

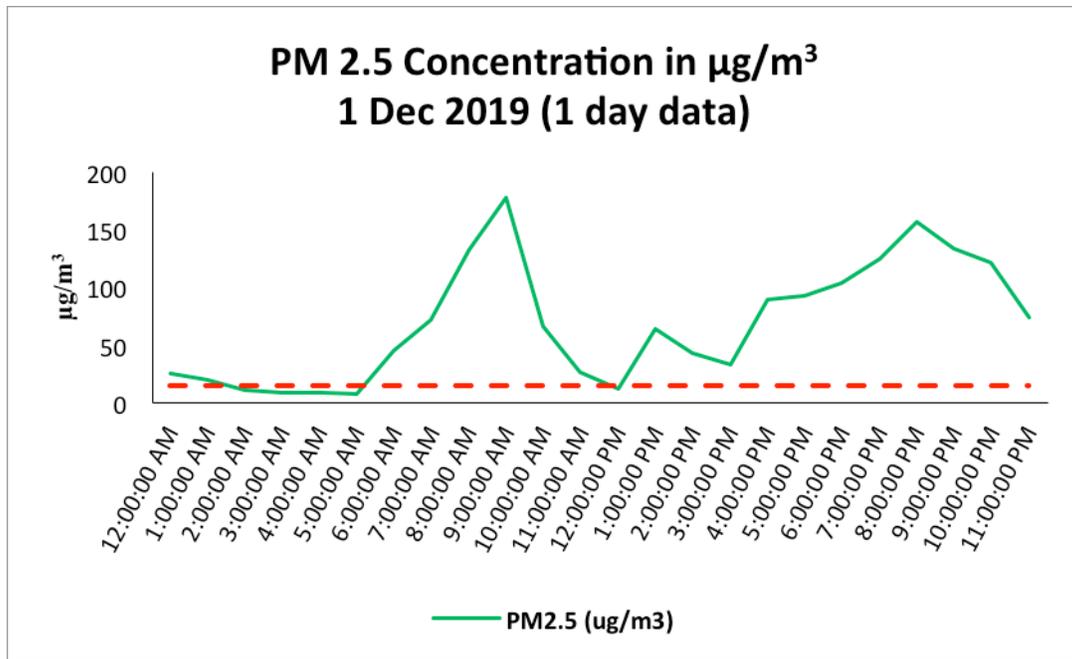
State of Air Quality in Gilgit City

Air quality of Gilgit City is getting polluted day by day due to firewood burning in almost each and every house due to freezing temperatures in winters. Gilgit is located in a deep narrow valley with very little or no wind currents that may transport or disperse the pollutants elsewhere. The rain and snowfall is also very low that may settle the air pollutants.

Particulate Matter (PM_{2.5}) is a mixture of gasses (Carbon Monoxide, Nitrogen Oxide, Sulfur Dioxide, Mineral Dust, Organic Matter and Elemental Carbon) emit from burning of firewood, automobile exhaust emissions and burning of other materials like tires, used mobile oil, plastics, used oil filters etc.

GB-EPA has started monitoring of air pollution in Gilgit City for 24 hours. It is to inform all that the levels of Particulate Matter (PM_{2.5}) are very high and fluctuating in the range of 50 to 60 against the standard of 35 micro gram per cubic meters of air for 24 hours average and 15 micro gram per cubic meter of air for one hour average.

Elevated levels of PM_{2.5} above 35 effect lungs and heart of humans and more severe impacts on children and elderly people.

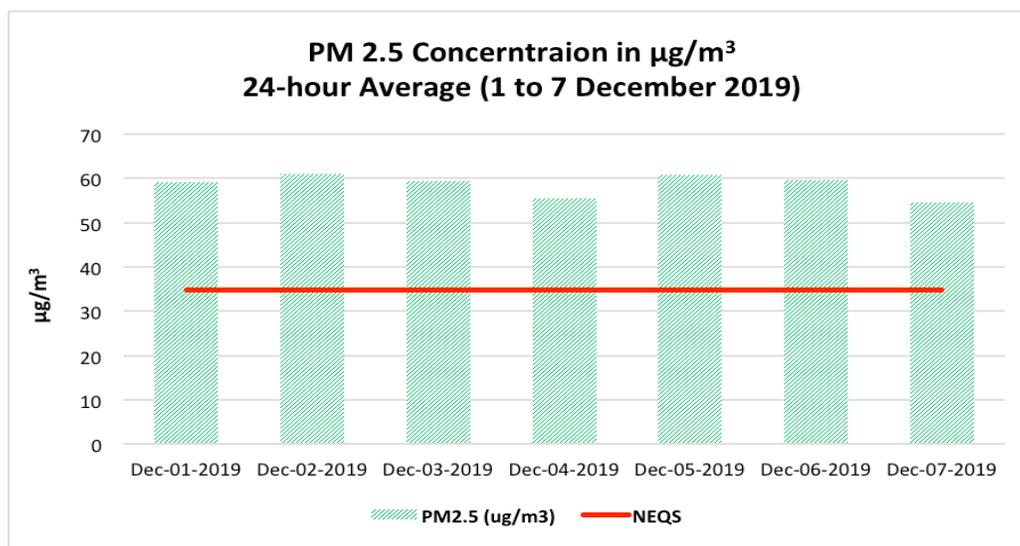


In the above graph the values of PM_{2.5} are recorded for hourly average and presented the air pollution trends for information of the general public for a day. The standard limit for hourly average for PM_{2.5} is 15 micro grams per cubic meter of air below which it is safe to breath in the air.

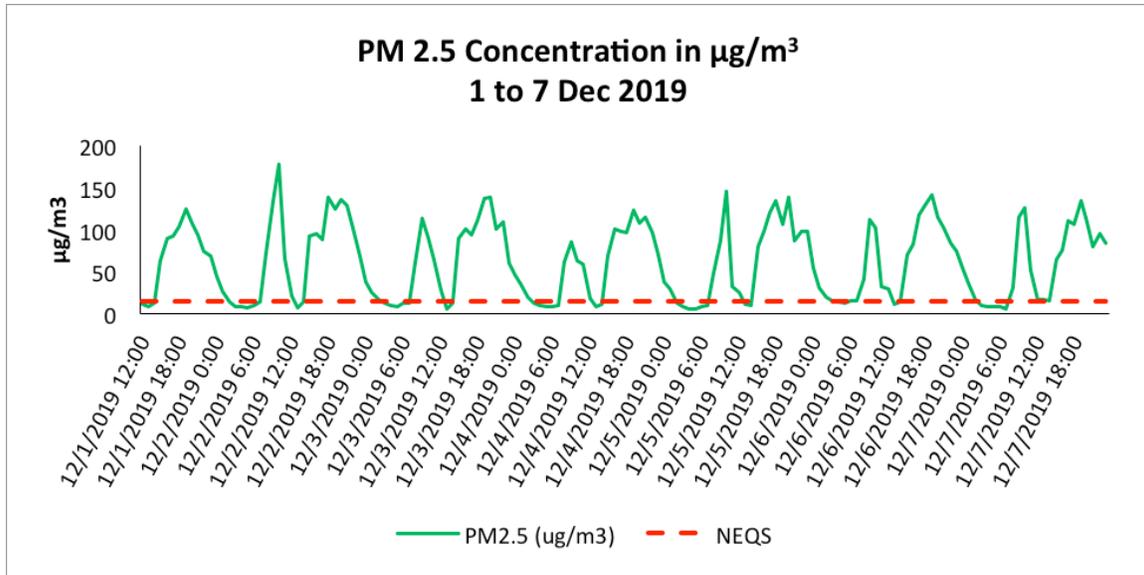
Time Period	Air Pollution Trend
From 12 AM to 6 AM in the morning	The values of air pollution are in limits as in night there is no firewood burning
From 6 AM to 7 AM in	The values of air pollution are increasing as the day starts and people

the morning	start to burn firewood for heating
From 8 AM to 9 AM in the morning	The records of air pollution are highest due to highest burning of firewood at breakfast time
From 10 AM to 11 AM in the morning	Air pollution is decreasing as people leave home for work and firewood burning is low
From 12 PM to 3 PM afternoon	Air pollution level is fluctuating above the standard value as people start burning of firewood
From 4 PM to 6 PM evening	Air pollution is increasing as people are back at home and increasing burning of firewood with decreasing temperatures in the evening
From 7 to 9 PM in night	Air pollution reaches at its highest as people at home use maximum quantity of firewood.
From 10 to 12 PM in night	Air pollution starts declining due to the fact that burning of firewood decreases as people go for sleep

GB-EPA extended the air pollution-monitoring programme taking hourly and daily average values and testing it against the standard of 35 micro grams per cubic meter of air set by National Environmental Quality Standards of Pakistan. Following is the graph for first week of December 2019.



It is clear that the 24 hours average values are fluctuating between 50 to 60 micro gram per cubic of air against the standard value of 35. It means the air of Gilgit city pose health hazard to its populace in general and to the most vulnerable groups (children and elderly) in particular.



In the above graph the air pollution recorded values are presented in hourly average from 1 to 7 December 2019. It is clear from the graph that in most of the 24 hours cycle the air pollution level remains high and pose health hazard to the people.

Following table shows different levels of PM2.5 and its impacts on human health.

Air Pollution Level	PM2.5 level (µg/m3, 24-hour average)	Health Implications	Cautionary Statement
Good	0.0-12.0	Air quality is considered satisfactory, and air pollution poses little or no risk.	None
Moderate	12.1-35.4	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.	Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
Unhealthy for sensitive groups	35.5-55.4	Members of sensitive groups may experience health effects. The general public is not likely to be affected.	Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
Unhealthy	55.5-150.4	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.	Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
Very Unhealthy	150.5-250.4	Health warnings of emergency conditions. The entire population is more likely to be affected.	Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
Hazardous	250.5-350.4	Health Alert: Everyone may experience more serious health effects.	Everyone should avoid all outdoor exertion.
Hazardous	350.5-500		

Recommendations: It is highly recommended to use minimum quantity of firewood on need basis, avoid use of excessive wood for burning. Don't burn plastics, tires, used

mobile oil and oil filters. Use of automobile shall be limited to the dire need. Grow plants as much as possible in order to provide a sink to the pollutants.