

**BEFORE THE NATIONAL GREEN TRIBUNAL
WESTERN ZONE BENCH, PUNE**

**ORIGINAL APPLICATION NO. 9 OF 2025 (WZ)
[EARLIER ORIGINAL APPLICATION NO.1389 OF
2024 (PB)]**

NEWS ITEM TITLED "AIR QUALITY ALERT GUJARAT HAS 15
SO₂ HOTSPOTS" APPEARING IN THE TIMES OF INDIA
DATED 03.12.2024

**AFFIDAVIT ON BEHALF OF GUJARAT POLLUTION
CONTROL BOARD**

I, Prathmesh B. Patel, an adult, having my office at Gujarat
Pollution Control Board, do hereby solemnly affirm and state
an oath as under:

1. I am presently serving as Unit Head – P3 Branch with
Gujarat Pollution Control Board. I have perused the
record pertaining to the case available in my office and am
conversant with the facts of the case. I am authorized to
swear the present affidavit on behalf of the Gujarat
Pollution Control Board and am otherwise competent to
make the present affidavit



Prathmesh B. Patel
25/12/24

2. I am filing the present affidavit in compliance with order dated 25.03.2025.
3. I say that the issue involved in the present matter is regarding presence of Sulphur Dioxide (SO₂) gas leading to degraded air quality in the State of Gujarat, more particularly in the cities of Ahmedabad and Gandhinagar. The matter has been taken up on the basis of a news item published in the Times of India on 03.12.2024 wherein 15 SO₂ hotspots were identified on the basis of a study conducted by researchers from various institutes. The study highlights that the SO₂ concentrations in various areas are in the range of 10 to 1,000 micromoles per meter square ($\mu\text{mol}/\text{m}^2$), with an average concentration of 300 $\mu\text{mol}/\text{m}^2$ while in the hotspot zones SO₂ discharge magnitude is more than 350 $\mu\text{mol}/\text{m}^2$.
4. I say that while Sentinel-5P TROPOMI data is invaluable for large-scale atmospheric monitoring and research, it has its own limitations when used for assessing compliance with ambient air quality standards. These limitations stem from differences in units of measurement, spatial and temporal resolution, and technical constraints. Ambient air quality standards are typically defined in terms of ground-level concentrations (e.g., micrograms per cubic meter, $\mu\text{g}/\text{m}^3$) averaged over specific time periods (e.g., hourly, daily, monthly or annually). However, TROPOMI measures column densities



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(micro mole per square meter), which represent the total amount of a pollutant in a vertical column of the atmosphere. Converting column densities to ground-level concentrations requires additional modeling and assumptions, thereby introducing uncertainties.

5. I say that as per the National Ambient Air Quality Standards (NAAQS) notified by the Central Pollution Control Board (CPCB) *vide* notification no. B-29016/20/90/PCI-L dated 18.11.2009, Sulphur Dioxide (SO₂) level is required to be measured in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The present study instead measures the Sulphur Dioxide (SO₂) level in micromole per square meter ($\mu\text{mol}/\text{m}^2$), leading to inconsistencies and non-comparable results. I say that the difference in metric of measurement used in the study has led to inflated figures, which do not resemble a correct picture of the air quality in the State. A copy of notification no. B-29016/20/90/PCI-L dated 18.11.2009 issued by the Central Pollution Control Board is annexed herewith and marked as **Annexure R-1**.

6. I say that there is total 113 ambient air quality monitoring stations installed in the Gujarat state in which 85 stations are under National Air Monitoring Programme (NAMP) and 28 stations are under State Air Monitoring Programme (SAMP) in the areas of industrial clusters and major cities. There are five Continuous Ambient Air Quality Monitoring Systems (CAAQMS) installed by the Board located at



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Maninagar (Ahmedabad), Vatva (Ahmedabad), Gandhinagar, Vapi and Ankleshwar that monitor air quality on a real-time basis.

7. I say that the prescribed standard limit for SO₂ concentrations in Industrial, Residential, Rural and Other area is 50 µg/m³ (annual) and 80 µg/m³ (24hrs). As per the reports published by the Central Pollution Control Board annually based on data of NAMP stations of Gujarat, annual average of SO₂ have not crossed standard prescribed i.e. 50 µg/m³ (annual) in any of the stations in last three years.
8. I say that the Board regularly monitors the air quality index and has taken various steps to reduce SO₂ emissions across the State. The Board is ensuring strict implementation of emission norms as per the Air (Prevention and Control of Pollution) Act, 1981. The Board is periodically monitoring and enforcing air quality standards and promoting adoption of cleaner fuel alternatives such as natural gas. The Board is also actively promoting use of flue gas desulfurization (FGD) technology in thermal power plants. The State of Gujarat is increasingly promoting renewable energy resources, including solar and wind, in order to ensure decreased SO₂ emissions.



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9. I say that the Board shall continue to monitor the air quality and assures that it shall abide by all or any order that are issued by this Hon'ble Tribunal.

[Handwritten Signature]
25/04/25

DEPONENT

VERIFICATION

Verified at Gandhinagar on this 25th day of April, 2025 that the contents of the above affidavit are true and correct, nothing stated therein is false and nothing material has been concealed therefrom.

[Handwritten Signature]
25/04/25

DEPONENT



SOLEMNLY AFFIRMED
BEFORE ME
[Signature]
(C. M. RAVAL)
NOTARY
GOVT. OF GUJARAT
25 APR 2025

Entered in Notary Register at
Serial No. 150 Vol. No. F
[Signature]
S. M. RAVAL ATTORNEY & NOTARY
GANDHINAGAR

25 APR 2025




भारत का राजपत्र
The Gazette of India

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सं. 217]

नई दिल्ली, बुधवार, नवम्बर 18, 2009/कर्तिक 27, 1931

No. 217]

NEW DELHI, WEDNESDAY, NOVEMBER 18, 2009/KARTIKA 27, 1931

राष्ट्रीय परिवेशी वायु गुणवत्ता मानक
 केन्द्रीय प्रदूषण नियंत्रण बोर्ड
 अधिसूचना

नई दिल्ली, 18 नवम्बर, 2009

सं. सी-29016/20/90/पी.सी.आई.-1.—वायु (प्रदूषण निवारण एवं नियंत्रण) अधिनियम, 1981 (1981 का 14) की धारा 16 की उपधारा (2) (एच) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए तथा अधिसूचना संख्या का.आ. 384(ई), दिनांक 11 अप्रैल, 1994 और का.आ. 935 (ई) दिनांक 14 अक्टूबर, 1998 के अधिक्रमण में केन्द्रीय प्रदूषण नियंत्रण बोर्ड इसके द्वारा तत्काल प्रभाव से राष्ट्रीय परिवेशी वायु गुणवत्ता मानक अधिसूचित करता है, जो इस प्रकार है:-

राष्ट्रीय परिवेशी वायु गुणवत्ता मानक

क्र. सं.	प्रदूषक	समय आधारित औसत	परिवेशी वायु में सान्द्रण		
			औद्योगिक, शहरी, ग्रामीण और अन्य क्षेत्र	पारिस्थितिकीय संवेदनशील क्षेत्र (केन्द्र सरकार द्वारा अधिसूचित)	प्रबोधन की पद्धति
(1)	(2)	(3)	(4)	(5)	(6)
1	सल्फर डाई आक्साइड (SO ₂), µg/m ³	वार्षिक* 24 घंटे**	50 80	20 80	-उन्नत वेस्ट और गार्ड -परचैगनी परिदीप्ती
2	नाइट्रोजन डाई आक्साइड (NO ₂), µg/m ³	वार्षिक* 24 घंटे**	40 80	30 80	-उपांतरित जैकब और हॉवाइजर (सोडियम-आर्सेनाइट) -रासायनिक संदीप्ति
3	विशिष्ट पदार्थ (10माइक्रान से कम आकार)या PM ₁₀ . µg/m ³	वार्षिक* 24 घंटे**	60 100	60 100	-हरात्मक विश्लेषण -टोयम -बीटा तनुकरण पद्धति

4	विविक्त पदार्थ (2.5 माइक्रान से कम आकार या $PM_{2.5}$, $\mu g/m^3$)	वार्षिक* 24 घंटे**	40 60	40 60	-हरात्मक विश्लेषण -टोयम -बीटा तनुकरण पद्धति
5	ओजोन (O_3) $\mu g/m^3$	8 घंटे** 1 घंटा**	100 180	100 180	-पराबैगनी द्वीप्तिकाल -रासायनिक संदीप्ति -रासायनिक पद्धति
6	सीसा (Pb) $\mu g/m^3$	वार्षिक* 24 घंटे**	0.50 1.0	0.50 1.0	ई.पी.एम. 2000 या समरूप फिल्टर पेपर का प्रयोग करके AAS/ICP पद्धति -टेफ्लॉन फिल्टर पेपर का प्रयोग करते हुए ED-XRF
7	कार्बन मोनोक्साइड (CO) mg/m^3	8 घंटे** 1 घंटा**	02 04	02 04	-अविषेक्षी अवरक्त (NDIR) स्पेक्ट्रम मापन
8	अमोनिया (NH_3) $\mu g/m^3$	वार्षिक* 24 घंटे**	100 400	100 400	-रासायनिक संदीप्ति -इण्डोफिनॉल ब्ल्यू पद्धति
9	बैन्जीन (C_6H_6) $\mu g/m^3$	वार्षिक*	05	05	- गैस क्रोमेटोग्राफी आधारित सतत विश्लेषक -अधिशोषण तथा निशोषण के बाद गैस क्रोमेटोग्राफी
10	बैन्जो (ए) पाईरीन (BaP) केवल विविक्त कण, ng/m^3	वार्षिक*	01	01	-विलायक निष्कर्षण के बाद HPLC/GC द्वारा विश्लेषण
11	आर्सेनिक (As) ng/m^3	वार्षिक*	06	06	-असंवितरक अवरक्त स्पेक्ट्रोमिती ई.पी.एम. 2000 या समरूप फिल्टर पेपर का प्रयोग करके ICP/AAS पद्धति
12	निकिल (Ni) ng/m^3	वार्षिक*	20	20	ई.पी.एम. 2000 या समरूप फिल्टर पेपर का प्रयोग करके ICP/AAS पद्धति

* वर्ष में एक समान अंतरालों पर सप्ताह में दो बार प्रति 24 घंटे तक किसी एक स्थान विशेष पर लिये गये न्यूनतम 104 मापों का वार्षिक अंकगणीतीय औसत ।

** वर्ष में 98 प्रतिशत समय पर 24 घंटे या 8 घंटे या 1 घंटा के मानीटर मापमान, जो लागू हो, अनुपालन कये जाएंगे । दो प्रतिशत समय पर यह मापमान अधिक हो सकता है, किन्तु क्रमिक दो मानीटर करने के दिनों पर नहीं ।

टिप्पणी:

1. जब कभी और जहां भी किसी अपने-अपने प्रवर्ग के लिये दो क्रमिक प्रबोधन दिनों पर मापित मूल्य, उमर विनिर्दिष्ट सीमा से अधिक हो तो इसे नियमित या निरंतर प्रबोधन तथा अतिरिक्त अन्वेषण करवाने के लिये पर्याप्त कारण समझा जायेगा ।

संत प्रखर गौतम, अध्यक्ष

[विज्ञापन-III/4/184/09/अस.]

टिप्पणी: राष्ट्रीय परिवेशी वायु गुणवत्ता मानक संबंधी अधिसूचनाएँ, केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा भारत के राजपत्र आसाधरण में अधिसूचना संख्या का.आ. 384 (ई), दिनांक 11 अप्रैल, 1994 एवं का. आ. 935 (ई), दिनांक 14 अक्टूबर, 1998 द्वारा प्रकाशित की गयी थी ।

NATIONAL AMBIENT AIR QUALITY STANDARDS
CENTRAL POLLUTION CONTROL BOARD
NOTIFICATION

New Delhi, the 18th November, 2009

No. B-29016/20/90/PCI-I—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981), and in supersession of the Notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO ₂), µg/m ³	Annual* 24 hours**	50 80	20 80	- Improved West and Gaeke -Ultraviolet fluorescence
2	Nitrogen Dioxide (NO ₂), µg/m ³	Annual* 24 hours**	40 80	30 80	- Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM ₁₀ µg/m ³	Annual* 24 hours**	60 100	60 100	- Gravimetric - TOEM - Beta attenuation
4	Particulate Matter (size less than 2.5µm) or PM _{2.5} µg/m ³	Annual* 24 hours**	40 60	40 60	- Gravimetric - TOEM - Beta attenuation
5	Ozone (O ₃) µg/m ³	8 hours** 1 hour**	100 180	100 180	- UV photometric - Chemiluminescence - Chemical Method
6	Lead (Pb) µg/m ³	Annual* 24 hours**	0.50 1.0	0.50 1.0	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
7	Carbon Monoxide (CO) mg/m ³	8 hours** 1 hour**	02 04	02 04	- Non Dispersive Infra Red (NDIR) spectroscopy
8	Ammonia (NH ₃) µg/m ³	Annual* 24 hours**	100 400	100 400	-Chemiluminescence -Indophenol blue method

(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C ₆ H ₆) µg/m ³	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP) - particulate phase only, ng/m ³	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m ³	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m ³	Annual*	20	20	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper

- * Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.
- ** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note. — Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

SANT PRASAD GAUTAM, Chairman
[ADVT-III/4/184/09/Exty.]

Note: The notifications on National Ambient Air Quality Standards were published by the Central Pollution Control Board in the Gazette of India, Extraordinary vide notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998.