



उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड
UTTAR PRADESH POLLUTION CONTROL BOARD



पत्रांक संख्या-1109117/सी-5/95/OAM 343/24

दिनांक 05/04/24

To,

The Registrar General,
Principal Bench,
Hon'ble National Green Tribunal,
Copernicus Marg, New Delhi-110001

Sub: Response on behalf of Member Secretary, Uttar Pradesh Pollution Control Board in compliance to the order dated 12.02.2024 passed by the Hon'ble National Green Tribunal in Original Application No. 343 of 2022 In Re: Shani Pratap Singh Versus State of UP & Ors.

Sir,

In compliance to the order dated 12.02.2024 passed by this Hon'ble National Green Tribunal in O.A. No. 343/2022 In re: Shani Pratap Singh Versus State Of UP & Ors, the response on behalf of Member Secretary, UPPCB is hereby attached with a request that the same may be put up before Hon'ble National Green Tribunal for kind perusal and consideration.

Enclosure: As above.

Your's Sincerely,

(Dr. Ram Karan)

**Chief Environmental Officer,
Circle-5**

Copy to:

1. Shri Pradeep Mishra, Advocate for UPPCB.
2. Law Officer-I, UPPCB, Lucknow.
3. Regional Officer, UPPCB, Lucknow.

**Chief Environmental Officer,
Circle-5**

Response on behalf of Member Secretary, Uttar Pradesh Pollution Control Board in compliance to the order dated 12.02.2024 passed by the Hon'ble National Green Tribunal in Original Application No. 343 Of 2022 In Re: Shani Pratap Singh Versus State Of UP & Ors.

1- That vide its order dated 12.02.2024 this Hon'ble Tribunal has disposed of the present case by passing the following directions;

.....

6. *Learned Counsel appearing for the UPPCB submits that if Respondent No. 4 converts into zigzag technology in terms of Notification dated 22.02.2022 within the timeframe i.e. upto 22.02.2024, then Respondent No. 4 will be allowed to operate in terms of the CTO otherwise the CTO will be cancelled.*
7. *In view of the above, we do not deem it proper to keep the matter pending.*
8. *Hence, the OA is disposed of by directing the Member Secretary, UPPCB to file status report by 15.04.2024 before Registrar General of this Tribunal by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF.....*

2- That in pursuance to the order dated 12.02.2024 the Respondent No.-4 vide its letter dated 14.02.2024 has informed that the M/S Ram Shanker Brick Field (Trade Name Pradhan Brick Field-PBF) Village and Post-Tezwapur, Block-Trivediganj, Tehsil-Haidergarh, District-Barabanki, has been converted into zigzag technology in terms of Notification dated 22.02.2022. The true copy of the letter dated 14.02.2024 along with its respective annexure are being enclosed herewith as **Annexure No.-1** to this response.

3- That in compliance to the above direction passed by this Hon'ble Tribunal and in pursuance to the letter dated 14.02.2024, enclosed above, the officials of State Board has



143

inspected the Brick Kiln in question on 15.02.2024 and found that the same is being converted into zigzag technology. The copy of the inspection report dated 19.02.2024 is being enclosed herewith as **Annexure No.-2** to this response.

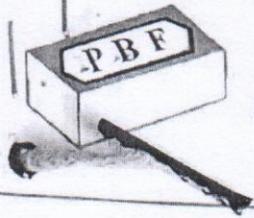
Therefore, the response on behalf of Member Secretary, Uttar Pradesh Pollution Control Board is being filed before this Hon'ble Tribunal for perusal and consideration of this Hon'ble Tribunal.

Date:



(Dr. Ram Karan)

CEO, Circle-5
Uttar Pradesh Pollution Control
Board, Lucknow



M/s Ram Shanker Brick Field

Village & Post Tejwapur, Haidergarh, Barabanki

Annexure-1

Residence : 570/95/1, V.I.P. Road, Virat Nagar, Alambagh, Lucknow.

Ref. No.

Date 14/02/2024

सेवा में
श्रीमान क्षेत्रीय अधिकारी महोदय
उद्योग प्रदूषण नियंत्रण बोर्ड
लखनऊ

विषय : मान्यनीय NGT द्वारा दिये गये निर्देशों के अनुपालन के
सम्बन्ध में

महोदय -

सविनय निवेदन है कि प्रायः द्वारा NGT के OA सं० 343/202
के अनुपालन में अपने महुँद के जंगल के पट्टी के परिवर्तन
कर लिया गया है

अवगत करना है कि महुँद को CBR। रेवेन्यू
रुटकी द्वारा प्राधिकृत टीन एनर्जी सिस्टम नो चार्ज द्वारा
दी गई फिजिबिलिटी रिपोर्ट एवं नक्शे के अनुसार परिवर्तित
किया गया है।

संगत नक़द.

- ① फिजिबिलिटी रिपोर्ट
- ② नक़सा

AAE/OA
M.A.S.

14/02/24

अवधीय
Tej-wapur
14/02/2024

SA(M-1)
मान्य

FEASIBILITY REPORT

C.B.R.I. TECHNOLOGY

ON

POLLUTION CONTROL IN BRICK
KILNS-ZIGZAG FIRING TECHNOLOGY IN
NATURAL AND HIGH DRAUGHT BRICK KILNS



TEAM ENERGY SYSTEMS

Authorised Licensee
Central Building Research Institute (C.B.R.I.)
Roorkee-247667

Noida:
286-287 Ecotech -1, extention
Near Kasna, Greater Noida – 201306

Chandigarh:
SCO 87, IIInd Floor,
Sector 4, Panchkula 134 112

This Feasibility Report belongs to

M/S RAM SHANKAR BRICK FIELD

VILL.- TEJWAPUR

TEHSIL- HAIDERGARH

DISTT- BARABANKI

STATE- UTTAR PRADESH

Dimension of High Draught Kiln

1. Kiln Dimensions

- Length (Island) : 74784 mm
- Width (Island) : 6688 mm
- Height : 3344 mm

2. - Draught : 50 mm water gauge
- Discharge Capacity : 425 cu.m
 - Fan :

3. - Number of feeding : 15
- holes in one row

4. - Chimney Details
- Height : 49248 mm

5. -Cleaning interval : One in fortnight
- of well and flue
- ducts (proposed)

6. -Coal Consumption :
- in one day (expected)

Average : 9-10 TON

7. - Brick Production per day (Approx) : 27965

8. -Number of chambers : 35

27/9/16
Rahul

CENTRAL BUILDING RESEARCH INSTITUTE, ROORKEE - 247667
TECHNOLOGY ON POLLUTION CONTROL IN BRICK KILNS-ZIGZAG
FIRING TECHNOLOGY IN NATURAL AND HIGH DRAUGHT BRICK
KILNS

INTRODUCTION:

The growth of industrial, commercial and residential sector in our country is closely linked with the rate of production of important building materials, namely 'Bricks'. There are about 40000 fixed chimney brick kilns in India. The annual turnover of the brick industry is estimated to be Rs. 8000 crores.

The problems of brick kiln Industry are closely connected with the issue of sustainable development, energy efficiency and environment friendliness. The government of India has notified that solid particle emissions from brick kiln should not exceed 250 mg/Nm³ shortly. With these provisions, Large number of Fixed chimney Bull Trench kilns have to change over to Zigzag type of firing with natural or high draught design brick kiln.

Appreciating the concern for environment friendly brick production, Central Building Research Institute, Roorkee has designed and developed following for brick kiln industry:

- Design of Gravitational settling Chamber for existing fixed chimney brick kilns.
- Design of zigzag firing technology with natural and high draught.

CBRI has perfected both the designs by actually installing them at brick kilns across India. The performance of both the designs are under constant observation. Several kiln owners, journalists and environmentalists have witnessed the successful performance of our designs.

TEAM ENERGY SYSTEMS
 23/09/16
 Rahul

2 EXECUTIVE SUMMARY

Team Energy Systems is authorised licensee of central building Research Institute (C.B.R.I.) Roorkee, a constituent establishment of CSIR, New Delhi. Team Energy Systems has been serving brick kiln industry for 18 years. Our endeavours has been for efficient technology in brick kiln industry. We have been constantly working with brick kiln owners associations for better combustion practices resulting in minimising fuel consumption and environment friendly technologies.

The scope of work for this project is outlined as follows:

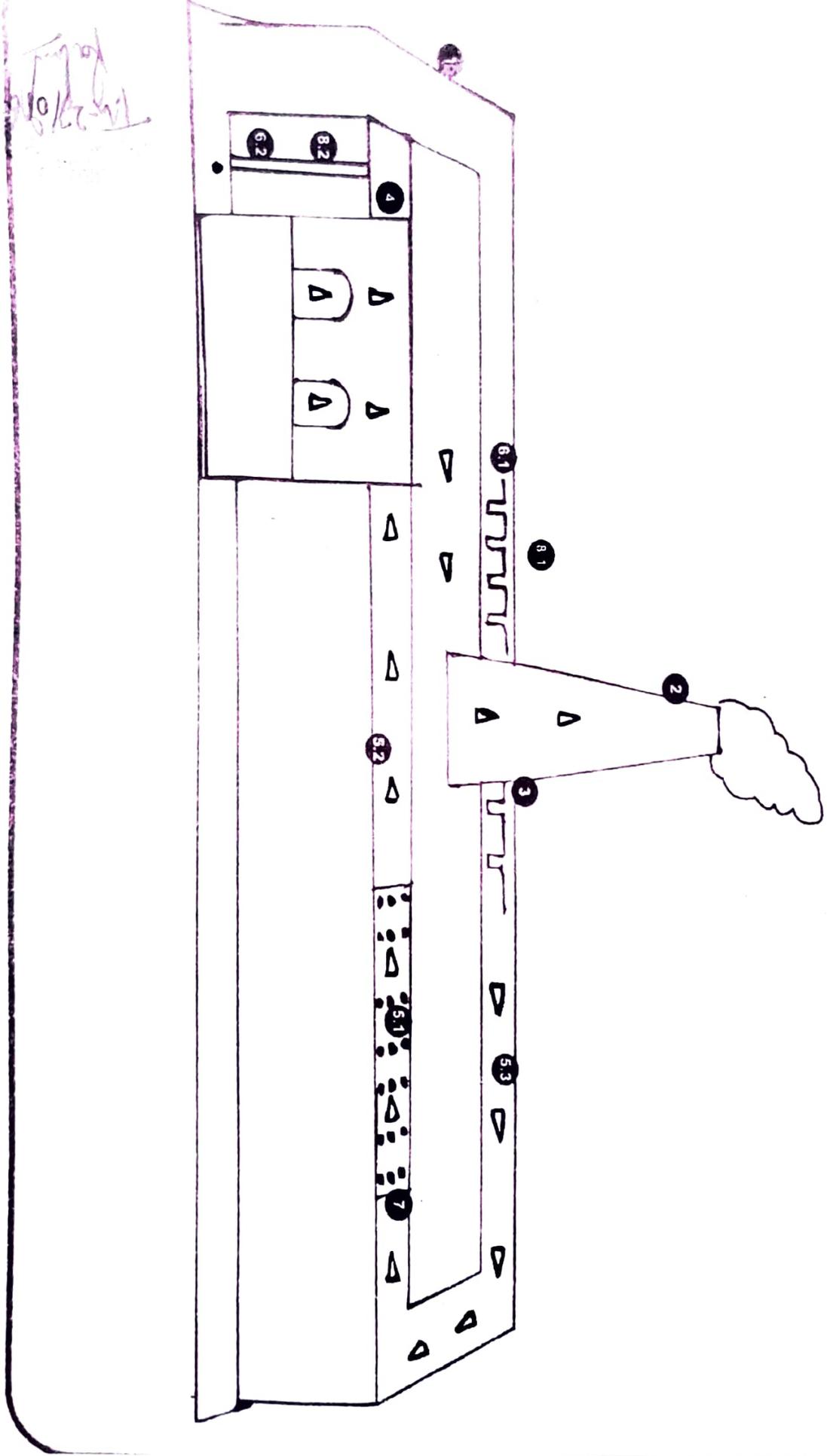
- Taking dimensions of brick kiln including size of tunnels, no of holes and size of island.
- Providing detailed design and drawings for zigzag firing technology as per kiln size.
- Guidance to brick kiln owner regarding construction of kiln and zigzag firing

Fixed Chimney Bull's Trench Kiln:

Initially Bull Trench Kilns had movable metallic chimneys which were banned through an MOEF notification in 1996. The conversion to Fixed Chimney Bull Trench Kilns reduced the particulate matter as well as fuel use compared to moving chimney Bull Trench Kilns. Due to better combustion and fuel saving, most of brick kilns have converted their kilns to Fixed Chimney Bull Trench Kiln.

Fixed Chimney Bull Trench Kiln has a fixed chimney which is constructed at the Center of the kiln and is connected to various chambers through a central smoke tunnel. The central tunnel is then connected to approach tunnels and flue holes to different chambers of the kiln. The chamber which is under fire is connected to the central tunnel while other chambers are disconnected by using dampers. In this way the flue gases from the chamber under fire are removed by the chimney. The provision of chimney helps to create natural draught so that fresh air may enter the kiln to burn coal and produce heat.

Fixed Chimney Bull Trench Kiln also suffers from incomplete combustion of fuel indicated by high CO₂ and CO concentration in flue gases. The emission through the chimney are primarily black in appearance due to unburnt particles besides obnoxious flue gases like SO₂ and NO₂. Moreover, the thick black smoke and SO₂ emission were more during the charging time and during idle time, almost grey smoke was



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1. High draught zigzag firing kiln is a moving fire kiln in which the fire moves in a closed rectangular circuit (central perimeter 120-140 meter) through the bricks stacked in the annular spaces between the outer and the inner wall of the kiln.
2. The chimney is usually of lower height (17-30 meter) and the kiln operates under the draught provided by a fan which draws the flue gases from the kiln and discharges it through the chimney. In the original design the chimney was located on one side of the kiln and was connected with the kiln through underground tunnel. However, in the modified designs the chimney is located at the centre of the kiln.
3. The bricks are stacked in such a manner to form distinct chambers (-2.5 meter long) and guide the air flow in a zigzag path. Zigzag flow increases the air flow length and turbulence in the air, thereby resulting in improved combustion and heat transfer rate and uniform temperature across the kiln cross section.
4. The kiln does not have a permanent roof and bricks stacked in the kiln are covered with a layer of ash and brick dust, which acts as a temporary roof and inhibits the heat loss as well as seals the kiln from leakages. The double layered outer wall with clay filled in between also reduces the heat loss.
5. There are three distinct zones in an operating high draught zigzag kiln.
 - 5.1 Brick firing zone where the fuel is fed and combustion is happening.
 - 5.2 Brick preheating zone (in front of firing zone) where green bricks are stacked and are preheated by the flue gases.
 - 5.3 Bricks cooling zone (behind the firing zone) where fired bricks are cooled by the cold air flowing into the kiln.
6.
 - 6.1 Air inlet: Air enters the kiln from back end of the cooling zone which is kept open to allow air entrance.
 - 6.2 Seal to guide flue gases: Front end of the preheating zone is sealed by a plastic sheet to guide the flue gas to the chimney through the flue gas duct system.
7. Firing zone extends to three chambers (-7.5meter) and solid fuels like firewood, agriculture residue atc are fed through the feed holes provided at the top of the kiln continuously by a single fireman standing at the top of the kiln.

Jan 27/09/06
Rabin
8. The fire travels a distance of 2 chambers (-5 meter) in 24 hours and fires 15,000 to 40,000 bricks daily. Fired bricks are unloaded from the front of the brick cooling zone (B 1) and an equivalent batch of green bricks is loaded ahead of the brick preheating zone (B2)

HIGH DRAUGHT KILN

The Kiln is an archless, top fed, coal fired continuous kiln in which the fire follows a zig-zag path. The kiln is divided into 32 chambers made through partition walls. Partition walls are built with unfired bricks, which get burnt along with the bricks set in the chamber, and are dismantled at the time of unloading bricks from the chamber. A chamber holds 15,000 bricks and normally two chambers are burned to obtain an output of 30,000 bricks per day. Overall dimensions of the kiln are 40.80 m x 18.90 m x 2.55 m. Each firing circuit is completed in 16 days producing 4.8 lakh bricks. In a chamber holding 15,000 bricks 18 feed holes are provided for feeding coal from top.

An induced draught fan located at the far end of the kiln creates draught. The discharging capacity of the fan is 425 m³/minute. It is worked by a 12 kw motor. The products of combustion, steam etc. are channelised through a system of flues and flow of gases is suitably controlled through cap dampers over the flue holes located in the outer wall. The damper shaft is provided with a hand wheel for easy operation from top of the wall. When in full firing order, the kiln operates on a draught of 50 + 5 mm (wg). During operation a very fast rate of fire travel of 17 to 18 metres per day is maintained which is three times as fast as traditional Bull's kiln. The kiln is highly fuel-efficient and the thermal efficiency is comparable with modern Hoffmann and tunnel kilns of equal capacities. Coal consumption is as low as 120 kg per thousand bricks (Calorific value 5,000 K cal/Kg). The Principal factors, which contribute to the attainment of high thermal efficiency of this kiln, can be summarised as follows:

Use of powerful I.D. fan, the strong draught produced by it, creates turbulence, which ensures efficient combustion of fuel through proper mixing of preheated air and fuel.

Fast removal of moisture from bricks in the drying and preheating chambers thus preventing moisture condensation in any part of the kiln.

Maintenance of exhaust flue gas temperature at as low as 90 to 100 C ensuring maximum recovery of heat from the waste gases.

Specially designed pattern of brick setting ensuring uniform heat distribution within the setting as well as fast rate of heat transfer from one chamber to the next. Induced high draught within the kiln increases the length of preheating zone and decreases the size of cooling zone, allowing for faster operation of kiln. High draught increase flue gas heat recovery hence increasing the preheating capacity of the kiln.

Induced high draught reduces the coal consumption and structural losses due to better propagation of fire travel within the combustion zone.

A high draught bull trench kiln using ID fan is more efficient than a normal kiln with natural draught in summer season when the ambient temperature is quite similar to the temperature of the flue gases inside the chimney. The reduced temperature gradient between the chimney flue gases and ambient air results in significant loss of pressure and slow propagation of fire travel within the kiln heating zones. The ID fan increases the draught inside the firing zone ensures substantial exhaust gases draught within the kiln operational zones.

Benefits of new energy efficient technology:

1. Technical benefits

- Fuel saving
- Improvement in product quality
- Increase in production
- Reduction in raw material consumption v
- Reduction in waste bricks

2. Monetary Benefits

3. Social Benefits

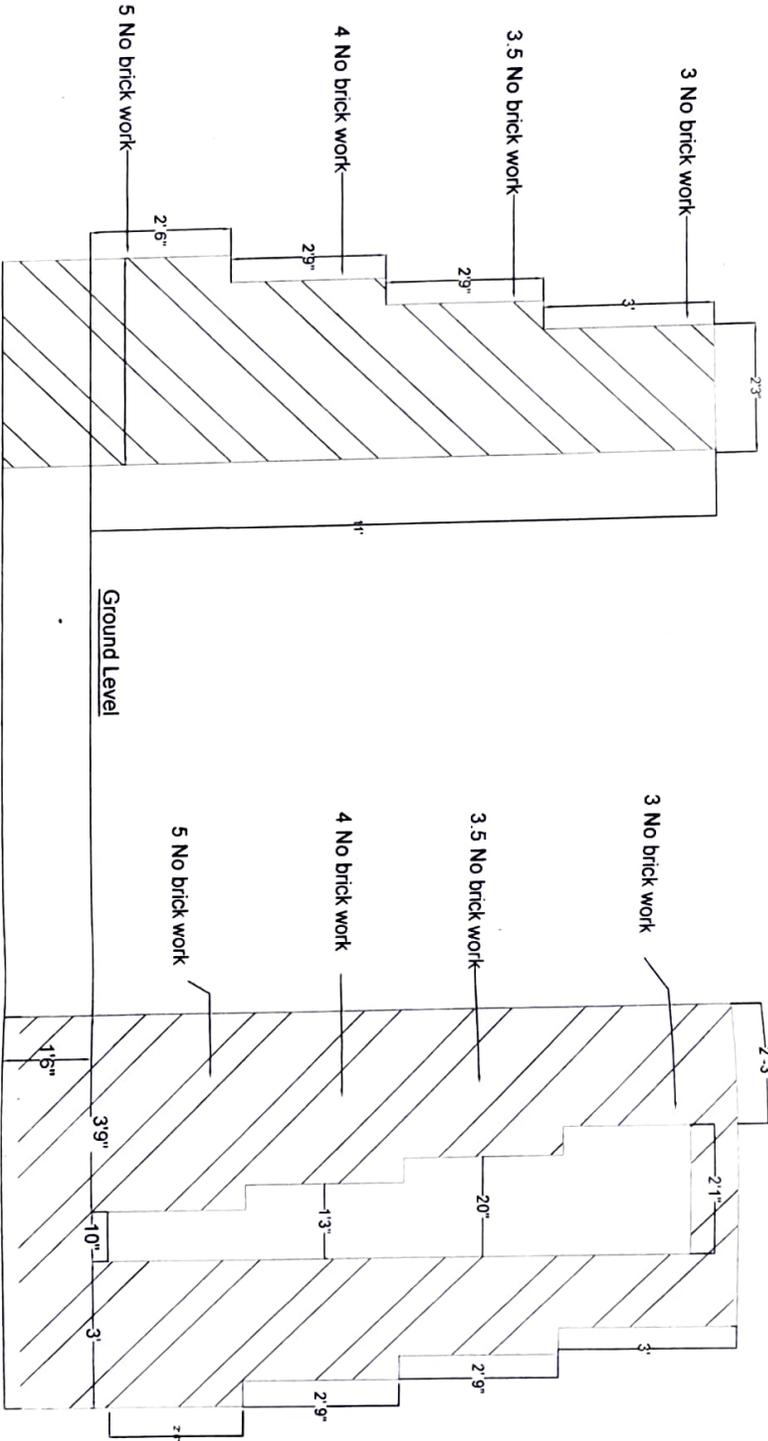
- Improvement in working environment
- Improvement in workers skill

4. Environment Benefits

- Reduction in effluent generation
- Reduction in Green House Gas emission such as CO₂, NO₂ etc
- Reduction in other emission such as SO₂ etc

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154



DETAILS OF INSIDE
WALL
SECTION AT 1 1

DETAILS OF OUTER WALL
SECTION AT 1 1

DESIGN : HIGH DRAUGHT
DOUBLE ZIG-ZAG KILN



PLAN & SECTION OF KILN

DRG No TM-23/096

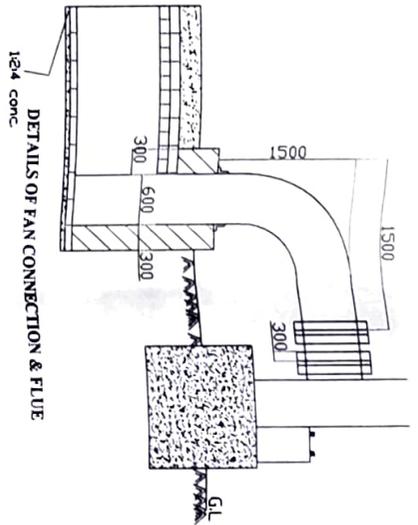
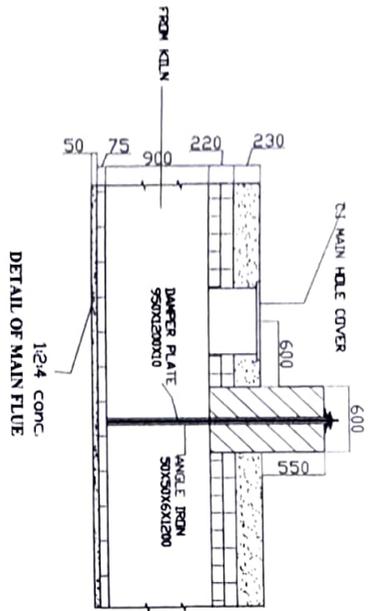
CLIENT

M/S RAM SHANKAR BRICK FIELD
VILL. - TEJWAPUR,
TEH - HAIDERGARH,
DISTT. - BARABANKI;
STATE - UTTAR PRADESH

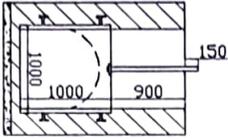
BY
TEAM ENERGY SYSTEMS

AUTHORISED LICENSEE
CENTRAL BUILDING RESEARCH
INSTITUTE, ROORKEE

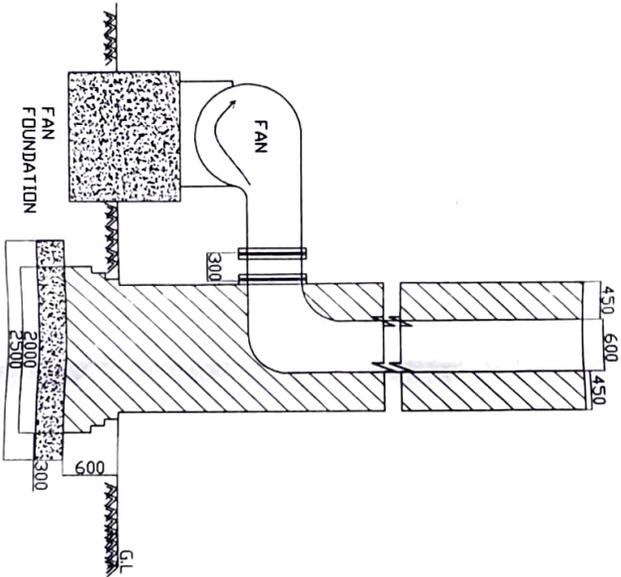
HIGH DRAUGHT BRICK KILN



DETAIL OF PLATE DAMPER



DETAIL OF FAN & CHIMNEY CONNECTION



PLAN & SECTION OF KILN

DRG No. **TM-23/096**

CLIENT

M/S RAM SHANKAR BRICK FIELD
 VILL. - TEJWAPUR,
 TEH - HAIDERGARH,
 DISTT. - BARABANKI;
 STATE - UTTAR PRADESH

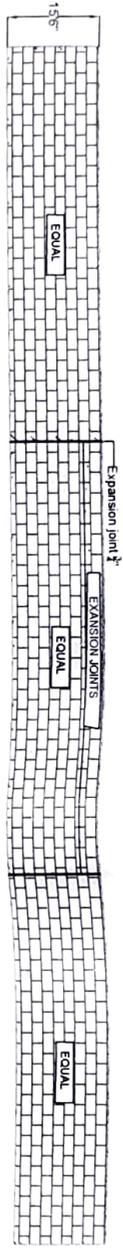
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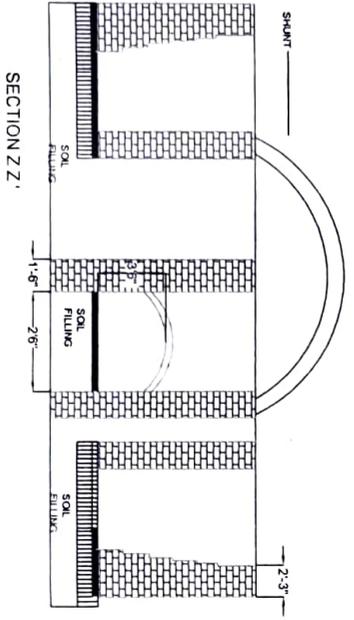
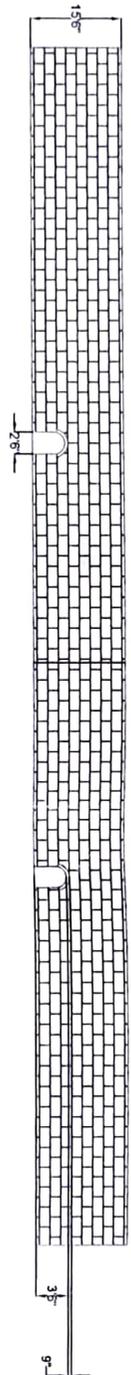
AUTHORISED LICENSEE
 CENTRAL BUILDING RESEARCH
 INSTITUTE, ROORKEE

DETAIL OF LANDLORD/KILN OWNER
 MR. ANURAG YADAV S/O LATE SHRI PREM KUMAR YADAV, LUCKNOW - 226003

FRONT ELEVATION OF WALL
DETAIL W



FRONT ELEVATION OF MIYANA
DETAIL X



HIGH-DRAUGHT BRICK KILN



PLAN & SECTION OF KILN

DRG No. **TM-23/096**

CLIENT

M/S RAM SHANKAR BRICK FIELD
VILL.- TEJAPUR,
TEH.- HAIDERGARH,
DISTT.- BARABANKI,
STATE-UTTAR PRADESH

BY

TEAM ENERGY SYSTEMS
AUTHORISED LICENSEE
CENTRAL BUILDING RESEARCH
INSTITUTE, ROORKEE



क्षेत्रीय कार्यालय
उ०प्र० प्रदूषण नियंत्रण बोर्ड
चतुर्थ तल, बी-ब्लॉक, पिकप भवन, विभूति खण्ड, गोमती नगर, लखनऊ।
ई-मेल : rolucknow@uppcb.in

पत्र संख्या : 2398/नहसा/484B/24

दिनांक : 19-2-24

सेवा में,

मुख्य पर्यावरण अधिकारी (वृत्त-5),
उ०प्र० प्रदूषण नियंत्रण बोर्ड,
लखनऊ।

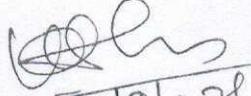
विषय:- माननीय राष्ट्रीय हरित अधिकरण, दिल्ली में योजित ओ०ए० संख्या-343/2022 सनी प्रताप सिंह बनाम स्टेट आफ यू०पी० एण्ड अदर्स में पारित आदेश दिनांक 12/02/2024 के अनुपालन के सम्बन्ध में।

महोदय,

कृपया उपरोक्त विषयक बोर्ड मुख्यालय के पत्र संख्या-एच 06974/सी-5/95/ओ०ए० सं०-343/24 दिनांक 15/02/24 के साथ संलग्न माननीय राष्ट्रीय हरित अधिकरण, दिल्ली में योजित ओ०ए० संख्या-343/2022 सनी प्रताप सिंह बनाम स्टेट आफ यू०पी० एण्ड अदर्स में पारित आदेश दिनांक 12/02/2024 का सन्दर्भ ग्रहण करने का कष्ट करें, उक्त के अनुपालन में सन्दर्भित ईट भट्ठा मैसर्स राम शंकर ब्रिक फील्ड (प्रधान ब्रिक फील्ड), ग्राम-तेजवापुर, ब्लॉक-त्रिवेदीगंज, तहसील-हैदरगढ़, जिला-बाराबंकी का निरीक्षण दिनांक 15/02/2024 को किया गया। निरीक्षण आख्या संलग्न कर आपके अवलोकनार्थ एवं अग्रिम आवश्यक कार्यवाही हेतु सादर प्रेषित है।

संलग्नक:- यथोपरि।

भवदीय,


(डॉ० उमेश चन्द्र शुक्ला)
क्षेत्रीय अधिकारी

19/2/24

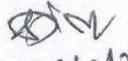
158 क्षेत्रीय कार्यालय
उ०प्र० प्रदूषण नियंत्रण बोर्ड,
लखनऊ

माननीय राष्ट्रीय हरित अधिकरण, दिल्ली में योजित ओ०ए० संख्या-343/2022 सनी प्रताप सिंह बनाम स्टेट आफ यू०पी० एण्ड अदर्स में पारित आदेश दिनांक 12/02/2024 के अनुपालन में सन्दर्भित ईट भट्टे के सम्बन्ध में निरीक्षण आख्या:-

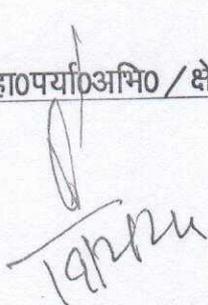
कृपया बोर्ड मुख्यालय के पत्र संख्या-एच०6974/सी-5/95/ओ०ए० सं०-343/24 दिनांक 15/02/24 के साथ संलग्न माननीय राष्ट्रीय हरित अधिकरण, दिल्ली में योजित ओ०ए० संख्या-343/2022 सनी प्रताप सिंह बनाम स्टेट आफ यू०पी० एण्ड अदर्स में पारित आदेश दिनांक 12/02/2024 के अनुपालन में सन्दर्भित ईट भट्टा मैसर्स राम शंकर ब्रिक फील्ड (प्रधान ब्रिक फील्ड), ग्राम-तेजवापुर, ब्लाक-त्रिवेदीगंज, तहसील-हैदरगढ़, जिला-बाराबंकी का निरीक्षण दिनांक 15/02/2024 को किया गया। निरीक्षण के समय इकाई प्रतिनिधि के रूप में श्री राजेश वर्मा (प्रोपराइटर) उपस्थित थे। निरीक्षण आख्या निम्नवत् है:-

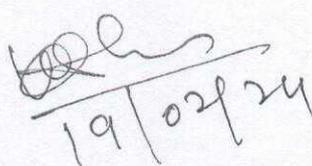
1. सन्दर्भित ईट भट्टा मैसर्स राम शंकर ब्रिक फील्ड (प्रधान ब्रिक फील्ड), ग्राम-तेजवापुर, ब्लाक-त्रिवेदीगंज, तहसील-हैदरगढ़, जिला-बाराबंकी में वर्ष-1997 से स्थापित एवं संचालित है।
2. निरीक्षण के समय ईट भट्टे में ईट भराई का कार्य होता पाया गया।
3. उक्त सन्दर्भित ईट भट्टे का पूर्व में संयुक्त निरीक्षण दिनांक 18/11/2022 को किया गया था, जिसे बोर्ड मुख्यालय के पत्र संख्या-एच 86816/सी-5/95/ओ०ए० न०-343/2023 दिनांक 04/01/2023 के द्वारा दिनांक 05/01/2023 को माननीय एन०जी०टी० में दाखिल किया गया था। उक्त संयुक्त आख्यानुसार पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार, नई दिल्ली द्वारा जारी अधिसूचना दिनांक 22/02/2022 के अनुसार जारी अधिसूचना दिनांक से 02 वर्ष की अवधि में सन्दर्भित ईट भट्टे को जिग-जैग पद्धति में परिवर्तित किये जाने हेतु इस कार्यालय द्वारा ईट भट्टे को दिनांक 15/12/2022 को नोटिस प्रेषित किया गया था।
4. अग्रेतर माननीय राष्ट्रीय हरित अधिकरण, दिल्ली में योजित ओ०ए० संख्या-343/2022 सनी प्रताप सिंह बनाम स्टेट आफ यू०पी० एण्ड अदर्स में पारित आदेश दिनांक 06/10/2023 के अनुपालन में संयुक्त समिति द्वारा पुनः दिनांक 07/12/2023 को निरीक्षण किया गया। उक्त निरीक्षण के दौरान सन्दर्भित ईट भट्टा आफ सीजन होने के कारण बन्द था तथा ईट भट्टे को जिग-जैग पद्धति में परिवर्तित किया जा रहा था।
5. ईट भट्टे के अद्यतन निरीक्षण दिनांक 15/02/2024 के समय सेण्ट्रल बिल्डिंग रिसर्च इन्स्टीट्यूट (सी०बी०आर०आई०), रुढ़की द्वारा अथराईज्ड मैसर्स टीम एनर्जी सिस्टम, नोयडा की प्रस्तुत फिजिबिलिटी रिपोर्ट के अनुसार सन्दर्भित ईट भट्टे द्वारा जिग-जैग पद्धति में परिवर्तित कर लिया गया है (फोटोग्राफ संलग्न है)।

उपरोक्त निरीक्षण आख्या आपके अवलोकनार्थ एवं अग्रिम आवश्यक कार्यवाही हेतु सादर प्रस्तुत है।


19/2/24
(हिमांशु सोनकर)
वैज्ञानिक सहायक

सहा०पर्या०अभि० / क्षेत्रीय अधिकारी महोदय,


19/2/24


19/02/24

मैसर्स रामशंकर ब्रिक्स प्रधास ब्रिक्स पील्स) आगते जवापुर, लोक-
 तिवेदी गेज, तह-हदरगाढ़, जिला-वाराणसी

159

