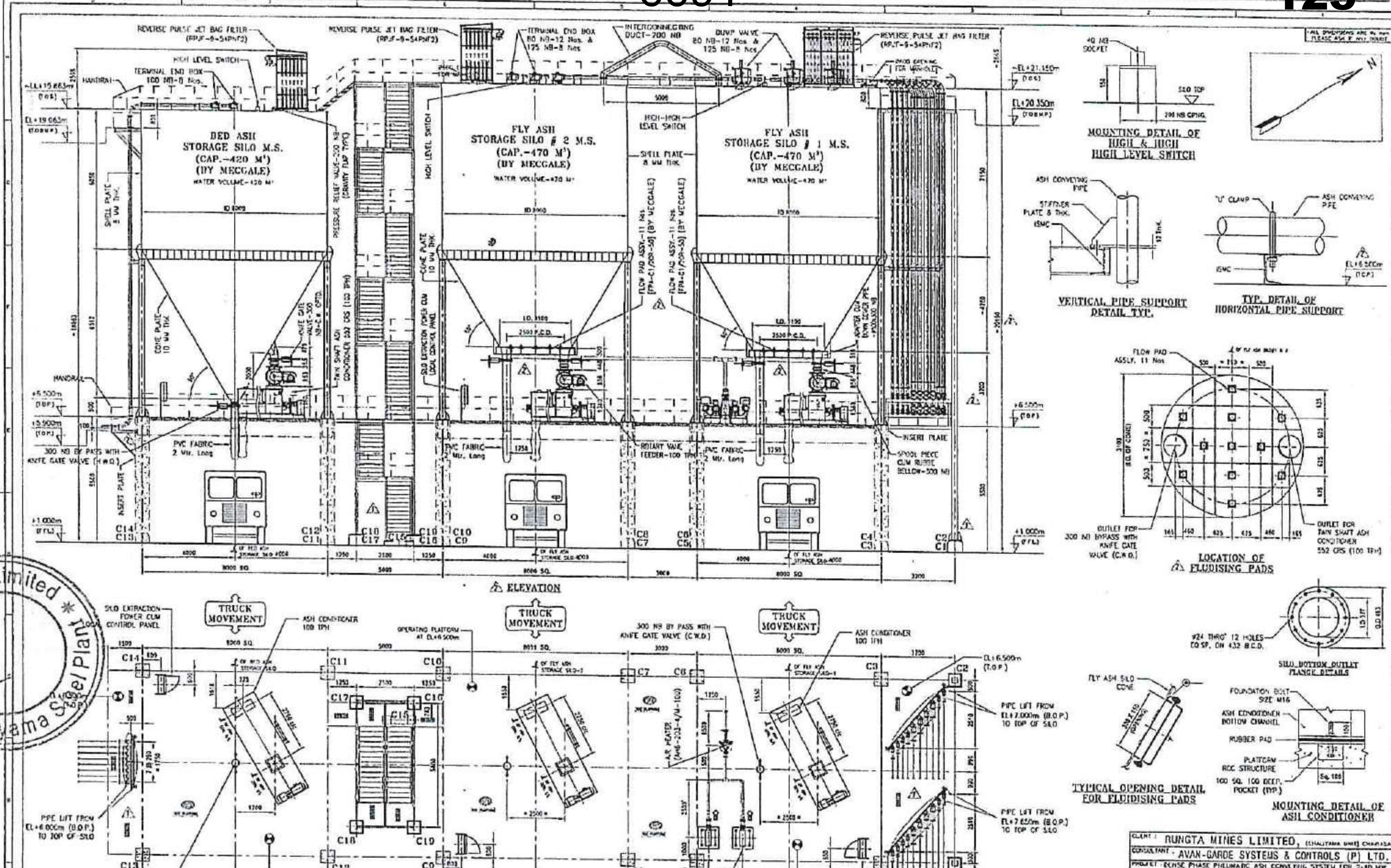
NOTES :-
1) ALL DIMENSIONS ARE IN mm & LEVEL IN ME
2) PAINTING : REFER PAINTING SCHEDULE (DO
3) LOCATION - REFER PLANT G.A. DRAWING
4) TOS - TOP OF SILO
5) TOP - TOP OF PLATFORM
6) BOP - BOTTOM OF PIPE
7) TOBMP - TOP OF BEND MAINTENANCE PLATF
8) MEMBER SIZE TO BE FINALISE AFTER DETAIL
9) FINAL SILO TOP ARRANGEMENT AFTER APPR

S.No.	DESCRIPTION	Dwg.No.	No.	DATE
	REFERENCES		1	01/06/10
			1	29/05/10

Rungta Mines Limited * Chaliyama Site *




ALL DIMENSIONS ARE IN mm.
PLEASE ASK IF ANY DOUBT.
BAG FILTER MPPL-6-36PNF2 (ø1356x1241 OPENING)
TOP OF SILO EL +-19.208m
HIGH L. SWITCH
EF VALVE (200NB)
MANHOLE ø500
HIGH HIGH LEVEL SWITCH
CAGE LADDER-2
CAGE LADDER-1
BEND MAINTAINANCE PLATFORM AT SILO TOP AREA
SQ 7000
EL +18.408m (T.O.B.M.P.)
VIEW-'B-B'
PLAN AT SILO TOP
SILO OP. PLATFORM EL +5.005m
TRUCK MOVEMENT
AIR HEATER
BY PASS CHUTE (200 NB)
ASH CONDITIONER (80 TPH)
LANDING
FLUIDISING BLOWER
250 M³/Hr. AT 0.6 Kg/Sq.Cm (g)
[1w + 1s : BY MPPL]
BEND MAIN. PLATFORM EL +5.900m
VIEW-'A-A'
PLAN AT EL(+)5.025m
MECGALE PNEUMATICS PVT. LTD.
CLIENT : RUNGTA MINES LIMITED., CHALIYAMA, JHARKHAND
CONSULTANT : AVANT-GARDE ENGINEERS & CONSULTANTS (P) LTD.
PROJECT : D.PHASE, ASH HANDLING SYSTEM FOR 38 MW CAPTIVE POWER PLANT
TITLE : MECH. G.A. OF FLY ASH STORAGE SILO - 300 M³ [FOR 1 x 115 TPH AFBC BOILER]
MECGALE PNEUMATICS PVT.LTD.
N-65, MIDC, NAGPUR-16
DESIGNED TS
DRAWN AD
CHECKED PC
APPROVED KC
DRAWING No. MPPL 2896/016
REVISION No. 2
SHEET 1 OF 1
DATE 15/04/10
SCALE NTS
REVISIONS
DESCRIPTION BY CHD. APD.
AS MARKED AD PC KC
AS MARKED w.r.t. CLIENT AD PC KC
Rungta Mines Limited * Chaliyama Steel Plant *



NOTES :-
1) ALL DIMENSIONS ARE IN mm & LEVELS IN mtr.
2) PLEASE REFER EQUIPMENT GA DRAWING FOR OPENINGS ON OPERATING PLATFORM /SILO TOP.

LEGENDS:-
1) T.O.P. = TOP OF PLATFORM.
2) T.O.S = TOP OF SILO.
3) B.O.P. = BOTTOM OF PIPE.
4) B.O.S. = BOTTOM OF SILO.
5) T.O.B.M.P. = TOP OF BEND MAINTENANCE PLATROFM
6) F.F.L. = FINISH FLOOR LEVEL.

"NO REPRODUCTION OR PUBLICATION OF THIS DRAWING BE MADE AND NO ARTICLE BE MANUFACTURED OR ASSEMBLED IN ACCORDANCE WITH THIS DRAWING WITHOUT PRIOR WRITTEN CONSENT. THIS PROHIBITION IS A TERM OF ANY CONTRACT RELATING TO THIS DRAWING. UNAUTHORISED USERS WILL BE PROSECUTED UNDER THE COPYRIGHT ACT 1957 AND THE DESIGN ACT 1911"

CLIENT : RUNGTA MINES LIMITED, (CHALIYAMA UNIT) CHAIBASA
CONSULTANT : AVAN-GARDE SYSTEMS & CONTROLS (P) LTD.
PROJECT : DENSE PHASE PNEUMATIC ASH CONVEYING SYSTEM FOR 2x40 MW CAPTIVE POWER PLANT HAVING 2x170 TPH CFBC BOILER.

MECGALE PNEUMATICS PVT.LTD.
N-65, MIDC, NAGPUR-16

TITLE: MECH. G.A. OF BED ASH & FLY ASH STORAGE SILO (M.S.) [CAPACITY -420 & 470 M³]

DESIGNED	TS
DRAWN	MM
CHECKED	PD
APPROVED	CD
DRAWING No	MPPL-E2250/003
DATE	20/10/20
REVISION No.	2
SCALE	1:110, NTS
SHEET	1 OF 2

Rungta Mines Limited * Chaliyama Steel Plant *

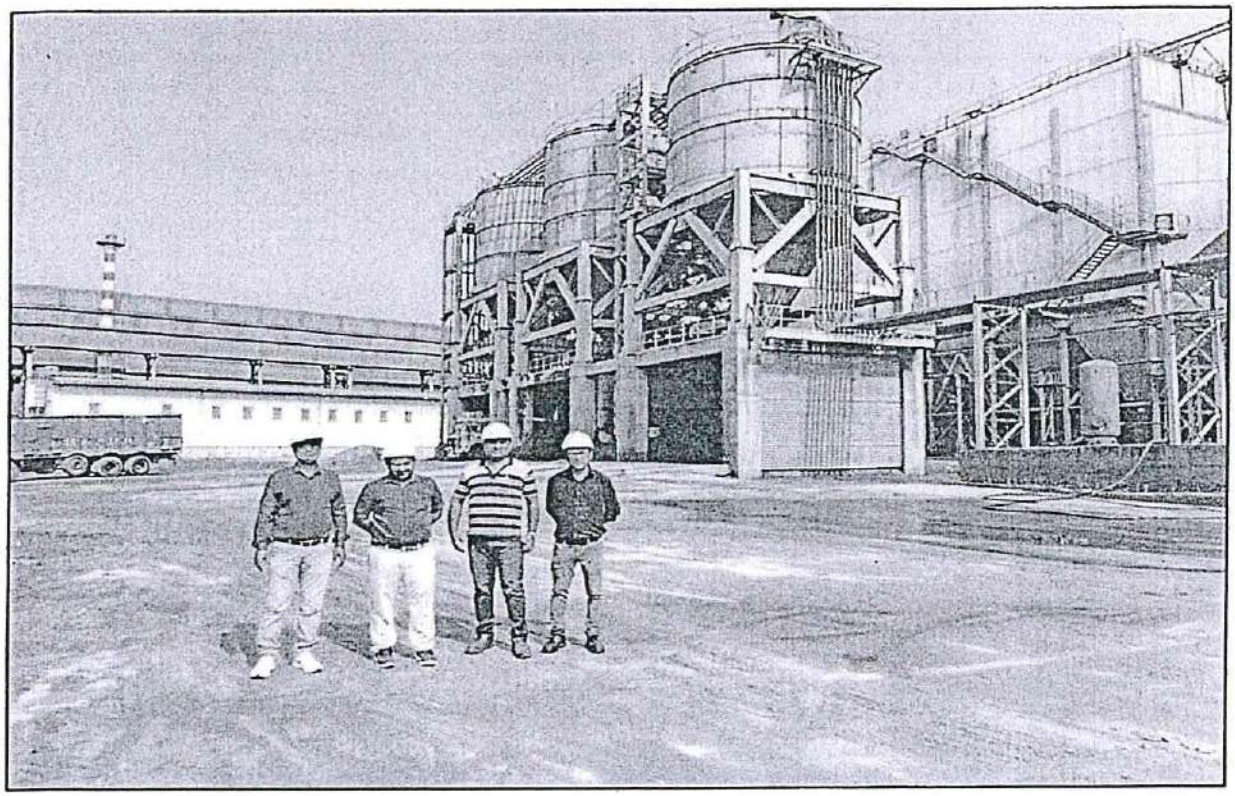
Enclosure- 8

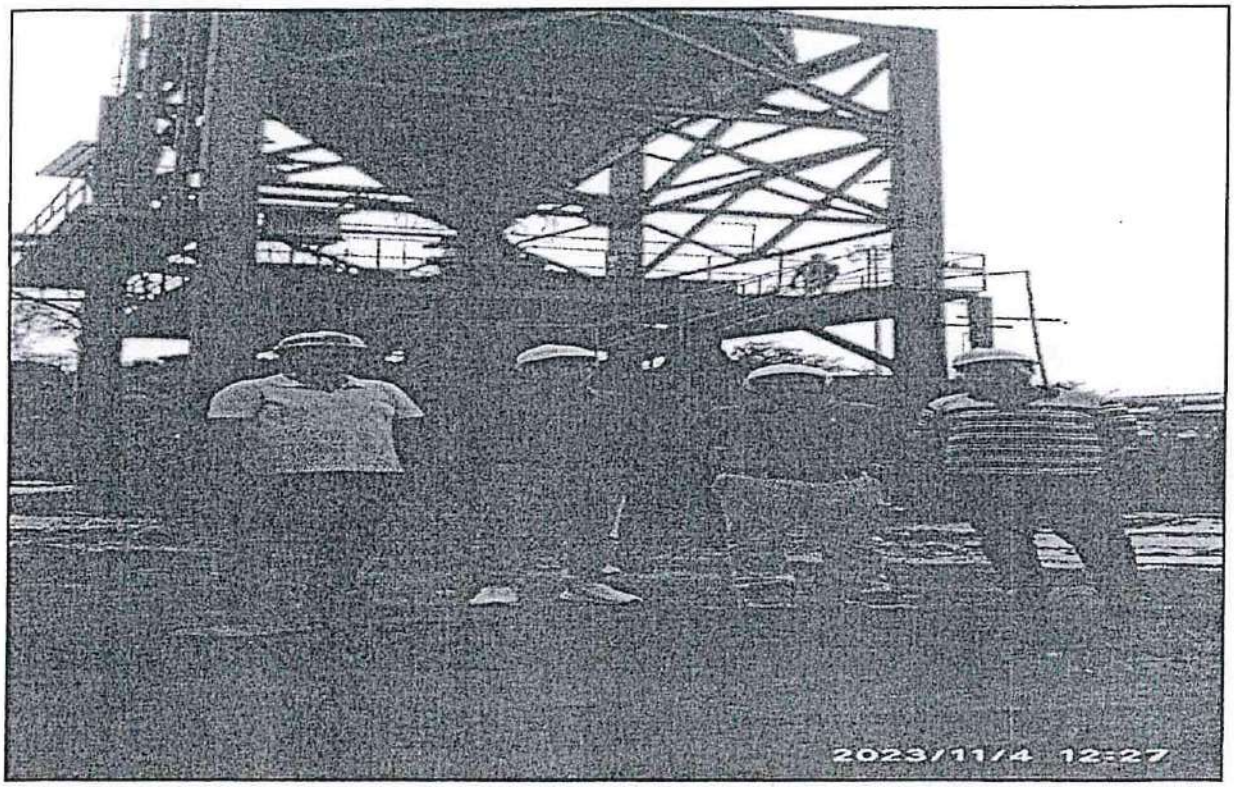
RUNGTA MINES LIMITED
CHALIYAMA STEEL PLANT
FLY ASH GENERATION AND UTILIZATION

Month	GENERATION					UTILIZATION				
	WHRB Qty. (T)	AFBC Qty. (T)	CFBC Qty. (T)	Bottom ash Qty. (T)	Total Qty. (T)	Brick making in own and other Plant (T)	In Cement Plant (T)	Fly ash filling in low lying area (T)	Bottom ash filling in low lying area (T)	Total Qty (T)
Apr-22	10642.02	9959.54	17440.87	1158.49	39200.92	6457.21	6015.38	17914.56183	1158.49	31545.64
May-22	8665.05	9223.16	9831.59	5884.30	33604.1	4787.10	4459.55	15975.03832	5884.30	31105.99
Jun-22	8727.33	6604.73	9884.50	437.99	25654.55	4196.50	3909.36	10658.32246	437.99	19202.17
Jul-22	8267.48	7196.64	10412.04	363.41	26239.57	5392.09	5023.13	9276.743768	363.41	20055.37
Aug-22	5403.44	10163.69	16301.08	198.23	32066.44	5027.43	4683.42	12034.4268	198.23	21943.51
Sep-22	7080.27	10428.31	16671.91	335.22	34515.71	3628.53	3380.25	16022.64615	335.22	23366.64
Oct-22	6893.40	3008.11	25027.63	882.80	35811.94	4799.69	4471.28	16355.9376	882.80	26509.70
Nov-22	7564.12	-	20237.45	10156.47	37958.04	11000.93	10248.19	12228.67848	10156.47	43634.27
Dec-22	7496.89	8535.50	13476.21	19668.90	49177.5	13948.74	12994.29	16272.6367	19668.90	62884.57
Jan-23	7563.04	10908.85	9307.74	20381.03	48160.66	13127.85	12229.58	16688.8924	20381.03	62427.35
Feb-23	7960.09	8610.81	16821.24	8817.06	42209.2	14324.44	13344.29	10641.6652	8817.06	47127.45
Mar-23	9152.81	10476.57	3539.42	21586.13	44754.93	10059.81	9371.47	18533.5003	21586.13	59550.91
G. Total	**95415.94**	**95115.91**	**168951.71**	**89870.00**	**449353.56**	**96750.33**	**90130.18**	**172603.05**	**89870.00**	**449353.56**

For Rungta Mines Limited
Chaliyama Steel Plant

(Rabin Banerjee)
Jt. Vice President




2023/11/4 12:27

Rungta Mines Limited
(CHALIYAMA STEEL PLANT)
RUNGTA CHAMBERS, SADAR BAZAR, CHAIBASA - 833 201, JHARKHAND, INDIA
Phone : (06582) 255261, 255361, Telefax : +91-6582-255461, Email : csp@rungtamines.com

RML/CSP/ JSPCB/22-23/139

Dated: 25.09.2023

To,
The Member Secretary,
Jharkhand State Pollution Control Board,
T.A. Division (Ground floor), H.E.C,Dhurva
Ranchi-834004

Subject: Submission of Environmental Statement (FORM V) for financial year 2022-2023 of Chaliyama Steel Plant of M/s Rungta Mines Limited located at villages Chaliyama Bankasai and Kuju, Saraikela- Kharsawan district of Jharkhand.

Sir,

Enclosed please find herewith Form V for Environmental Statement for the financial year ending the 31St March 2023

Thanking you,

Yours faithfully,

For Rungta Mines Limited
Chaliyama Steel Plant

(Rabin Banerjee)
Jt. Vice President

Encl. As Above

Copy to: Regional Officer, Jharkhand State Pollution Control Board, Regional office, Jamshedpur

ENVIRONMENTAL STATEMENT FOR THE YEAR 2022-23

CHALIYAMA STEEL PLANT

BY:
RUNGTA MINES LIMITED
(Chaliyama Steel Plant)

RUNGTA CHAMBERS, CHAIBASA
DISTRICT SINGHBHUM (W) JHARKHAND
Phone No. – (06582) 255261,255361
Fax No. :- (06582) 255461

FORM-V

(See rule 14)

Environmental Statement for the financial year ending the 31st March 2023

PART-A

(i)	Name and address of the owner / occupier of the industry operation or process.	Rabin Banerjee, Jt. Vice President M/s Rungta Mines Limited Chaliyama Steel plant District – Saraiklea -Kharsawan Jharkhand – 833201. Phone no. : (06582) 255261, 255361 Fax No. : (06582) 255461
(ii)	Industry category primary - (STC Code) Secondary-(STC Code)	PRIMARY
(iii)	Production capacity-units.	

Sl	Facilities	Sanctioned Capacity as per EC & CTO	Actual Production in FY 2022-23
1.	DRI	752800 tpa	594730 tpa
2.	SMS IF 12x15 T LRF 3x20 T + 2x35 T	1039500 tpa	729878.189 tpa
3.	Billets Caster	1018710 tpa	728168.669 tpa
4.	Rolled Product – TMT	977000 tpa	610193.187 tpa
5.	AFBC/ CFBC	105 MW	64.51 MW
	WHRB	33 MW	26.36 MW
6	Pellet plant	3000000 tpa	2475095 tpa

(iv)	Year of establishment.	2007
(v)	Date of last environmental statement submitted.	27.09.2022

PART- B

(i) Water and Raw Material Consumption in m3/day

	2021-22	2022-23
Water Consumption	9300.5	12585.32
Process (DRI+ SMS+ Rolling Mill)	2195.3	3385.78
Power Plant	3473.6	4239.69
Sprinkling	212.5	32.92
Fire Fighting	509.9	708.12
Domestic	1558.1	2465.69
Green Belt Plantation	1297.1	1663.12
Losses	90.0	90.0

Name of Products	**Process water consumption per unit per T of product output**	
	During the previous financial year (2021-22)	During the current financial year (2022-23)
Sponge Iron	0.47	0.41

	SMS	0.82	0.89
	Power Plant	2.6	1.83
	Rolling Mill	0.22	0.35
	Pellet Plant	0.70	0.24
(ii)	**Raw Material Consumption**	**Consumption of raw material per unit of output**	
Name of Raw Materials	Name of Products	**During the previous financial year (2021-22)**	**During the current financial year (2022-23)**
Iron Ore	DRI	1.36	1.40
Coal		0.99	0.93
Dolomite		0.09	0.08
Coal	Power Plant	1.59	0.63
Iron Ore	Pellet	1.12	1.12
Coal		0.012	0.012
Lime		0.022	0.022
Bentonite		0.004	0.004
FO		11.5	11.5

Industry may use codes 1f disclosing details of raw materials would violate contractual obligations otherwise all industries to name the raw materials used.

	PART – C **Pollution discharge to environment / unit of output (parameters as specified in the consent issued)**			
(i)	Pollutants	Quantity of pollutants discharged (mass/day)	Concentrations pollutants in the discharges (Mass/day)	Percentages of variation from prescribed standard are with reasons.
(a)	Water :	No Discharge		
(b)	Air :	Concentration of Ambient Air Quality parameters both in the core and buffer zone are well within limit is enclosed as **Annexure 1**		
	PART-D **Hazardous wastes** **(as specified under Hazardous wastes/ Management and Handling Rules, 1989)**			
	Hazardous wastes	Total Quantity (Kg)		
		During the previous financial year (2021-22)	During the current financial year (2022-23)	
	Grease /Oil	2000 liter	2000 liter	
	PART -E			
		Total Quantity		
	Solid Wastes	During the previous financial year (2021-22) in TPA	During the current financial year (2022-23) in TPA	
(a)	Char	122117	116823	
(b)	Slag	110962	173478	
(c)	Fly Ash	252155	449354	

PART-F

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

Hazardous – Oil used in shuttering in civil construction work

Solid Wastes – 1. Char is used in AFBC/CFBC based power plant for power generation
2. Fly ash used in Brick manufacturing plant , outside cement plant and filling low laying area within plant premises

PART-G

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

33 MW WHRB based power plant is under operation.

PART-H

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

Rain water harvesting is adopted for recharging ground water table within plant premises .

PART-I

Any other particulars for improving the quality of the environment.

- The plant has a full – fledged environmental management department with personnel from the necessary educational qualification and expertise to take care of all environmental aspects relating to plant.
- Environmental monitoring of Ambient Air, Water quality, Stack monitoring, Fugitive emission and Noise monitoring is being done regularly.
- Online stack monitoring facilities has been installed in all process stacks and connected to CPCB and JSPCB server.
- Continuous effluent monitoring system has been installed at 1000 KLD ETP as per guidelines and it has been connected with JSPCB & CPCB server v.
- Online Ambient Air Quality Monitoring systems have been installed at 6 locations & online data connected through the Real Time Data Transmission to JSPCB.
- 72 fixed water sprinklers have been installed in plant premises. Regular sprinkling of water on roads is being done.
- Tyre washing facility has been provided at Bankasai Gate (Gate no. 4) which is "entry only" gate for trucks and also established at Pellet Plant, Gate (Gate no. 5) which is 'exit only" gate for trucks
- One 43 KWP roof top solar power system has been installed at roof top of Administrative Building of Plant
- Automatic display Board installed in front of the main gate.
- Good housekeeping practices is being maintain in the Plant.

For Rungta Mines Limited
Chaliyama Steel Plant

Rabin Banerjee
Jt. Vice President

An ISO 9001 : 2015 approved company

Min Mec R&D Laboratory
(A DIVISION OF MIN MEC CONSULTANCY PVT. LTD.)
A-121, Paryavaran Complex, IGNOU Road, New Delhi – 110 030
Phone: 29532236, 29535891, 29532568
Email: lab.minmec@gmail.com; Visit us at :http://www.minmec.com
Recognised by MOEF&CC (Sl.No.97 of S.O.3744(E) dated 17/10/2019)

TEST REPORT

Customer's Name & Address
Rungta Mines Ltd., Chaliyama Steel Plant, Sponge Iron Division,
Village - Chaliyama, P.O.- Keshargaria,
P.S.- Rajnagar, Seraikela- Kharswan – 833201,Jharkhand

Contact Person : Mr. G. P. Sharma, Phone : 06582-256861

Sample Particulars		
Type of Sample	:	Ambient Air
Work Order No.	:	4800026922
Sampling Location	:	In and around Chaliyama Steel Plant, Jharkhand
Sampling Procedure	:	Section 3.0, Primary data collection of FWIM, Issue 3, Rev 00, dated 15.12.2020
Sample Duration	:	24 hours
Sampling Team	:	MMRDL(Ranjeet)
Sample Reg. No	:	MMA/05-23/2.1-2.4
Date(s) of Sampling	:	03/05/2023 to 07/05/2023
Date(s) of Receipt	:	16/05/2023
Date(s) of Testing	:	16/05/2023 to 17/05/2023
Date of Report	:	25/05/2023
Test Report No.	:	MMA/05-23/33
ULR No.	:	TC633723000000123F
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AMBIENT AIR QUALITY TEST RESULTS

Sl. No	Date of Sampling	Location	PM10 ($\mu g/m^3$)	PM2.5 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)
1	03-04/05/2023	Plant Area	90.4	49.2	13.7	18.4	BDL	BDL
2	04-05/05/2023	Chaliyama Village	78.4	43.5	12.5	15.6	BDL	BDL
3	05-06/05/2023	Bankasai Village	67.1	36.2	10.4	11.9	BDL	BDL
4	06-07/05/2023	Gaisuti Village	54.0	27.5	6.1	9.0	BDL	BDL
Protocol of Analysis			IS:5182 (Part 23) : 2006, RA 2017	Lab SOP/09/6 Issue 03 : 2017	IS:5182 (Part 2) : 2001, RA 2017	IS:5182 (Part 6) : 2006, RA 2017	IS 5182 (Part 9): 1974, RA 2019	IS 5182 (Part 25): 2018
National Ambient Air Quality Standards (2009) for Concentration in Ambient Air for Industrial, Residential, Rural & Other areas.			100 (24 hours)	60 (24 hours)	80 (24 hours)	80 (24 hours)	100 (8 hours)	400 (24 hours)

Note: BDL (Below Detection Limit) of O_3<20 $\mu g/m^3$; NH_3<20 $\mu g/m^3$
Abbreviation: FWIM- Field Work Instruction Manual

Prepared by
Rashmi
Rashmi Gupta
Administrative Manager

Checked by
Marisha
Dr. Marisha Sharma
Authorised Signatory

- end of report -

NOTES:
- *The results indicated only refer to the tested samples and listed parameters and do not endorse any product*
- *Total liability of the laboratory is limited to the invoice amount*
- *This certificate shall not be reproduced wholly or in part without prior written consent of the laboratory*
- *Unused balance of samples received shall be destroyed after one month from the date of issue of test report, unless other wise specified*
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- *Complaint register is available with the laboratory, in case required*

An ISO 9001 : 2015 approved company

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Sample Reg. No	:	MMA/05-23/2.1-2.4
Date(s) of Sampling	:	03/05/2023 to 07/05/2023
Date(s) of Receipt	:	16/05/2023
Date(s) of Testing	:	16/05/2023 to 23/05/2023
Date of Report	:	25/05/2023
Test Report No.	:	MMA/05-23/34
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AMBIENT AIR QUALITY TEST RESULTS

Sl. No	Date of Sampling	Location	CO (mg/m^3)	BaP (ng/m^3)	C_6H_6 ($\mu g/m^3$)	Pb ($\mu g/m^3$)	As (ng/m^3)	Ni (ng/m^3)
1	03-04/05/2023	Plant Area	0.184	N.D	N.D	BDL	BDL	BDL
2	04-05/05/2023	Chaliyama Village	0.176	N.D	N.D	BDL	BDL	BDL
3	05-06/05/2023	Bankasai Village	0.151	N.D	N.D	BDL	BDL	BDL
4	06-07/05/2023	Gaisuti Village	0.131	N.D	N.D	BDL	BDL	BDL
Protocol of Analysis			Electro- chemical Detection	IS:5182 (Part 12): 2004, RA 2019	IS:5182 (Part 11): 2006, RA 2017	IS 3025 (Part 2): 2019		
National Ambient Air Quality Standards (2009) for Concentration in Ambient Air for Industrial, Residential, Rural & Other areas.			2 (8 Hourly)	1 (Annual)	5 (Annual)	1.0 (24 hours)	06 (Annual)	20 (Annual)

Note: BDL (Below Detection Limit) of As < 0.4 ng/m^3; Ni<0.6 ng/m^3; Pb<0.07$\mu g/m^3$, N.D: Not Detected,
Abbreviation: FWIM- Field Work Instruction Manual

Prepared by

Rashmi Gupta
Administrative Manager

Checked by

Dr. Marisha Sharma
Authorised Signatory

- end of report -

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