



HARYANA STATE POLLUTION CONTROL BOARD
C-11, SECTOR-6, PANCHKULA
Ph-2577870-73 E-mail: hspcb scientist@gmail.com

Public Notice

Sealed quotations are invited from EPA (MoEF) approved Laboratories for testing of general metals i.e. Pb, Ni & As in PM₁₀ and selected metals/elements i.e. Pb, Ni, As, Al, Ba, Fe, & Sr in PM_{2.5} in Ambient Air Quality samples being collected by the Haryana State Pollution Control Board from 20 October, 2019 to 3rd November, 2019 at different 09 cities i.e. Panchkula, Ambala, Karnal, Panipat, Sonapat, Gurugram, Faridabad, Hisar and Rohtak as per the prescribed format provided in the terms and condition. The terms and conditions for the quotation can be downloaded from the website of Haryana State Pollution Control Board (www.hspcb.gov.in). Interested laboratories are advised to send the quotations to Haryana State Pollution Control Board, C-11, Sector-6, Panchkula on or before 1600 hrs on 29.10.2019.

Member Secretary
HSPCB

Sub: Terms & Conditions to invite the sealed quotations from EPA Approved laboratories for testing of metals in Ambient Air Quality Samples.

The judgement of Hon'ble Supreme Court of India, dated 23.10.2018 in writ petition (civil) No.728 of 2015 has directed CPCB and respective State Pollution Control Boards/Pollution Control Committees (SPCBs/PCCs) of the States and Union Territories shall carry out short-term monitoring in their cities 14 days (commencing from 7 days prior to Diwali and ending 7 days after Diwali) for the parameters namely, Aluminum, Barium, Iron apart from the regulatory parameters against the short-term Ambient Air Quality Criteria values (AAQCVs) proposed by CPCB with regard to bursting of firecrackers. This will help in generation of data on pollution caused by the bursting of firecrackers and would be helpful for regulation and control quantity of Aluminum, Barium and Iron used in the manufacture of firecrackers (website link: www.sci.gov.in/supremecourt/2015/32461_2015_judgement_23-oct-2018.pdf).

In compliance of above said judgement, CPCB has directed SPCBs/PCCs to carry out the ambient air quality monitoring and Noise monitoring during the Diwali Festival. The noise monitoring programme for pre-Deepawali and Deepawali day is as per Part-I. The scope of air quality monitoring during this year Deepawali is planned as mentioned in Part -II below.

Part-I: Noise Monitoring

This year, the festival of Deepawali falls on 27th October, 2019 (Sunday), Therefore, to conduct the noise monitoring on Pre-Deepawali day i.e. 21st October, 2019, (Monday) and Deepwali day on 27th October, 2019 (Sunday).

Part-II: Ambient air quality monitoring

In addition to the general parameters like PM₁₀, PM_{2.5}, SO₂, NO₂ and metals (Pb, Ni & As in PM₁₀) selected metals/elements (Pb, Ni As, Al, Ba, Fe, Sr in PM_{2.5}) are required to be monitored to assess the impact of firecracker bursting during Deepawali festival.

For analysis of regulatory parameters like PM₁₀, PM_{2.5}, SO₂, NO₂ and metals (Pb, Ni & As in PM₁₀) the CPCB Guidelines Volume I may be adopted. For Metal/Elements analysis in PM_{2.5} (PTFE Filter), EDXRF is the best option; however, other suitable method (ICP-MS/ICP-AES) may also be adopted. SPCBs/PCCs may analyse these samples in their own Laboratory or may engage EPA approved laboratory.

Haryana State Pollution Control Board is conducting the monitoring in 09 cities i.e. Panchkula, Ambala, Karnal, Panipat, Sonapat, Gurugram, Faridabad, Hisar and Rohtak. The sampling as per Annexure - I, II, III for ambient noise, PM₁₀ & PM_{2.5} and Gases air pollutants respectively is being done by HSPCB itself. It has been decided by the Board the samples collected by the Board will be got analyzed from the EPA approved laboratories for general metals i.e. Pb, Ni & As in PM₁₀ and selected metals/elements i.e. Pb, Ni, As, Al, Ba, Fe, & Sr in PM_{2.5}.

PM₁₀ is being monitored in 03 shifts (1st shift 6:00 AM to 02:00 PM, 2nd shift 2:00 PM to 10:00PM and 3rd shift 10:00 PM to 6:00AM) and PM_{2.5} for 24 hourly (6:00 AM to 6:00 AM) as per the annexure -II CPCB vide letter no. A21016/1/8-Mon./5783 dated 02.09.2019 (copy enclosed). Laboratories will have to analyze 03 GFA sheets for general metals i.e. Pb, Ni & As in PM₁₀ and one PTFE for selected metals/elements i.e. Pb, Ni, As, Al, Ba, Fe, & Sr in PM_{2.5}. The format of reporting results is as under:

Name of Location										
Date	Regulatory Parameters			Proposed New Parameters						
	Metals in PM₁₀			Metals Elements in PM_{2.5}						
	Pb (ug/m ³)	Ni (ug/m ³)	As (ug/m ³)	Pb (ug/m ³)	Ni (ug/m ³)	As (ug/m ³)	Al (ug/m ³)	Ba (ug/m ³)	Fe (ug/m ³)	Sr (ug/m ³)
20.10.2019										
21.10.2019										
22.10.2019										
23.10.2019										
24.10.2019										
25.10.2019										
26.10.2019										
27.10.2019										
28.10.2019										
29.10.2019										
30.10.2019										
31.10.2019										
01.11.2019										
02.11.2019										
03.11.2019										
*All values (24 hourly Avg.) are in ug/m ³										

In view of above, the Haryana State Pollution Control Board has invited Sealed quotations from from EPA (MoEF) approved Laboratories for testing of general metals i.e. Pb, Ni & As in PM₁₀ and selected metals/elements i.e. Pb, Ni, As, Al, Ba, Fe, & Sr in PM_{2.5} in Ambient Air Quality samples being collected by the Haryana State Pollution Control Board from 20 October,2019 to 3rd November, 2019 at different cities i.e. Panchkula, Ambala, Karnal, Panipat, Sonapat, Gurugram, Faridabad, Hisar and Rohtak as per the prescribed format provided in the terms and condition. The terms and conditions for the quotation can be downloaded from the website of Haryana State Pollution Control Board (www.hspcb.gov.in). Interested laboratories are advised to send the quotations to Haryana State Pollution Control Board, C-11, Sector-6, Panchkula on or before 1600 hrs on 29.10.2019

Format of quotations is as under:-

Job Description	Parameter to be monitored	Rate for 01 location* for 15 days
Ambient Air Quality Monitoring for consecutive 15 days commencing from 20.10.2019 to 03.11.2019 & PM10 is being monitored in 03 shifts (1st shift 6:00 AM to 02:00 PM, 2nd shift 2:00 PM to 10:00PM and 3rd shift 10:00 PM to 6:00AM) and PM2.5 for 24 hourly (6:00 AM to 6:00 AM) at	General metals i.e. Pb, Ni & As in PM ₁₀ and selected metals/elements i.e. Pb, Ni, As, Al, Ba, Fe, & Sr in PM _{2.5} in Ambient Air Quality	
GST		
Net Amount with GST		

*No. of Locations may vary from 10 to 18.



SPEED POST

No. A 21016/1/8-Mon./ 5783

Dated: 2nd September, 2019

To,

The Member Secretary (All SPCBs and PCCs)

Sub: **Special Monitoring of Ambient Air and Noise during Deepawali Festival 2019**
Reg.

Sir,

The Judgement of Hon'ble Supreme Court of India, dated 23.10.2018 in writ petition (civil) No.728 of 2015 has directed CPCB and respective State Pollution Control Boards/ Pollution Control Committees (SPCBs/PCCs) of the States and Union Territories shall carry out short-term monitoring in their cities for 14 days (commencing from 7 days prior to Diwali and ending 7 days after Diwali) for the parameters namely, Aluminum, Barium, Iron apart from the regulatory parameters against the short-term Ambient Air Quality Criteria Values (AAQCVs) proposed by CPCB with regard to bursting of firecrackers. This will help in generation of data on pollution caused by the bursting of firecrackers and would be helpful for regulation and control quantity of Aluminum, Barium and Iron used in the manufacture of firecrackers (website link: www.sci.gov.in/supremecourt/2015/32461_2015_Judgement_23-oct-2018.pdf).

Like previous year, CPCB is co-ordinating ambient air and noise level monitoring during Deepawali Festival this year also with various SPCBs/PCCs. The noise monitoring programme for pre-Deepawali and Deepawali day is as per Part-I. The scope of air quality monitoring during this year Deepawali is planned as mentioned in Part-II below.

Part -I: Noise monitoring

This year, the festival of Deepawali falls on 27th October, 2019 (Sunday). Therefore, it is requested to conduct the noise monitoring on Pre-Deepawali day i.e. 21st October, 2019 (Monday) and Deepawali day on 27th October, 2019 (Sunday).

Part-II: Ambient air quality monitoring

Like last year, this year also it is proposed that SPCBs/ PCCs shall carryout air quality monitoring at least in state capital (2-3 locations) for consecutive 15 days commencing from 20th October, 2019 to 03rd November, 2019. In addition to the general parameters like PM₁₀, PM_{2.5}, SO₂, NO₂ and metals (Pb, Ni & As in PM₁₀) selected metals/elements (Pb, Ni, As, Al, Ba, Fe, Sr in PM_{2.5}) are required to be monitored to assess the impact of firecracker bursting during Deepawali festival.

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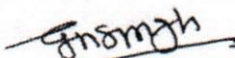
For analysis of regulatory parameters like PM₁₀, PM_{2.5}, SO₂, NO₂ and metals (Pb, Ni & As in PM₁₀) the CPCB Guidelines Volume I may be adopted. For Metal / Elements analysis in PM_{2.5} (PTFE Filter), EDXRF is the best option; however, other suitable method (ICP-MS/ICP-AES) may also be adopted. SPCBs/PCCs may analyse these samples in their own Laboratory or may engage EPA approved laboratory.

Like last year, this year also AAQM report will be submitted to Hon'ble Supreme Court of Delhi by the respective SPCBs & PCCs individually.

To maintain uniformity in ambient noise and air quality monitoring, noise monitoring protocol along with data sheets (Annexure-I, II and III) may kindly be adopted. The same uniformity may be followed in the final data reporting with respect to all locations in the form of Annexure - IV & V and it may be sent by e-mail to krishnacpcb@yahoo.co.in by 23rd November 2019, positively so that compiled report may be published at the earliest.

Encl.: **As above**

Yours faithfully,


(Gurnam Singh)
Addl. Director &
DH- Air Laboratory

Copy to:

1. Regional Directorates of CPCB For kind information and conducting the monitoring in respective cities and coordination with concerned SPCBs/PCCs in their jurisdiction.
2. DH-AQM For kind information please.
3. DH-IT Division For e-Samiksha portal please.

Copy for kind information to

1. PS to CCB
2. PS to MS

(Gurnam Singh)

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Protocol for Ambient Level Noise Monitoring

1.0 Purpose:

This protocol presents the protocol for Ambient Noise monitoring to be carried out on routine basis or to address the public complaints. The objective is to monitor the noise level at a particular site or as described in the complaints. The data generated by the method shall also evaluate with prescribed noise level standards.

2.0 Introduction

The unit of noise is decibel, one-tenth of a bell and denotes as d(B), however the monitoring unit is considered as dB(A) Leq denotes the time weighted average 'A' of the level of sound in decibels on **scale A** and it has been found related to **human hearing**. Thus in, dB(A)Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear. The unit of frequency is hertz (Hz) and is defined as the number of compressions and rarefactions per unit time (sec.). Human hearing is sensitive to frequencies in the range of about 20-20,000 Hz (the audio frequency range).

Sound pressure is used as the fundamental measure of sound (amplitude) as it is measurable directly by any standard instruments. The weakest sound pressure disturbance that can be detected by an "average" person at 1,000Hz has been found to be $20 \mu\text{N/m}^2$ and the largest $10^7 \mu\text{N/m}^2$. Because of such a wide range, the use of a linear pressure scale has been found to be non-scientific. It has been found convenient to employ sound pressure level, a quality, which is proportional to the logarithm of sound pressure. By this, the sound pressure range of interest is compressed between 0 to 130 dB.

3.0 Site Selection Criteria:

Site of an area shall be selected such that it meets the land use pattern as prescribed in the standard e.g. Industrial, Commercial, Residential & Silence Zone.

(A) General:

1. The station should be located at the ambient level i.e. away from the direct source, away from any vibration and any obstruction.
2. Categorize the area with land use pattern.

(B) Specific:

Always use tripod stand at above the ground level of 1 to 1.5 m for areas. Hand held monitoring should be avoided.

(C) Case Specific Locations:

- DG Sets up to 800 kW at about 1 m distances from all sides. DG Sets more than 800 kW at about 1 m distance of acoustic enclosure. Concerned State PCBs / PCCs may regulate the norms with minimum reduction of 25 dB(A) to see the effectiveness of the enclosure.

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- Petrol and Kerosene Gensets Sound power level is measured in anechoic room so as to have segregated noise level.
 - Fire crackers 4 m from the bursting point, there shouldn't be reflecting surface around 15m radius.
 - Vehicle 0.5m from the exhaust point.

(D) Positioning of the instrument:

- Microphone must be placed 1.2 -1.5m above the ground level.
- In dry conditions with a wind speed of less than 5 m/s.
- Isolate the instrument from strong vibration and shock.

4.0 Selection of Noise level meter:

Noise measurements will be made with a Type 1 integrating sound level meter with free-field microphone which meets the Accuracy of noise measurement as per IEC 804 (BS 6698) Grade I or ANSI Type I or equivalent IEC 61672-1(2002-05) Class-I.

5.0 Calibration:

Make sure that the instrument is properly calibrated. Measurements should be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB. The sound level meter and calibrator will hold a current calibration certificate traceable to national standards.

Start the calibrator and put on 1 KHz frequency calibration on two values 94 dB and 114 dB. If instrument is shows more than ± 0.3 dB differences adjust the calibration. Calibration is done O.K. now instrument is ready for monitoring.

6.0 Monitoring time:

The monitoring should be carried out minimum 75% of the prescribed Day time (06.00 am to 22.00 pm) and Night time (22.00 pm to 06.00 am). The exercise has to be carried out for 6 to 8 hrs. in the said time frame of day & night. It is always preferable to have large number of data sets thus 1sec sampling frequency is recommended.

7.0 Monitoring Parameters:

L_{eq} , L_{10} , L_{90} , L_{50} , L_{max} , L_{min} , (with 1 sec sampling period at all locations).

8.0 Monitoring Protocol:

The following criteria will be observed when undertaking the noise monitoring:

- a) During ambient noise monitoring sound comes from more than one direction, it is important to choose a microphone and mounting which gives the best possible Omni directional characteristics;
- b) The noise measurement equipment will be supervised continuously during the monitoring period and notes will be made of the date, time and prevailing weather conditions;

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- c) Immediately prior to and following each noise measurement session the accuracy of the noise level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency.
 - d) Noise measurements should not be made in fog and rain;
 - e) A wind shield will be used at all times to prevent interference of reflecting noise;
 - f) As far as is practicable, the pause facility on the noise measurement equipment will be used to exclude extraneous noise (e.g. low flying aircraft and road traffic passing in front of the microphone) so that the results recorded are representative of the site noise. If possible for extraneous noise/other source background noise can be eliminated from final reading by using the following formula:

$$L_{\text{pressure}} = 10 \cdot \log [10^{(L_p/10)} - 10^{(L_{p\text{Background}}/10)}]$$

9.0 Monitoring records:

- (i) The date, time, location and duration of the measurement;
- (ii) All predominant noise sources will be noted, which may include extraneous noise such as road traffic, aero-planes and other activity;
- (iii) Weather conditions will be recorded including wind speed and approximate direction, cloud cover, rain and ground frost;

10.0 Monitoring data submission:

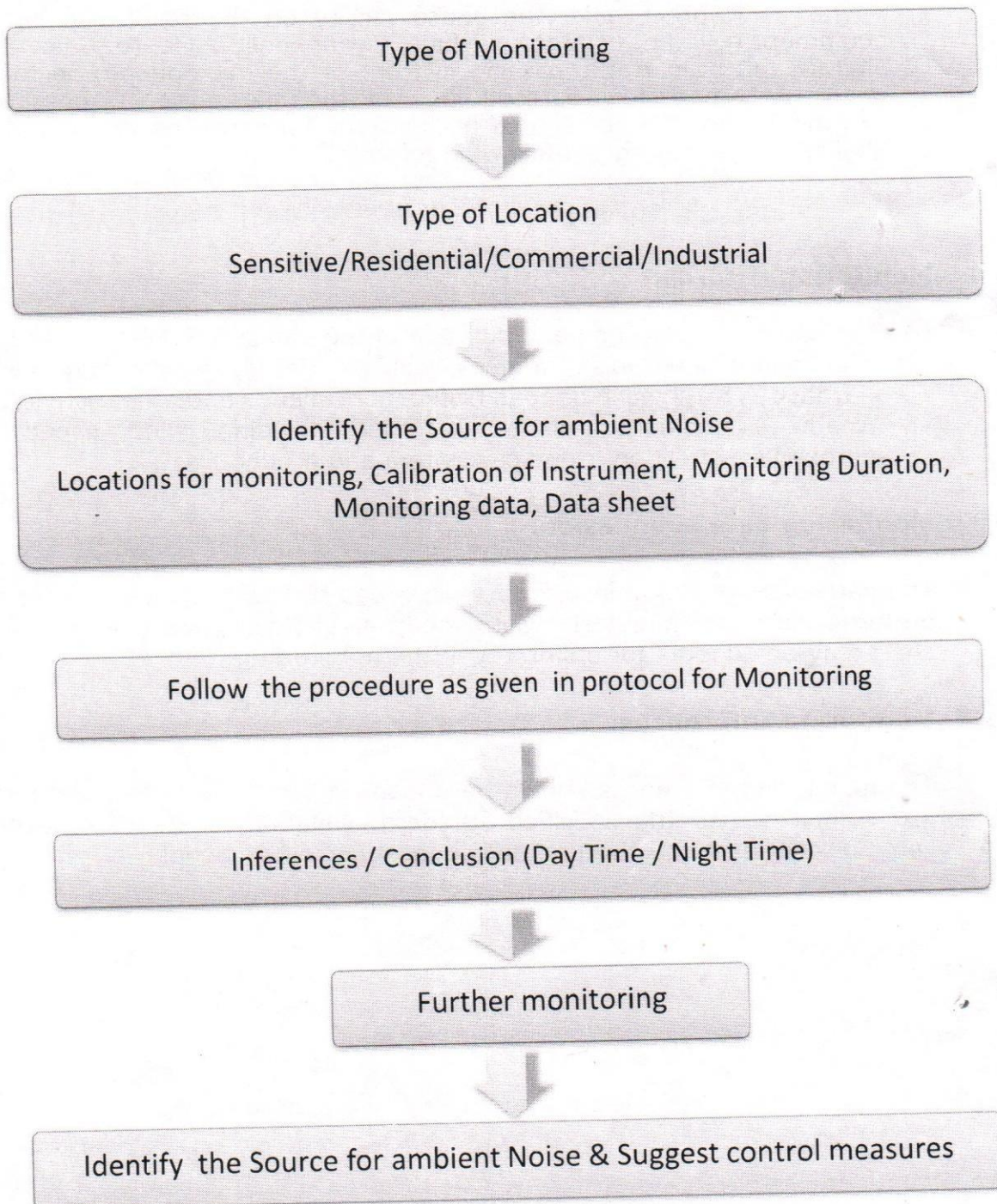
The particulars of the measurements recorded by the noise level meter shall be furnished in the monitoring data sheet, as at **Annexure I**. A typical flow chart may be adopted for uniformity in the monitoring.

11.0 Monitoring Inferences:

The monitoring inferences should be drawn on the basis of final data sheet viz. compliance to the specified standard, violation of standard, average L_{eq} , noise intensity L_{50} , L_{90} etc. and suggest corrective action.

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Manual Ambient Noise Monitoring Flow Chart



CENTRAL POLLUTION CONTROL BOARD, DELHI
AMBIENT NOISE OF DELHI
Data sheet for Ambient Noise Monitoring

Location:			Date:					
			Time : Day Time / Night Time					
Noise Level Meter								
Make	:							
Model	:							
Serial No.	:							
Calibration Result of Noise Level Meter								
Calibration			94 dB at 1000 Hz			114 dB at 1000 Hz		
Initial								
Final								
Sampling rate								
S. No.	Time duration	File No.	L equivalent dB(A)					
			Leq.	L ₁₀	L ₅₀	L ₉₀	L _{min}	L _{max}
1								
2								
3								
4								
5								
6								
7								
8								
Average L equivalent dB(A)								
Monitoring team & signature								
<p>Notes: (1) The method for calculation of average Leq: To convert average of dB(A), each value is to be divided by 10, followed by antilog and finally calculate arithmetic mean. The final value is converted in logarithm followed by multiplication with 10. (2) monitoring must be carried for 75% of the prescribed day time and night time for legal compliance, (3) L_{max} and L_{min} are to reported hourly basis and (4) L₅₀ & L₉₀ also recorded to understand the intensity of the noise for further course of action.</p>								

(Monitored by)

(Checked by)

Authorized Signatory

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CENTRAL POLLUTION CONTROL BOARD, DELHI
AMBIENT AIR QUALITY OF DELHI
DATA SHEET FOR PM₁₀ & PM_{2.5}

Station:				
Date				
Parameter	PM₁₀			PM_{2.5}
Shift	Ist Shift	IInd Shift	IIIrd Shift	24hour
Monitoring Period	06:00AM-02:00PM	02:00PM-10:00PM	10:00PM-06:AM	06:00AM-06:00AM
Filter Paper No.				
Hourly Flow Rate (m³/minute)				
Average Flow Rate (m³/minute)				
Total Operation Time (Minutes)				
Initial Weight of Filter Paper (gms.)				
Final Weight of Filter Paper (gms.)				
Dust Contents (gms.)				
Total Volume of Air Sampled (m³)				
Concentration (µg/m³)				
24 Hourly Average (µg/m³):				
Remarks:				
Name & Signature of Official on duty:				

CENTRAL POLLUTION CONTROL BOARD, DELHI
AMBIENT AIR QUALITY OF DELHI
DATA SHEET FOR GASEOUS AIR POLLUTANTS

Annexure-III

Station:									Date:			
Shift	Ist Shift				IInd Shift				IIIrd Shift			
Monitoring Period	06:00AM-10:00AM		10:00AM-02:00 PM		02:00PM-06:00PM		06:00PM-10:00PM		10:00PM-02:00AM		02:00AM-06:00AM	
Parameter	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂
Hourly Flow Rate (lpm)												
Average Flow Rate (lpm)												
Total Operation Time (Minutes)												
Initial Volume of Sample (ml)												
Final Volume of Sample (ml)												
Volume Taken For Analysis (ml)												
Total Volume of Air Sampled (lit.)												
Absorbance (Blank)												
Absorbance (Sample)												
Concentration (µg/m ³)												
24 Hourly Average SO ₂ (µg/m ³):						24 Hourly Average NO ₂ (µg/m ³):						
Remarks:												
Name & Signature of Official on duty:												

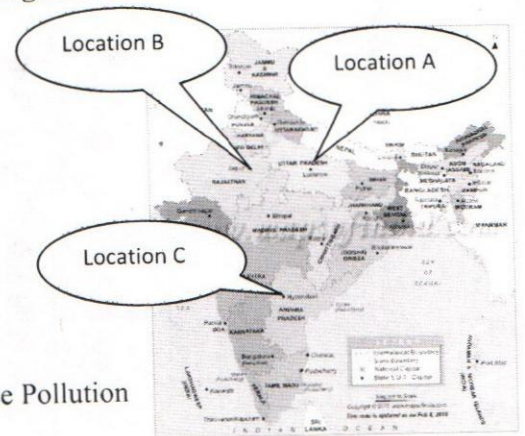
Format of Report: Deepawali Monitoring 2019

City:

- Latitude & Longitude
- Climate/Meteorology
- Population
- Major Land use

Monitoring Locations:

- Map showing all monitoring locations of the city
- Description of monitoring site: Area/ Zone: Residential, Commercial & Silence
- Activities around the monitoring location/Sources of Noise Pollution



Data / Observations:

Noise Level during Deepawali festival, 2019:

Location: A	Pre- Deepawali Day (21.10.2019)			Deepawali Day (27.10.2019)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
Time duration						
18:00 to 19:00 Hr						
19:00 to 20:00 Hr						
20:00 to 21:00 Hr						
21:00 to 22:00 Hr						
22:00 to 23:00 Hr						
23:00 to 24:00 Hr						

Location: B	Pre- Deepawali Day (21.10.2019)			Deepawali Day (27.10.2019)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
Time duration						
18:00 to 19:00 Hr						
19:00 to 20:00 Hr						
20:00 to 21:00 Hr						
21:00 to 22:00 Hr						
22:00 to 23:00 Hr						
23:00 to 24:00 Hr						

Location: C	Pre- Deepawali Day (21.10.2019)			Deepawali Day (27.10.2019)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
Time duration						
18:00 to 19:00 Hr						
19:00 to 20:00 Hr						
20:00 to 21:00 Hr						
21:00 to 22:00 Hr						
22:00 to 23:00 Hr						
23:00 to 24:00 Hr						

Interpretation of Noise Data / Results:

Report the compliance of the Noise level with standard limits for that area. The increase or decrease of the noise level on a particular day, state the cause of increase or decrease.

28/10/2019

Annexure-V

Ambient Air Quality monitoring data during Deepawali festival (20.10.2019 to 03.11.2019):

Data / Observations:

Name of the location														
Date	Regulatory parameters							Proposed New Parameters						
	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	Metals in PM ₁₀			Metals /Elements in PM _{2.5}						
					Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Al (µg/m ³)	Ba (µg/m ³)	Fe (µg/m ³)	Sr (µg/m ³)
20-10-2019														
21-10-2019														
22-10-2019														
23-10-2019														
24-10-2019														
25-10-2019														
26-10-2019														
27-10-2019														
28-10-2019														
29-10-2019														
30-10-2019														
31-10-2019														
01-11-2019														
02-11-2019														
03-11-2019														

* All values (24 hourly Avg.) are in µg/m³.

Interpretation of Ambient Air Quality Data/Results:

Report the compliance of the air pollutants concentration with standard limits for that area. If there is increase or decrease of pollutant concentration in that area, note the causes affecting air pollutants concentration.

Any other Information pertains to the monitoring activity