

**BEFORE THE NATIONAL GREEN TRIBUNAL, PRINCIPAL BENCH
NEW DELHI**

OA No. 164/2018

IN THE MATTER OF:

ASHWANI KUMAR DUBEY ----- Petitioner / Applicant

-Vs-

UNION OF INDIA & ORS ----- Respondents

I N D E X

| Sl. Nos. | Particulars | Pages |
|-----------------|--|--------------|
| 1. | Reply Affidavit Filed on Behalf of the Pollution Control Board, Assam in compliance of the Order dated 02.11.2023 and 18.01.2024 of this Hon'ble Tribunal. | 1-3 |
| 2. | Copy of the Ash utilization data for the month of DEC -2023 (Annex-I) | |
| 3. | Copy of Guidelines of CPCB. (Annex-II) | |

FILED BY:



Avijit Roy

Advocate

**For the THE POLLUTION CONTROL
BOARD, ASSAM/Respondent**

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Email: avijitroy.aor@gmail.com

Filed On : .01.2024

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, NEW DELHI

Original Application No. 164/2018

IN THE MATTER OF:

ASHWANI KUMAR DUBEY

Petitioner(s)/ Applicant(s)



Versus

UNION OF INDIA & ORS

Respondent(s)

**REPLY AFFIDAVIT FILED ON BEHALF OF POLLUTION
CONTROL BOARD, ASSAM IN COMPLIANCE OF THE
ORDER DATED 02.11.2023 AND 18.01.2024 OF THIS
HON'BLE TRIBUNAL**

I, Sri Meghnad Nath, S/O Late Rameswar Nath, aged about 59 years, Resident of Saukuchi, Lohra in the District of Kamrup (Metro) Assam, do hereby solemnly affirm and duly authorized to state as follows:

1. That, this deponent is the Chief Environmental Engineer cum Nodal Officer (Legal) of Pollution Control Board, Assam (hereinafter referred to as the Board), and conversant with the facts and circumstances of the present case and is duly authorized to swear and affirm this instant affidavit. This instant affidavit is filed for limited purpose as directed by this Hon'ble Tribunal by its order dated 02.01.2023 and 18.01.2024.

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29.1.2024



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2. That, the answering respondent Board had gone through the report of Oversight Committee and Joint Committee in this connected matter uploaded on 15.01.2022 in the website of this Hon'ble Tribunal and begs to submit that the answering respondent had nothing to make any suggestion on the same .
3. That, the answering respondent begs to bring on record the following fact that –
- i) In the State of Assam, there is only one TPP unit viz. NTPC, Bongaigaon, and the unit is utilized 100% of its fly-ash, and the utilization of the fly-ash by the NTPC, Bongaigaon has been uploaded in the CPCB, MoEF & CC fly-ash portal. Copy of the ash utilization data for the month of DEC -2023 is enclosed as **Annexure I**.
 - ii) There is no such issue of air pollution from the stone crusher cluster, in the State of Assam, and the Board has been taking action as per the Guidelines prescribed by the CPCB for Stone Crusher. Copy of the Guidelines by CPCB is enclosed as **Annexure II**.
4. That in addition to the aforesaid submissions, it is therefore submitted that this answering Respondent shall abide by any/all orders or directions passed by this Hon'ble Tribunal.

I identified by me

Dilep Kr. Sharma
29-1-2024

Advocate's Book

Deeprina Nath

DEPONENT

I solemnly affirmed before me this day I certify that I read over and explained the contents to the declarant and that the declarant seemed perfect to understand them

PR
29.1.2024.



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VERIFICATION:

I, the deponent herein above, do hereby verify that the contents of the above affidavit are true and correct to the best of my knowledge and belief, that no part of it is false and nothing material has been concealed therefrom.

Verified at Guwahati on this 29th day of January, 2024.

Regina Prava

DEPONENT



Blk
29.1.2024.



Ash Availability & Utilization Portal

Add Ash Generation and Utilization



1006 (Type-1)

[Change Password \(/Account/ModifyProfile?useridn=9&userid=1006\)](#)

[Log off](#)

| | |
|--|---|
| Company Name | NTPC Limited |
| Plant Name | BONGAIGAON |
| For The Month and Year | December |
| | 2023 |
| | <input type="button" value="Get Data"/> |
| Coal Consumption (Lakh Metric Tonnes) | 2.62202 |
| Ash Content % | 35.28 |
| Fly Ash Gen. (Lakh Metric Tonnes) | 0.7400389 |
| Bottom Ash Gen.(Lakh Metric Tonnes) | 0.1850097 |
| Total (LMT) | 0.9250486 |
| Water consumption for slurry discharge | 0.0 |
| Waste Water From Ash Pond into Land / Water Body (m3): | 0.0 |
| PLF: | 100 |
| No of Units (MWh): | 0.0 |

Ash Utilization

| | Consumer Company Name * | Area of Usage* | Purpose* | Distance Range* | Type of Ash* | Quantity of Utilized Ash (Lakh Metric Tonnes)* | Amount Received power plant against sale of ash (Rs) |
|--|-------------------------|----------------|----------|-----------------|--|--|--|
| | Cement Industry | Cement | Pr | 100 KM t | Fly <input checked="" type="radio"/> Bottom <input type="radio"/> Pond <input type="radio"/> | 0.52538 | 0 |
| | Brick Industry | Brick/Bl | Wi | 100 KM t | Fly <input type="radio"/> Bottom <input type="radio"/> Pond <input checked="" type="radio"/> | 0.03598 | 0 |

| | |
|-----------------------------|---------|
| Fly Ash Utilization(LMT) | 0.52538 |
| Bottom Ash Utilization(LMT) | 0 |
| Ash Pond Utilization(LMT) | 0.03598 |

4955

| | |
|----------------------------|---------|
| Total Ash Utilization(LMT) | 0.56136 |
|----------------------------|---------|

| | |
|-----------------------------------|------------|
| Current Fly Ash Stock(LMT) | 0.2146589 |
| Current Bottom Ash Stock(LMT) | 0.1850097 |
| Current Ash disposed in Pond(LMT) | 0.3996686 |
| Previous Ash Pond Stock(LMT) | 25.2047982 |
| Total Ash Stock(LMT) | 25.5684868 |

Cancel

**Environmental Guidelines
for
Stone Crushing Units**



Central Pollution Control Board

Ministry of Environment, Forest and Climate Change

Parivesh Bhawan, East Arjun Nagar

Delhi-110032

(July, 2023)

1.0 Introduction

Stone crushing sector is an important industrial sector engaged in producing crushed stone of various sizes (40 mm.20 mm.10 mm. crushed sand, stone dust etc) depending upon the requirement which acts as raw material for various construction activities.

Stone crushing operation releases a substantial amount of fugitive dust, which not only pollute the environment, but also pose a health hazards to the workers and the surrounding population. The growth in infrastructure is leading to increase in demand of raw materials, thereby resulting in the need to set up new stone crushing units or increase production from existing units. This poses a challenge to maintain the ambient air quality, which is possible if environmental guidelines predetermined by the industry concerned are followed.

Inventory and information about stone crushing units gathered from 27 SPCBs/PCCs (Arunachal Pradesh, Andaman & Nicobar island, Assam, Bihar, Chandigarh, Chhattisgarh, Daman, Dadra & Nagar Haveli, Goa, Gujarat, Haryana, Himanchal Pradesh, Jharkhand, J&K, Karnataka, Kerala, Madhya Pradesh Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Sikkim, Tripura, Uttarakhand), and the data received indicates that there are about 16,931 stone crushing units with capacity ranges between 0.1 TPH to 1,400 TPH.

2.0 Classification of Stone Crushing Units

Based on the information received from SPCBs/PCCs, stone crushers may be classified into small, medium and large-scale in terms of production capacity.

| S.No. | Category | Production capacity (TPH) |
|-------|--------------|---------------------------|
| 1. | Small Scale | Up to 25 |
| 2. | Medium Scale | 26 to 100 |
| 3. | Large Scale | 100 above |

3.0 Stone Crushing Process

The stone crushing process can be broadly divided in following stages:

3.1 Transportation of raw material: Stones extracted from various sources are transported to stone-crushing units by means of trucks, trailers or automatic dumpers.

3.2 Primary crushing: Mined stones are fed directly into the primary crusher through stone feeders. The primary crusher breaks large stones and boulders into 100-140 mm size stones. Crushed stones are sent to secondary crusher for further reduction into smaller sizes. Various types of crushers are used in stone crushing industry. Jaw crushers are widely used as primary crushers.

3.3 Secondary crushing: After primary crushing, crushed stones are fed to secondary crushers through conveyor belts. In this stage, stones are further crushed to a size of 40-60 mm to 10 mm or even smaller. Stone crushing units use different types of crushers for secondary crushing. Granulator or cone crusher is usually used for secondary crushing.

3.4 Screening: From secondary crusher, crushed stones are transferred for screening through a conveyor belt. Screening is the process for segregating products of various sizes. Different mesh size screens are aligned one below the other and each screen is connected to a separate conveyor belt for discharging different size products. Mass that remains on the screen is called 'oversize' and material that passes through screen is called 'under size'. Oversize is returned to secondary crushers for further crushing and then again to screen. Under size is discharged through a 'telescopic chute' and screened products of various sizes are conveyed to stockpiles by belt conveyors. Different types of screens are used such as; grizzly-type screen, vibrating screen and rotary screen. Vibrating screens are most commonly used.

3.5 Tertiary crushing: Tertiary crushing is carried out in units that produce stone dust as their primary product. Dust is usually a by-product of stone crushing process. Units that produce dust, install a separate machine, usually roller crushers. Stones of size 10-20 mm are sent to roller crushers for grinding into fine dust.

3.6 Product storage and loading: After crushing and screening, final product is transferred to a conveyor belt which distributes the product into different stockpiles, depending on size of the product. The product/fines are either stored as stockpiles or directly loaded into trucks & dumpers and transported.

4.0 Environmental issues associated with Stone Crushing Units

The major environmental issue due to operation of a stone crushing unit is fugitive dust emissions which is contributed by the following processes:

- **Primary crushing:** Primary crushers breaks large boulders into smaller sizes. Crushing process as well as unloading of stones generate a substantial amount of fugitive dust. Mechanism for water sprinkling is provided to reduce fugitive dust. Some primary crushing areas are partially or completely covered with a shed as a measure to further prevent the fugitive dust emissions to surroundings, however at some places partial coverings provided which do not appear to be sufficient to such emissions.
- **Secondary crushing:** Compared to primary crushing, fugitive dust emitted at secondary crushing is relatively higher. Generally, insufficient covered shed provided in the process results in fugitive emissions.
- **Screening:** Screening process is also a source of fugitive dust emissions. As the material is conveyed to screen from secondary crusher, screen vibrates and thus, separates the material of different sizes resulting into huge amount of fugitive dust emissions. Generally, units provide covered shed and water sprinklers to combat

dust emissions however, improper design and operation of sprinklers and improper covering is an issue.

- **Tertiary crushing:** Fugitive emissions are generated during grinding of stones into fine dust.
- **Conveyor Belt:** Conveyor belts are primary means of transferring raw materials and products from one end to the other. Movement of products on the conveyor belts is a potential source of fugitive dust emissions. To reduce dust emissions, water sprinkling arrangement is provided on each belt. Some units cover conveyor belts either with sheets or thick cloth to reduce dust emissions.
- **Product release and storage:** Fugitive emissions generated during transfer of material through telescopic chutes is lower than that generating during direct disposal of product on stockpile. Material, such as stone dust, stored in open areas is are also a potential source of fugitive dust emissions.
- Although no process waste water is generated from stone crushing units, however, water is used for sprinkling, conveyed to settling tanks of appropriate size which is recycled and reused in process.

5.0 Environmental Guidelines for Stone Crushing Units

The stone crushing units should adopt following environmental guidelines to prevent/suppress fugitive dust emissions from their operation:

| Source of emission | Measures to be Taken |
|---------------------------------------|---|
| Unloading of raw material for storage | Water sprinkling with adequately designed nozzle which produce tiny droplets of water should be provided during raw materials unloading . |
| Unloading of raw material into hopper | <ul style="list-style-type: none"> • Three sides and top should be covered and one side may be kept open for vehicular movement. • Water sprinklers should be provided on approach roads. |

| | |
|-------------------------------|--|
| Primary Crushing/ Jaw Crusher | <ul style="list-style-type: none"> • Crusher should be completely enclosed by G/MS sheets on top and at least three sides completely from the ground level. One side should have provision of movable sheet/door for movement/maintenance. • Primary crushers/jaw crushers should be covered with tarpaulin/cotton cloth/suitable materials to contain fugitive dust emissions (Figure-1) • Water sprinkler system with adequately designed nozzle which produce tiny droplets of water should be provided at primary crusher/jaw crusher so that fugitive emissions are contained and amount of water sprayed should be optimized. |
| Secondary Crushing | <ul style="list-style-type: none"> • Crusher should be completely enclosed by G/MS sheets on top and at least three sides completely from the ground level. One side should have provision of movable sheet/door for movement/maintenance. • Dry extraction cum bag filter followed by cyclone to be provided for control of emissions. |
| Screening | <ul style="list-style-type: none"> • Crusher should be completely enclosed by G/MS sheets on top and at least three sides completely from the ground level. One side should have provision of movable sheet/door for movement/maintenance. Door to be kept closed during operation. • Flexible covers where conveyors pass through the screen house should be installed at entries and exits of conveyors to screen house. • Dust extraction system connected with bag filter to be provided. • Provision of water mist sprinkling systems with adequately designed nozzle which produce tiny droplets of water should be made at inlet/outlet of screens. |
| Tertiary Crushing | <ul style="list-style-type: none"> • Crusher should be completely enclosed by G/MS sheets on top and at least three sides completely from the ground level. One side should have provision of movable sheet/door for movement/maintenance. Dust extraction system connected with bag filter to be provided. • Provision of water mist sprinkling system should be made with adequately designed nozzle which produce tiny droplets of water. |

| | |
|------------------|---|
| Conveyor Belts | Conveyor belts should be properly covered from node to node with a thick sheet of suitable material along with water sprinkling system with adequately designed nozzle which produce tiny droplets of water. |
| Discharge points | Flexible Telescopic chute from top of discharge point to the ground level should be provided (Figure-2 & Figure-2(a)). |
| Product storage | <ul style="list-style-type: none"> • Properly designed telescopic chute of adequate length of suitable material should be provided at ends of conveyor so that dust generated from this section is contained at source. • All open stockpiles for aggregates of size above 5 mm should be kept sufficiently wet by water spraying. • Stockpiles of aggregates of 5 mm size or less should be covered to ensure that same is not carried away (or whipped out) by wind. |

5.1 General Measures

- i. Wind breaking wall: GI/MS/brick wall should be provided along the periphery of crusher. Height of the wall should be 3-ft more than the highest node of the crusher.
- ii. Roads: Metaled/concrete roads should be provided within the premises. Ramps and the entire ground area inside the premises should also be metaled.
- iii. Housekeeping: To curb the air pollution in the crusher premises, arrangement of rotating water sprinkling system/fogger/Anti-smog gun should be provided. Water sprinklers should have adequately designed nozzle which produce tiny droplets of water, as such system is more effective in dust control with significant reduction in consumption of water. Fine dust accumulated and bag filters in the crushing area should be cleaned at regular intervals and the collected dust should be stored in sacks for further sale or disposal.
- iv. Plantation: 2-3 rows of tall trees should be planted around the periphery of crusher.
- v. Housing should be open for movement of mechanical drivers, conveyor belts, etc. should be sealed properly with flexible rubber flaps.

- vi. Name of the unit, contact details of the owner and address of the unit, plant capacity and date of issue of CTE/CTO from SPCBs/PCCs should be displayed on the display board at the entrance.
- vii. Transportation: Vehicles carrying any kind of material should be completely covered.
- viii. Regular wetting of roads should be done to suppress dust within the premises to control dust emission re-suspension.
- ix. Water consumption and handling: Unit should provide settling tanks of appropriate size and recycle & reuse of the water in process. Crusher should provide a water storage tank with adequate capacity. In case of use of groundwater, stone crushing unit should obtain permission to extract groundwater from the Central Ground Water Authority (CGWA)/Ground Water Department (GWD) of the State/UT. Unit should maintain proper log book of consumption of fresh water. Depending on availability, efforts may be made to use STP treated water instead groundwater to control emissions from process activities.

6.0 Regulatory/Monitoring Mechanism for Stone Crushing Unit

- i. Stone crushing unit should obtain Consent to Establish (CTE) and Consent to Operate (CTO) from the concerned SPCBs/PCCs.
- ii. Unit while applying for CTO/renewal of consent, should upload the duly filled checklist attached at **Annexure-1** along with digitally tagged photographs and videos of the crushing unit to ensure compliance of the conditions mentioned in the guidelines. SPCBs/PCCs should digitally verify the said conditions before issuance of CTE/CTO/renewal of consent.
- iii. CCTV/PTZ cameras should be installed at the entrance and all corners of the premises of the unit covering entire area with minimum of 30 days data storage.
- iii. Stone crushing unit shall comply with emission norms prescribed under the Environment (Protection) Rules, 1986 and conditions laid down in CTO by concerned SPCB/PCC.

- v. Online/manual ambient air monitoring systems to be installed in crusher zone as per CPCB/SPCB guidelines – in upwind and downwind directions.
- vi. Stone crushing unit should develop green belt as per the plan approved by concerned Department of the State/UT.
- vii. Local authorities should associate with stone crusher associations for the construction of metalled road in the entire crusher zone.
- viii. A District Level Committee should be constituted under chairmanship of District Magistrate/Deputy Commissioner so that surprise inspections for surveillance of stone crushing units located under their jurisdiction can be carried out on regular basis.
- ix. Health survey of workers should be carried out by the stone crusher on half-yearly basis.
- x. New Crushers should be allowed to operate only in dedicated crusher zones as per the siting policies of SPCBs/PCCs.
- xi. Stone crusher unit should be operated only during day time (i.e. 6.00 AM to 10.00 PM) to avoid inconvenience to the nearby residents due to ambient noise.



Figure-1: Covering of Primary/Jaw crusher



Figure-2: Chute from top of discharge point



Figure-2(a): Chute from top of discharge point

Annexure-1

Format/Checklist for SPCBs/PCCs before issuance of CTE & CTO

| S. No. | Fugitive Emission Source Locations | Checklist for compliance of conditions of Environmental guidelines | Yes/No |
|----------------|---|--|--------|
| 1. | Unloading area of raw material, primary crusher, Screener, conveyors belts and transfer points | Water sprinklers installed with adequate designed nozzles (Upload photo/videos). | |
| 2. | Primary crushers, Secondary crushers, Screeners and tertiary crushers | Enclosures by GI/MS sheets on top and at least three sides completely from the ground level (Upload photo/videos). | |
| 3. | Secondary, Tertiary crushers and Screener | Dry extraction cum bag filter followed by cyclone. (Upload photo). | |
| 4. | Covering of Conveyor belts from node to node with a thick sheet of suitable material | Covering of Conveyor belts (Upload photo). | |
| 4 | At discharge points | Flexible Telescopic chute from top of discharge point to the ground level (Upload photo). | |
| 5 | GI/MS/brick wind breaking wall of 3-ft more than the highest node of the crusher along the periphery of crusher | Wind breaking wall (Upload photo) | |
| General | | | |
| 6. | Wind breaking wall | GI/MS/brick wind breaking wall of 3-ft more than the highest node of the crusher along the periphery of crusher (Upload photo) | |
| 7. | Roads | Metalled/concrete roads within the premises. Ramps and the entire ground area inside the premises should also be metalled | |

| | | | |
|----|---|--|--|
| 8. | Suppression of dust within the premises | Arrangement of rotating water sprinkling system/fogger/Anti-smog gun in the premises to suppress dust within the premises to control dust emission re suspension | |
| 9. | Green belt | Plantation of 2-3 rows of tall trees around the periphery of crusher | |
| 9. | Display board | Display board at the entrance, having name of unit, contact details of owner and address of unit, plant capacity and date of issue of CTE/CTO from SPCB/PCC | |
| 10 | Covering of vehicles | Covering of vehicles carrying any kind of material . | |
| 11 | CCTV/PTZ camera | CCTV/PTZ cameras installed at the entrance and all corners of the premises of the unit covering entire area with minimum of 30 days data storage | |
| 12 | Photos/videos | Upload photographs/videos ensuring compliance of all conditions as mentioned in the guidelines while applying CTE/CTO/ Renewal | |
