GOVERNMENT OF INDIA

MINISTRY OF JAL SHAKTI

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

LOK SABHA

UNSTARRED QUESTION NO. 1528

ANSWERED ON 13.02.2025

CHEMICAL CONTAMINATION IN GROUNDWATER

1528. SHRI SRIBHARAT MATHUKUMILLI:

Will the Minister of **JAL SHAKTI** be pleased to state:

(a) the details of groundwater samples analyzed for chemical contamination across various districts in the country, including data on the levels of nitrate, fluoride and uranium contamination;

(b) whether any excessive or unsafe levels of groundwater chemical contamination have been reported in central and southern States and if so, the details thereof, State-wise along with the district-wise information for Andhra Pradesh;

(c) the details of assessments conducted on the potential risks of such contamination on public health and associated environmental toxicity; and

(d) whether the Government has undertaken any safeguard measures to address unsafe levels of aforementioned chemicals in groundwater, if so, the details thereof and if not, the reasons therefor?

ANSWER

THE MINISTER OF STATE FOR JAL SHAKTI

(SHRI RAJ BHUSHAN CHOUDHARY**)**

(a) The Annual Groundwater Quality Report 2024 prepared by the Central Ground Water Board (CGWB) is based on the ground water sampling and analysis from 15,259 monitoring locations spread across the country. The major objective of the report is to study various water quality parameters like Electrical Conductivity(EC), Fluoride, Arsenic, heavy metals, Nitrate, Uranium etc. in groundwater used for drinking and agriculture purposes. The report has found the presence of above contaminants beyond the prescribed limits for human consumption in certain isolated pockets of some States/UTs. The summary on the levels of nitrate, Fluoride and Uranium is presented in **Annexure –I**.

(b) As is the case with rest of the country, certain ground water contaminants beyond permissible limits have been reported in isolated pockets of central and southern states as well. State-wise contaminants detail is provided in **Annexure –II**. Further, District-wise contaminants detail for State of Andhra Pradesh is provided in **Annexure –III**.

(c) Use of Ground Water for drinking purpose having Arsenic, Fluoride, heavy metals etc. above the permissible limits over a prolonged period of time is known to cause several adverse health effects. As per the information provided by M/o Health & Family Welfare, Arsenic exposure can cause skin lesions, cancer, cardiovascular diseases and developmental effects in children. Likewise, excessive fluoride in the ground water

can result in dental and skeletal Fluorosis. Similarly, various other contaminants are known to produce different kinds of adverse effects.

(d) Water being a State subject, sustainable development and management of groundwater resources, including the quality aspect is primarily the responsibility of the State Governments. However, the Central Government facilitates the efforts of the State Governments through technical and financial assistance through its various schemes and projects. In this direction, the important steps taken by the Ministry of Jal Shakti and other central ministries are given below :-

- Data on ground water quality available with CGWB are made available in public domain through reports and also shared with concerned State Governments for taking necessary remedial measures. To further accelerate the dissemination of knowledge on ground water quality, CGWB has initiated the practice of issuing half-yearly ground water quality Bulletins and fortnightly Alerts so that immediate action can be initiated in the reported areas.
- Under the National Aquifer Mapping Programme (NAQUIM) of CGWB, special attention is being given to the aspect of ground water quality including contamination by toxic substances in ground water. CGWB is successfully constructing Arsenic free wells in arsenic affected areas using the innovative cement sealing technology for tapping contamination free aquifers and also providing technical assistance to state departments in construction of Fluoride safe wells.
- Government of India, in partnership with States, is implementing Jal Jeevan Mission (JJM) since August, 2019 to provide potable tap water supply of prescribed quality and on regular &long term basis to every rural household in the country. Under JJM, while planning water supply schemes to provide tap water supply to house-holds, priority is given to quality-affected habitations. While allocating the funds to States/ UTs in a particular financial year, 10% weightage is given to the population residing in habitations affected by chemical contaminants.

- CPCB has made a comprehensive programme on water pollution for controlling point sources the main components of which are developing industry specific standards and general standards for discharge of effluents notified under the Environment (Protection) Act, 1986 by Ministry of Environment, Forest and Climate Change, Govt. of India to be enforced by the SPCBs / PCCs through consent mechanism; Establishment of Common Effluent Treatment Plants (CETPs) for cluster of Small Scale Industries; Installation of Online Continuous Effluent Monitoring Systems (OCEMS) by Grossly Polluting Industries for getting real time information on the effluent quality etc.
- Awareness generation programs/ workshop on various aspects of ground water including preventing ground water pollution and safe use of contaminated water are being conducted by CGWB periodically.

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ANNEXURE-I

ANNEXURE REFERRED TO IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 1528 TO BE ANSWERED IN LOK SABHA ON 13.02.2025 REGARDING "CHEMICAL CONTAMINATION IN GROUNDWATER".

The summary on the levels of nitrate, Fluoride and Uranium

Parameters	**No. of samples collected**	**No. of districts partially Affected**	**% of samples exceeding Permissible limits**
Nitrate	15259	443	19.8%
Fluoride	15259	263	9.04%
Uranium	11445	132	6.6%

ANNEXURE-II

ANNEXURE REFERRED TO IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 1528 TO BE ANSWERED IN LOK SABHA ON 13.02.2025 REGARDING "CHEMICAL CONTAMINATION IN GROUNDWATER".

Details of Contaminants exceeding permissible limits for Central and Southern States of India

State	No. of samples analysed	% of samples with EC more than permissible Limits (> 3000 µS/cm)	% of samples with Fluoride more than permissible Limits (>1.5 mg/L)	% of samples with Nitrate more than permissible Limits (> 45 mg/L)
Andhra Pradesh	1149	9.7	11.31	23.5
Chhattisgarh	783	0.3	1.79	11.49
Karnataka	345	14.5	17.68	48.99
Kerala	342	0	0.29	6.73
Madhya Pradesh	589	1.2	1.02	22.58
Maharashtra	1567	3.6	1.91	35.74
Tamil Nadu	916	9.2	9.72	37.77
Telangana	1150	3	14.87	27.48

ANNEXURE-III

ANNEXURE REFERRED TO IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 1528 TO BE ANSWERED IN LOK SABHA ON 13.02.2025 REGARDING "CHEMICAL CONTAMINATION IN GROUNDWATER".

District-wise Detail of contaminants exceeding Permissible limit for Andhra Pradesh

Sr. No	Districts	No. of Samples analyzed	% of samples with EC more than permissible Limits (> 3000 µS/cm)	% of samples with Fluoride more than permissible Limits (>1.5 mg/L)	% of samples with Nitrate more than permissible Limits (> 45 mg/L)
1	**Alluri Sita Rama Raju**	40	0.0	5.0	17.5
2	**Anakapalli**	27	3.7	11.1	44.4
3	**Ananthapur**	62	4.8	19.4	19.4
4	**Annamayya**	73	5.5	5.5	12.3
5	**Bapatla**	33	24.2	3.0	6.1
6	**Chittoor**	61	1.6	1.6	11.5
7	**East Godavari**	25	4.0	12.0	16.0
8	**Eluru**	37	29.7	0.0	13.5
9	**Guntur**	32	18.8	0.0	21.9
10	**Kakinada**	23	8.7	0.0	21.7
11	**Konaseema**	31	3.2	0.0	6.5
12	**Krishna**	56	30.4	0.0	5.4
13	**Kurnool**	28	28.6	10.7	50.0
14	**Nandyal**	25	0.0	4.0	12.0
15	**NTR**	27	7.4	14.8	40.7
16	**Palnadu**	70	22.9	27.1	51.4
17	**Parvathipuram Manyam**	24	4.2	0.0	20.8
18	**Prakasham**	102	11.8	24.5	42.2
19	**SPS Nellore**	51	5.9	21.6	29.4
20	**Sri Satya Sai**	85	4.7	31.8	34.1
21	**Srikakulam**	49	4.1	2.0	22.4
22	**Tirupathi**	30	6.7	6.7	6.7
23	**Visakhapatnam**	20	0.0	0.0	10.0
24	**Vizianagaram**	45	2.2	0.0	22.2
25	**West Godavari**	26	7.7	0.0	15.4
26	**YSR Kadapa**	67	6.0	16.4	14.9
Andhra Pradesh		**1149**	**9.7**	**11.3**	**23.5**

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