

AIR QUALITY INDEX (AQI)

OF



**ST. EDMUND'S COLLEGE  
SHILLONG**

*Prepared by*  
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*Forwarded to*  
IQAC, SEC, SHILLONG

**St. Edmund's College**  
**Shillong**

Air Quality Index (AQI)

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## AIR QUALITY INDEX (AQI)

St. Edmund's College, established in the year 1923, is located at Laitumkhrah Shillong, East Khasi Hills District, Meghalaya (Latitude 25° 34' 02" North, Longitude 91° 54' 06" East). It has a campus area of 129,152.79 m<sup>2</sup> out of which 42.59 % is green cover; 46.29 % - is building and open space - 11.11 % (reference GPS mapping). The college has 21 departments and caters to approximately 2900 students, 150 Staffs (Teaching and Non-Teaching) and has 2 functioned hostels (1 for Boys and 1 for Girls). The academic session starts in the month of February and end in mid-December.

Following the completion of Green Audit, Water Audit and Energy Audit of the campus, it was decided to conduct AIR QUALITY INDEX (AQI) of the campus utilizing the resources available at Meghalaya State Pollution Control Board (MSPCB), Meghalaya. Air Quality Index (AQI) is a tool for effective communication of air quality status of a place to the people in terms, which are easy to understand. It transforms complex air quality data into a single number (index value), nomenclature and color. There are six AQIs categories, namely Good, Satisfactory, Moderately Pollute, Poor, Very Poor and Severe. Each of these categories is decided based on ambient concentration values and their health break points. AQ sub-index are evolved for eight pollutants (PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub>, CO<sub>2</sub>, NH<sub>3</sub> and Pb) for which short term (24 hours) data are prescribed. The expression of interest was sent to the Member Secretary, Meghalaya State Pollution Control Board to conduct the same as per standard procedures prescribed by Central Pollution Control Board (CPCB), New Delhi. The following parameters were chosen: **Particulate Matter (PM<sub>10</sub>)**, **Particulate Matter (PM<sub>2.5</sub>)**, **Sulphur dioxide (SO<sub>2</sub>)** and **Nitrogen dioxide (NO<sub>2</sub>)** under Air Quality Index. The **Noise Level** at a designated location were monitored under *Regulation and Control Rules 2000* under *EPA, 1986*. The ambient air quality and noise level were monitored on 18<sup>th</sup> & 19<sup>th</sup> May 2022 (24 hours duration) using the following equipment's:

SI No.	Equipment	Purpose
1.	Respirable Dust Sampler with Thermo Electrical Cooled Gaseous Sampling Attachment (APM 411)  Make: Envirotech  Model: APM 460	For monitoring of PM10
2.	PM2.5 Sampler  Make: Envirotech  Model: 550 MFC	For monitoring of PM2.5
3.	Noise Level Meter  Make: Envirotech  Model: SLM109	For Ambient Noise Level monitoring

The report on AQI and noise Pollution was obtained from MSPCB, Meghalaya, (Refer Annexure - I). The Salient features of the report are:

- Parameters tested were found to be within the prescribed limits of National Ambient Air Quality Standards (NAAQS) as per EPA Notification GSR 826(E), dated New Delhi, the 16<sup>th</sup> November 2009. The Air Quality Index (AQI) rating falls under **Good Category, Index Value 44, Colour- GREEN.**
- Noise level monitored at the designated location was found to be **within the prescribed limits** as per the Noise Pollution (Regulation and Control) Rules, 2000 under EPA, 1986. The Ambient Noise Level value is **47.7 (Day time) and 39.4 (Night Time).**

It is proposed that another AQI and noise pollution experiment can be conducted during the months- November- January (winter season) to have a statistical interpretation – comparison with the present result and to find out any significant deviation/change in the values under the parameters referred earlier.

## ANNEXURE - I

**Meghalaya State Pollution Control Board**  
Forests & Environment Department, Government of Meghalaya  
'ARDEN' Lumpyngngad, Shillong-793014  
Website: <http://megspcb.gov.in>



Report No. : AQ/2022/29

1.	Name of the Project	:	St. Edmunds College, Laitumkrah, Shillong, East Khasi Hills District, Meghalaya.
2.	Sample matrix	:	Ambient Air
3.	Samples collected by	:	S. Nongkynrih/N. Nongrum
4.	Date of sample collection	:	18.05.22 – 19.05.22
5.	Date & time of sample receipt	:	19.05.22
6.	Date of sample analysis	:	20.02.22
7.	Date of Issue	:	26.05.2022
8.	Sample Registration No.	:	A/29/22
9.	Test method reference	:	IS 5182 Pt. 23, EPA CFR-40 (Pt-50) IS:5182 (Pt-2), IS:5182 (Pt-6)
10.	Name & Address of Industry/Sampling Location	:	St. Edmunds College, Laitumkrah, Shillong, East Khasi Hills District, Meghalaya.
12.	Time duration of sampling	:	24 hrs (8 hrs interval for RSPM , 4 hrs interval for gaseous)
13.	Category	:	Residential
14.	Meteorological Parameters		
	General Weather condition	:	P Clear/Cloudy
	Temperature (°C)	:	Min: 15.5      Max: 22.0
	Relative Humidity ( % )	:	Min: 69.0      Max: 84.0
	Wind Speed (km/hr)	:	Min: 7.4      Max: 13.8      Avg: 10.9
	Wind Direction (most prevailing)	:	SE-NW
	Rainfall (mm)	:	Sum : -

Parameters	Test Method	Permissible Limits (24 hours average) EPA Notification GSR 826(E), dated New Delhi, the 16 <sup>th</sup> Nov. 2009.	Sampling Station Code/Name	Air Quality Index  (AQI)	Rating
			A/29/22		
			Front Lawn		
Particulate Matter (PM 10) (µg/m <sup>3</sup> ) (24 hrs avg.)	IS:5182 (Pt-23)	100	44.4	44	Good
Particulate Matter (PM 2.5) (µg/m <sup>3</sup> ) (24 hrs avg.)	EPA CFR-40 (Pt-50)	60	22.3		
Sulphur dioxide (SO <sub>2</sub> ) (µg/m <sup>3</sup> ) (24 hrs avg.)	IS:5182 (Pt-2)	80	2.4		
Nitrogen dioxide (NO <sub>2</sub> ) (µg/m <sup>3</sup> ) (24 hrs avg.)	IS:5182 (Pt-6)	80	9.5		
AQI calculation is as per standard procedures prescribed by Central Pollution Control Board (CPCB), New Delhi. Rating Scale:- Good: 0-50; Satisfactory: 51-100; Moderate: 101 - 200; Poor: 201-300; Very Poor: 301-400; Severe: >400					

**Remarks:** Parameters tested were found to be within the prescribed limits of National Ambient Air Quality Standards (NAAQS) as per EPA Notification GSR 826(E), dated New Delhi, the 16<sup>th</sup> Nov. 2009. The Air Quality Index(AQI) Rating falls under Good category.

Statement:

- Test values are reported based on the materials received.
- Sample(s) will be destroyed after 15 days from date of issues of the Test Report.
- The test report shall not be reproduced except in full, without the written approval of laboratory.

(S.Swer)  
Scientist 'C'

(Dr. B. Nongbri)  
Senior Scientist

Report No.: NL/2022/006

1.	Name of the Project	:	Noise Level Monitoring at St. Edmund's College, Laitumkhrach, Shillong.
2.	Sample matrix	:	Noise level
3.	Monitored by	:	S.Nongkynrih/N.Nongrum
4.	Date of monitoring	:	18.05.2022
5.	Date of sample receipt	:	18.05.2022
6.	Date of sample analysis	:	18.05.2022
7.	Date of Issue	:	-
8.	Sample Registration No.	:	N/6/22
9.	Test method reference	:	IS-9989/981-RA 2001/MPCB/CL-SOP/2017-18/21
10.	Name & Address of Industry/Sampling Location	:	St. Edmund's College, Laitumkhrach, Shillong.
11.	Category of Area	:	Silence Zone

Parameters	Limits in {dB(A)Leq}		Test method	Sampling Station Code/Name
	{Noise Pollution(Regulation and Control) Rules,2000.} Under EPA, 1986.			N/6/22
				Quadrangle
Ambient Noise Level {dB(A)Leq}	Day Time (6 AM to 10 PM)	50	IS-9989/981-RA 2001/MPCB/CL-SOP/2017-18/21	47.7
	Night Time (10 PM to 6 AM)	40		39.4

**Remarks:** Noise level monitored at the location was found to be within the prescribed limits as per the Noise Pollution (Regulation and Control) Rules, 2000 under EPA, 1986.

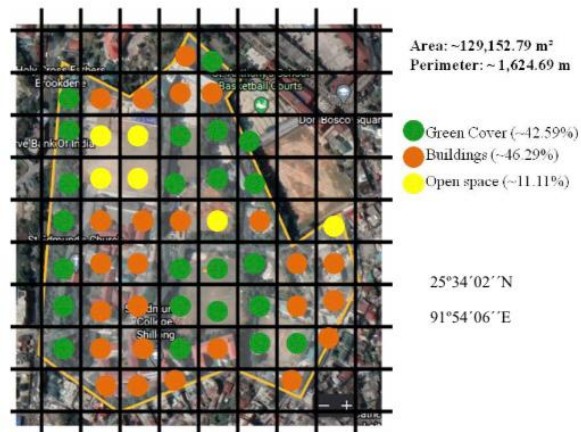
**Statement:**

1. Test values are reported based on the information provided to the laboratory.
2. The test report shall not be reproduced except in full, without the written approval of laboratory.

(Shri. S Swer)  
Scientist 'C'

(Dr. B Nongbri)  
Senior Scientist





Land Use Data of the St. Edmund's College, Shillong

Category	Percentage of Area (Approx)	Area occupied (m <sup>2</sup> ) (Approx)
Green Cover	42.59	55,009.52
Buildings	46.29	59,792.61
Open space	11.11	14,350.26



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