

SL No. 13

**BEFORE THE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH KOLKATA
IN
O.A.No.154 of 2024 (EZ)
(Earlier O.A.No.722 of 2024 PB)**

IN THE MATTER OF:

News Item titled "Birbhum - a proposed coal mine in West Bengal and the related health hazards" appearing in The Hindu dated 12.05.2024

APPLICANT (S)

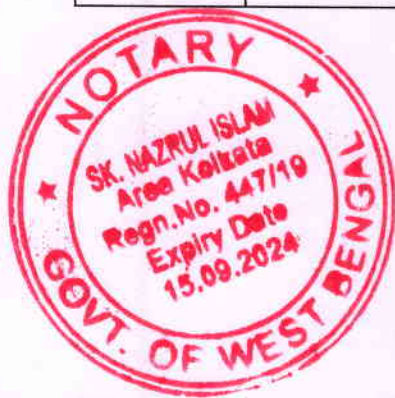
VERSUS

Central Pollution Control Board & Others.

RESPONDENT(S)

INDEX

SI No.	Particulars	Annexures	Page Nos.
1	Reply on behalf of Respondent No.01		1-5
2	Environmental standards for coal mines are notified by Ministry of Environment, Forest & Climate Change (under Environment (Protection) Rules, 1986	Annexure I	6-8
3	The Emission Standards for stone crushers have been notified under the Environment (Protection) Act, 1986 by the MoEF&CC vide Notification No. G.S.R. 742(E) dated 30th August, 1990	Annexure II	9-10
4	Environmental Guidelines for the Regulatory/ Monitoring Mechanism of the stone crushing units, 2023	Annexure III	11-22



Mrinal Kanti Biswas

Mrinal Kanti Biswas

Regional Director & Scientist E,
CPCB, Kolkata

Filed through

Supendrakem
Counsel

Dated: 3/9/2024
Place: Kolkata

03 SEP 2024

**BEFORE THE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH KOLKATA**

IN

**O.A.No.154 of 2024 (EZ)
(Earlier O.A.No.722 of 2024 PB)**



IN THE MATTER OF:

News Item titled "Birbhum - a proposed coal mine in West Bengal and the related health hazards" appearing in The Hindu dated 12.05.2024

APPLICANT (S)

VERSUS

Central Pollution Control Board & others

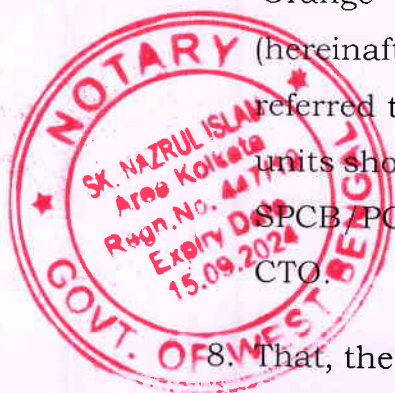
RESPONDENT(S)

**REPLY ON BEHALF OF THE RESPONDENT NO. 01: CENTRAL POLLUTION
CONTROL BOARD (CPCB)**

1. That, Hon'ble NGT vide order dated 03.07.2024 has sought the reply of respondents, including Central Pollution Control Board (hereinafter referred to as "CPCB") in the instant matter. Thereby, the reply is made in succeeding paragraphs.
2. That, CPCB is a Statutory Board constituted under Section 3 of The Water (Prevention and Control of pollution) Act, 1974 (hereinafter referred to as "Water Act, 1974"). It performs the functions under The Water Act, 1974, The Air (Prevention and Control of Pollution) Act, 1981 (hereinafter referred to as "Air Act, 1981") and The Environment (Protection) Act, 1986.
3. That, the instant suo-motu case is related to news article published in the newspaper stating allegations about pollution and health related problems associated with Stone Crushing Industries and proposed Coal Mining Project in Birbhum, Kendrapada, West Bengal. This matter was heard before the Hon'ble National Green Tribunal (hereinafter referred to as "Hon'ble NGT"), Principal Bench and was subsequently transferred to the Hon'ble NGT, Eastern Zone Bench.
4. That, with regard to the averments related to the Coal Mining proposed in the Birbhum, it is humbly submitted that The Mines and Minerals (Development and Regulation) Act, 1957 and environmental laws - The

Water (Prevention and Control of Pollution) Act 1974, The Air (Prevention and Control of Pollution) Act, 1981 and The Environment (Protection) Act, 1986 are applicable on the coal mining industries in the country.

5. That environmental standards for coal mines are notified by Ministry of Environment, Forest & Climate Change (hereinafter referred to as "MoEF&CC") under Environment (Protection) Rules, 1986 (**Annexure-I**) and these standards are implemented by State Pollution Control Board (hereinafter referred to as "SPCB") through consent mechanism and compliance monitoring.
6. That the Project proponent / mine owner are required to obtain Environmental Clearance (hereinafter referred to as "EC") for mining of coal as per Environment Impact Assessment Notification 2006 and amendments thereto issued by MoEF&CC. Project proponent / mine owner have to carry out Environment Impact Assessment and prepare Environment Management Plan for obtaining EC for mining activities as per Environment Impact Assessment Notification 2006 issued by MoEF&CC. Project Proponent / mine owner are also required to submit six monthly compliance report of the EC conditions to MoEF&CC, SPCB and CPCB.
7. That, with regard to the Stone crushing Units, it is humbly submitted that as per the modified directions dated March 07, 2016 issued by CPCB to all the State Pollution Control Board/ Pollution Control Committee (hereinafter referred as SPCBs/PCCs) under section 18(1)(b) of the Water Act, 1974 and the Air Act, 1981, "Stone Crushers" are categorized under 'Orange' Category and are required to obtain Consent to Establish (hereinafter referred to as "CTE") and Consent to Operate (hereinafter referred to as "CTO") from the concerned SPCB/PCC. The Stone crushing units should operate only after obtaining CTE and CTO from the concerned SPCB/PCC and shall comply with the conditions laid down in CTE and CTO.
8. That, the Emission Standards for stone crushers have been notified under the Environment (Protection) Act, 1986 by the MoEF&CC vide Notification No. G.S.R. 742(E) dated 30th August, 1990 (**Annexure-II**). The Stone crushing units have to comply with emission norms prescribed under the Environment (Protection) Rules, 1986. Further, CPCB formulated Environmental guidelines for Stone Crushing Units in July, 2023 and

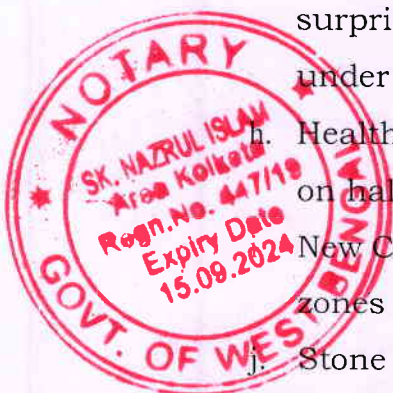


circulated to all the SPCBs/PCCs for its implementation (**Annexure-III**). The said guidelines stipulate the general and source specific measures required to be taken by stone crushing units to prevent/suppress dust emissions.

Para 6.0 of Environmental Guidelines for Stone Crushing Units - July, 2023 is 'Regulatory/Monitoring Mechanism for Stone Crushing Unit', as reproduced below.

- a. Stone crushing unit should obtain necessary permissions regarding Consent to Establish (CTE) and Consent to Operate (CTO) from the concerned SPCBs/PCCs
- b. 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.
- c. 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.
- d. Online/manual ambient air monitoring systems to be installed in crusher zone as per CPCB/SPCB guidelines - in upwind and downwind directions.
- e. Stone crushing unit should develop green belt as per the plan approved by concerned Department of the State/UT.
- f. Local authorities should associate with stone crusher associations for the construction of metaled road in the entire crusher zone.
- g. 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.
- h. Health survey of workers should be carried out by the stone crusher on half-yearly basis.
- i. New Crushers should be allowed to operate only in dedicated crusher zones as per the siting policies of SPCBs/PCCs.
- j. 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.

9. That, the answering respondent craves leave of the Hon'ble Tribunal to file additional reply, in future, if required.



**BEFORE THE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH KOLKATA**

**IN
O.A.No.154 of 2024 (EZ)
(Earlier O.A.No.722 of 2024 PB)**



IN THE MATTER OF:

News Item titled "Birbhum - a proposed coal mine in West Bengal and the related health hazards" appearing in The Hindu dated 12.05.2024

APPLICANT (S)

VERSUS

Central Pollution Control Board & Others.

RESPONDENT(S)

AFFIDAVIT

I, Mrinal Kanti Biswas, son of Shri Saroj Kumar Biswas, aged about 42 years, having office at the Regional Directorate, Central Pollution Control Board, Southend Conclave' Block No.502, 5th& 6th Floor, 1582, Rajdanga Main Road, Kolkata-700107, do hereby solemnly affirm and sincerely state as follows: -

1. That the deponent is authorized representative to represent the Respondent CPCB in the present case, and as such, I am well conversant with the facts and circumstances of the present case on the basis of the information derived from the official records, and hence, I am competent and authorized to verify, sign and swear this affidavit on behalf of the Respondent CPCB.
2. That the accompanying reply may be read part and parcel of the present affidavit as I am competent to swear this affidavit.
3. That the accompanying reply has been drafted and filed under my instructions and authority the contents thereof are true and correct on the basis of the record maintained during ordinary course of business of CPCB and available records and documents and the contents of the same are read over and explained to me and are not repeated herein for the sake of brevity.

[Signature]
DEPONENT

Identified by me

[Signature]
Advocate

En N - WB-535-A/1998

**Solemnly Affirmed and
Declared before me U/S 139
CPC, U/S 297 (C) CRPC**

[Signature]
Notary
SK. Nazrul Islam
Notary, Govt. of W.B.
Regn. N. 447/19
City Civil Court, Calcutta

03 SEP 2024

VERIFICATION

3rd
Verified at Kolkata on this day of September 3 2024 that the contents of the above reply are correct and true on the basis of the record of the cases as mentioned in the day to day affairs of the CPCB. Nothing has been concealed therefrom or mis-stated.

Verified at Kolkata on this the... 3 Day of 09 2024.

Identified by me

Surendrakumar
Advocate

A. S. S.
DEPONENT

Enn - WB 535-A/1998



¹[90. STANDARDS FOR COAL MINES**1. AIR QUALITY STANDARDS**

The Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM), Sulphur dioxide (SO₂) and Oxides of Nitrogen (NO_x) concentration in downwind direction considering predominant wind direction, at a distance of 500 metres from the following dust generating sources shall not exceed the standards specified in the Tables I, II and III given below:

Dust Generating Sources

Loading or unloading, Haul road, coal transportation road, Coal handling plant (CHP), Railway sliding, Blasting, Drilling, Overburden dumps, or any other dust generating external sources like coke ovens (hard as well as soft), briquette industry, nearby road etc.

Table-I

Category	Pollutant	Time weighted average	Concentration in Ambient Air	Method of Measurement
1	2	3	4	5
I New Coal Mines (Coal Mines commenced operation after the date of publication of this notification)	Suspended Particulate Matter (SPM)	Annual Average *	360 µg/m ³	- High Volume Sampling (Average flow rate not less than 1.1 m ³ /min)
		24 hours **	500 µg/m ³	
	Respirable Particulate Matter (size less than 10 µm) (RPM)	Annual Average *	180 µg/m ³	Respirable Particulate Matter sampling and analysis
		24 hours **	250 µg/m ³	
Sulphur Dioxide (SO ₂)	Annual Average *	80 µg/m ³	- Improved west and Gaeke method	
	24 hours **	120 µg/m ³	- Ultraviolet fluorescense	
Oxide of Nitrogen as NO ₂	Annual Average *	80 µg/m ³	- Jacob & Hochheiser Modified (Na-Arsenic) Method	
	24 hours **	120 µg/m ³	- Gas phase Chemiluminescence	

¹ Serial No.90 to 93 and entries relating thereto were inserted by Rule 2(1) of the Environment (Protection) Amendment Rules, 2000 notified vide notification G.S.R. 742(E), dated 25.9.2000.



Table-II

Category	Pollutant	Time weighted average	Concentration in Ambient Air	Method of Measurement
1	2	3	4	5
II Existing coal fields/mines given below: Karanpura, Ramgarh, Giridih, Rajhara, Wardha, Nagpur, Silewara, Pench Kanhan, Patharkhera, Umrer, Korba, Chirimiri, Central India Coalfields, (including Baikunthpur, Bistrampur), Singrauli, Ib Valley, Talcher, Godavary Valley and any other	Suspended Particulate Matter (SPM)	Annual Average * 24 hours **	430 $\mu\text{g}/\text{m}^3$ 600 $\mu\text{g}/\text{m}^3$	- High Volume Sampling (Average flow rate not less than 1.1 m^3/minute)
	Respirable Particulate Matter (size less than 10 μm) (RPM)	Annual Average * 24 hours **	215 $\mu\text{g}/\text{m}^3$ 300 $\mu\text{g}/\text{m}^3$	Respirable Particulate Matter sampling and analysis
	Sulphur Dioxide (SO_2)	Annual Average * 24 hours **	80 $\mu\text{g}/\text{m}^3$ 120 $\mu\text{g}/\text{m}^3$	1. Improved west and Gaeke method 2. Ultraviolet fluorescense
	Oxide of Nitrogen as NO_2	Annual Average * 24 hours **	80 $\mu\text{g}/\text{m}^3$ 120 $\mu\text{g}/\text{m}^3$	1. Jacob & Hochheiser Modified (Na-Arsenic) Method 2. Gas phase Chemiluminescence



Table-II

Category	Pollutant	Time weighted average	Concentration in Ambient Air	Method of Measurement
1	2	3	4	5
II. Existing coal fields/mines given below: Karanpura, Ramgarh, Giridih, Rajhara, Wardha, Nagpur, Silewara, PENCH Kanhan, Patharkhera, Umrer, Korba, Chirimiri, Central India Coalfields, (including Baikunthpur, Bistrampur), Singrauli, Ib Valley, Talcher, Godavary Valley and any other	Suspended Particulate Matter (SPM)	Annual Average * 24 hours **	430 $\mu\text{g}/\text{m}^3$ 600 $\mu\text{g}/\text{m}^3$	- High Volume Sampling (Average flow rate not less than 1.1 m^3/minute)
	Respirable Particulate Matter (size less than 10 μm) (RPM)	Annual Average * 24 hours **	215 $\mu\text{g}/\text{m}^3$ 300 $\mu\text{g}/\text{m}^3$	Respirable Particulate Matter sampling and analysis
	Sulphur Dioxide (SO_2)	Annual Average * 24 hours **	80 $\mu\text{g}/\text{m}^3$ 120 $\mu\text{g}/\text{m}^3$	1. Improved wet and Gaeke method 2. Ultraviolet fluorescence
	Oxide of Nitrogen as NO_2	Annual Average * 24 hours **	80 $\mu\text{g}/\text{m}^3$ 120 $\mu\text{g}/\text{m}^3$	1. Jacob & Hochheiser Modified (Na-Arsenic) Method 2. Gas phase Chemiluminescence



The Environment (Protection) Rules, 1986

431

Sr. No.	Industry	Parameter	Standards
1	2	3	4

* Separate standards for VSS, HSS, PBSW & PBCW as given in column 4 stands abolished

¹[(c) Standards for forage fluoride

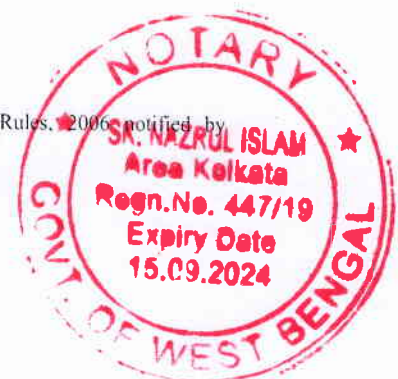
- Twelve consecutive months average - 40 ppm
- Two consecutive months average - 60 ppm
- One month average - 80 ppm]

*37. **STONE CRUSHING UNIT** Suspended Particulate Matter (SPM) The Standards consist of two paras :

- (i) **Implementation of the following Pollution Control measures:**
- (a) Dust containment cum suppression system for the equipment.
 - (b) Construction of wind breaking walls.
 - (c) Construction of the metalled roads within the premises.
 - (d) Regular cleaning and wetting of the ground within the premises.
 - (e) Growing of a green belt along the periphery.

¹ Inserted by Rule 2(IV)(b) of the Environment (Protection) First Amendment Rules, 2006 notified by G.S.R.46(E), dated 3.2.2006.

* Standards notified at Sl. No. 11 may also be referred.



Sr. No.	Industry	Parameter	Standards
1	2	3	4

(ii) Quantitative standard for SPM :

**[measured between three meters and ten metres from any processes equipment of a stone crushing unit shall not exceed 600 microgrammes per cubic metre] from a controlled isolated as well as from a unit located in a cluster should be less than 600 mg/Nm₃ ¹[xxx....]

38. PETROCHEMICALS EFFLUENTS (BASIC & INTERMEDIATES)

Ph	6.5 – 8.5
*BOD ² [(3days at 27°C)]	50
**Phenol	5
Sulphide (as S)	2
COD	
Cynide (as CN)	250
*** Fluoride (as F)	
Total suspended Solids	³ [100]
Hexavalent Chromium ³ [(as Cr)]	0.1
**** Total Chromium ³ [(as Cr)]	2.0

** Corrections have been made as per CORRIGENDUM Notification No. S.O. 8(E) dated 31.12.1990.

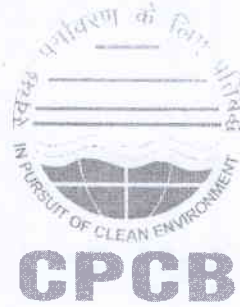
¹ The sentence 'The measurements are to be conducted at least twice a month for all the 12 month in a year' deleted as per CORRIGENDUM Notification S.O 8(E) dated 31.12.90.

² Substituted by Rule 2 of the Environment (Protection) Amendment Rules, 1996 notified by G.S.R.170(E), dated 2.4.1996 may be read as BOD (3 days at 27°C) wherever BOD 5 days 20°C occurred.

³ Corrected as per CORRIGENDUM Notification S.O. 8(E) dated 31.12.1990.



**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.



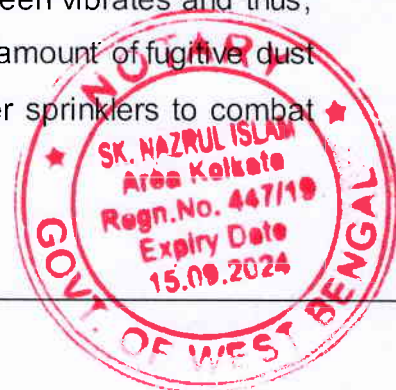
3.5 Tertiary crushing: Tertiary crushing is carried out in units that produce stone dust as their primary product. Dust is usually a by-product of stone crushing process. Units that produce dust, install a separate machine, usually roller crushers. Stones of size 10-20 mm are sent to roller crushers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



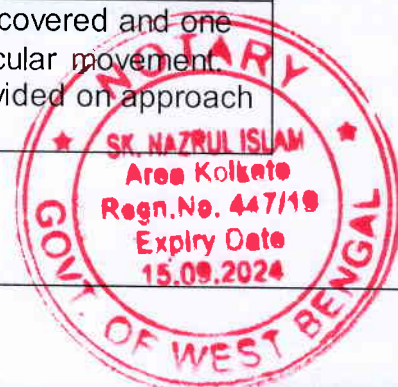
dust emissions however, improper design and operation of sprinklers and improper covering is an issue.

- **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 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.



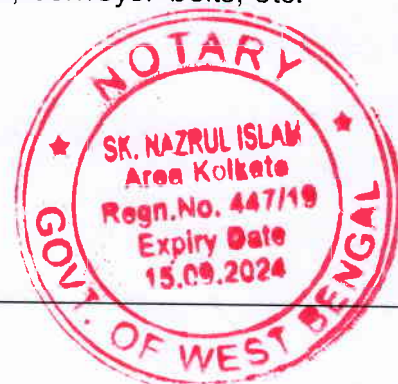
Primary Crushing/ Jaw Crusher	<ul style="list-style-type: none"> • Crusher should be completely enclosed by GI/MS sheets on top and at least three sides completely from the ground level. One side should have provision of movable sheet/door for movement/maintenance. • Primary crushers/jaw crushers should 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 GI/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 GI/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 GI/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

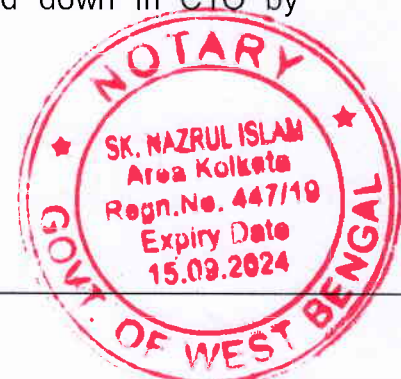
- i. Wind breaking wall: GI/MS/brick wall should be provided along the periphery of crusher. Height of the wall should be 3-ft more than the highest node of the crusher.
- ii. Roads: Metaled/concrete roads should be provided within the premises. Ramps and the entire ground area inside the premises should 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

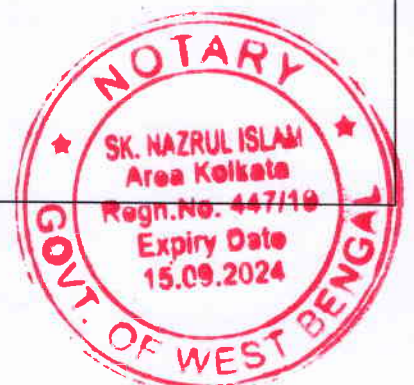
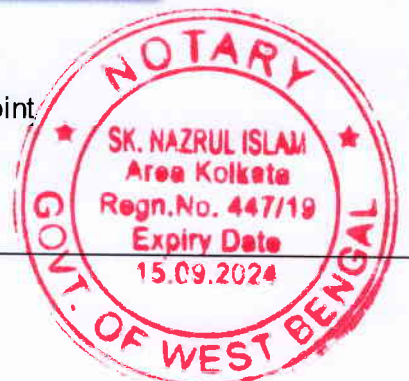




Figure-2: Chute from top of discharge point



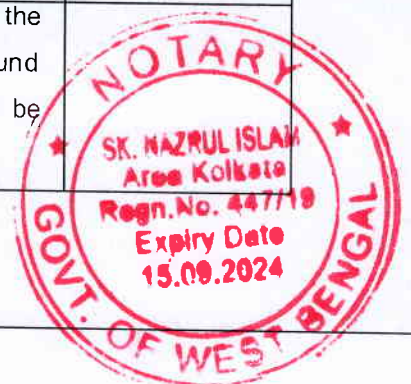
Figure-2(a): Chute from top of discharge point



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	

