

Item No. 03

Court No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

Original Application No. 384/2019
(Earlier O.A. No. 156/2015)

(With report dated 20.01.2021)

Mrs. Sunita Pandey & Anr

Applicant(s)

Versus

Union of India & Ors.

Respondent(s)

Date of hearing: 01.02.2021

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SHEO KUMAR SINGH, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER**

Respondent: Mr. A.K. Prasad, Advocate for MoJS
Mr. Pradeep Misra and Mr. Daleep Dhyani, Advocates for UPPCB
Mr. Rajkumar, Advocate for CPCB
Mr. I.K. Kapila, Advocate for UP Jal Nigam

ORDER

1. The issue for consideration is the steps to deal with the problem of contamination of groundwater due to Arsenic and availability of clean drinking water in Bahraich, Ballia, Balrampur, Bareilly, Basti, Bijnor, Chandauli, Ghazipur, Gonda, Ghorakpur, Lakhimpur Kheri, Meerut, Mirzapur, Muradabad, Rai Bareilly, Santkabirnagar, Shajahanpur, Siddharthnagar, Sant Ravidas Nagar and Unnao and certain other districts in Uttar Pradesh and other similarly affected areas in the country including in Assam, Bihar, Jharkhand, Karnataka, Punjab and West Bengal.

2. After considering the matter for more than three years, vide order dated 25.10.2018, this Tribunal undertook an extensive review on the subject and noted the gravity of situation shown by high arsenic content leading to serious diseases and environmental damage in several districts of Uttar Pradesh. Twenty-eight districts of Uttar Pradesh were identified as affected by the problem in the report prepared by the State Water Resources Agency, Uttar Pradesh. A team of the Ministry of Environment, Forest and Climate Change (MoEF&CC) found that number of deaths had taken place from the diseases on account of the problem. The Ministry of Drinking Water and Sanitation took cognizance and identified mitigation measures. The Ministry of Agriculture also identified certain steps to be taken. The matter was discussed in the Parliament and a report was submitted on the subject. Uttar Pradesh Jal Nigam identified 310 village hamlets situated in 179 revenue villages of District Ballia and 165 village hamlets situated in 49 revenue villages in District Lakhimpur Kheri, where shallow ground water is found to contain Arsenic, in excess of permissible limit of 0.05 mg/L, prescribed for potable water by Bureau of Indian Standards (BIS:10500). It was noted that as per inputs available with the CGWB, the Arsenic is prevailing in the underground water (above 0.05 mg/L or 50 ppb) in the districts/blocks of Bahraich, Ballia, Balrampur, Bareilly, Basti, Bijnor, Chandauli, Ghazipur, Gonda, Ghorakpur, Lakhimpur Kheri, Meerut, Mirzapur, Muradabad, Rai Bareilly, Santkabirnagar, Shajahanpur, Siddharthnagar, Sant Ravidas Nagar and Unnao in the State of Uttar Pradesh. The well water contained Arsenic, a known carcinogen that occurs in ground water at concentrations that can exceed the Maximum Contaminant Level (10 ppb/WHO Standard). In order to reduce Arsenic exposure, private well-

owners could either rely on treated water for drinking or install in-house water treatment systems.

3. The Tribunal noted that the Inter-Ministerial Group (IMG) of the Government of India also prepared a report suggesting an action plan to mitigate Arsenic contamination and made comprehensive recommendations on the whole gamut. The Tribunal noted that the matter was highlighted in news item in Hindustan Times dated 26.11.2015 under the heading “Arsenic contamination on the rise: 1 Lakh dead, 3 lakh suffering”. According to the said news item, **7.04 crore people are affected by Arsenic related diseases in 12 States and 1 lakh persons have died as per report of a Committee of Secretaries.** A Joint Inspection Report was filed before this Tribunal by the Central Pollution Control Board, MoEF&CC, CGWA and Uttar Pradesh Pollution Control Board to the effect that Arsenic Removal Units were not working properly. Heavy metals were seen in the water samples. **The Tribunal directed dismantling of hand pumps with concentration of Arsenic beyond permissible limits.** The Tribunal also noted the report of the NITI Aayog published in June, 2018 on “Water Management Index” to the effect that **70% water in India is contaminated. India is at 120th number out of 122 countries in water quality index. The report mentions that the acute water crisis is being faced by 600 million people. About two lakh people die every year due to inadequate access to safe water.** Accordingly, the Tribunal issued directions for remedial action including a direction to the Secretary, Ministry of Drinking Water and Water Resources to file a report compiling information from the States in terms of the order of the Tribunal.

4. The matter was thereafter considered on 11.09.2019 and 28.01.2020 in the light of feedback of Ministry of Jal Shakti (MoJS). On 28.01.2020, this Tribunal noted the status and directed as follows:

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9. An affidavit dated 13.12.2019 has been filed by the Department of Drinking Water and Sanitation, Ministry of Jal Shakti in pursuance of the above order. However, during the hearing, the information is sought to be updated in the form of following table of Arsenic affected habitations and population as on 26.01.2020:-

State	As on 25.03.2019		As on 25.06.2019		As on 09.12.2019		As on 26.01.2020	
	No. of Arsenic Affected Habitations	Population	No. of Arsenic Affected Habitations	Population	No. of Arsenic Affected Habitations	Population	No. of Arsenic Affected Habitations	Population
Assam	4,301	16,07,660	4,293	16,05,148	3,343	12,53,702	3,309	12,42,151
Bihar	807	12,05,934	804	12,01,715	336	5,15,474	335	5,14,396
Jharkhand	19	13,336	19	13,336	03	6,714	3	6,714
Karnataka	3	2,590	2	1,706	0	0	0	0
Punjab	652	8,28,073	660	8,36,625	646	8,22,381	644	8,20,192
Uttar Pradesh	707	5,32,507	650	4,57,893	607	4,09,918	606	4,09,180
West Bengal	9,126	93,19,930	7,544	69,93,938	6,207	55,24,893	5,304	44,50,889
Total	15,615	1,35,10,030	13,972	1,11,10,361	11,142	85,33,082	10,201	74,43,522

9. Learned Counsel for the Department states that the targeted date for total remediation is 31.03.2021. **The table quoted above shows that there is hardly any improvement in the situation in the State of Punjab. Progress with regard to State of Uttar Pradesh, Assam and Bihar is not adequate. The problem is acute in State of West Bengal. Accountability needs to be fixed on erring officers and timelines for total remedial needs to be pre-poned to 31.12.2020 in view of serious health consequences. In the interim period, alternate arrangements need to be made**

for the supply of safe potable water to inhabitants of affected areas.

10. *Let further steps be taken at the earliest and rigorously monitored by the Department of Drinking Water and Sanitation, Ministry of Jal Shakti. Status as on 31.03.2020 may be filed before this Tribunal by email at judicial-ngt@gov.in before the next date.*

11. The matter was last considered on 04.08.2020 in light of affidavit of the MoJS mentioning the steps taken for mitigation of arsenic and giving target of December, 2020 for remediation. The Tribunal directed further steps to be taken expeditiously and also considered the report of the Oversight Committee constituted by the Tribunal for the State of UP headed by Justice S.V.S. Rathore, former Judge of the Allahabad High Court and directed further action in the light thereof. The operative part of the order is as follows:-

“1to9..xxx.....xxx.....xxx

10. In pursuance of the above, the MoJS has filed an affidavit dated 12.05.2020 mentioning the steps taken for mitigation of Arsenic. It is mentioned that targeted date of December, 2020 for remediation of Arsenic is likely to be achieved in the States of Bihar, Jharkhand and Uttar Pradesh but in State of Punjab, two habitations may go beyond December, 2020. The MoJS has filed following table giving the status of the Arsenic affected habitation as on 28.07.2020, in comparison to the situation prevailing as on 25.03.2020 and thereafter:

State	As on 25.03.2019		As on 09.12.2019		As on 26.01.2020		As on 31.03.2020		As on 28.07.2020	
	No. of Arsenic Affected Habitations	Population	No. of Arsenic Affected Habitations	Population	No. of Arsenic Affected Habitations	Population	No. of Arsenic Affected Habitations	Population	No. of Arsenic Affected Habitations	Population
Assam	4,301	16,07,660	3,343	12,53,702	3,309	12,42,151	2,848	10,21,118	2,522	9,70,431
Bihar	807	12,05,934	336	5,15,474	335	5,14,396	332	5,13,635	405	7,31,982
Jharkhand	19	13,336	3	6,714	3	6,714	1	353	2	7,075
Karnataka	3	2,590	-	-	-	-	-	-	-	-
Punjab	652	8,28,073	646	8,22,381	644	8,20,192	621	8,04,898	616	7,97,628
Uttar Pradesh	707	5,32,507	607	4,09,918	606	4,09,180	592	3,98,932	164	2,33,647
West Bengal	9,126	93,19,930	6,207	55,24,893	5,304	44,50,889	4,705	39,64,829	1,395	19,37,691
Total	15,615	1,35,10,030	11,142	85,33,082	10,201	74,43,522	9,099	67,03,765	5,104	46,78,454

(Source: IMIS, DDWS)

11. We are of the view that while further steps must be taken expeditiously and monitored rigorously by the MoJS, the statistics may be duly cross-checked in qualitative and quantitative process.

12. The Oversight Committee for the State of U.P., headed by Justice S.V.S Rathore, former Judge of Allahabad High Court, mentioning the measures taken for remediation and the meetings conducted by the Oversight Committee. The timeline for completing the remedial work were directed to be preponed. The recommendations of the Committee are as follows:

“Recommendations:

In view of above we recommend as follows:

1. Jal Nigam has indicated that the remaining 164 habitations would be covered:

- a) By laying down piped water supply in 44 habitations by December 2020
- b) By laying down piped water supply in 45 habitations by March 2021
- c) By installing 120 ARUs by December 2020.

Since NGT has directed preponing the time lines from March 2012 to December 2020, Jal Nigam may be directed to expedite the work in the above mentioned 45 habitations so as to prepone the completion by 3 months.

2. The work of dismantling the hand pumps in Arsenic polluted habitations has not been done. It should be completed in the next 3 month and responsibility for negligence be fixed by Chief Secretary.

3. Health Department may conduct a health survey in the affected areas in next 3 months and present a micro plan indicating the health hazards and their mitigation strategy to NGT in 6 months' time.

4. The Agriculture Department may conduct a study to assess the impact of Arsenic on the food chain. They may prepare the impact assessment plan in 6 months' time alongwith mitigation strategy like change in cropping pattern, modification in agricultural practices etc.

5. The Panchayati Raj Development may work out a plan for ensuring involvement of Panchayats in operation and maintenance of these projects. The funds for operation/maintenance may be permitted from the devolution grants given to Panchayats.

6. Water Harvesting Schemes for harvesting rain water may be aggressively pursued in these villages. The State Government may make extra budgetary provisions/extra allocation in MGNREGA for Water Harvesting Schemes in these villages.

7. *Jal Nigam may be directed to conduct an annual survey every year of the quality of drinking water in this area and the adjoining areas to assess the impact of the mitigation measures on a continuous basis.*

The Member Secretary, UPPCB is directed to send this report to the Registrar General, National Green Tribunal, Principal Bench, New Delhi for placing the same before the Hon'ble Tribunal with a copy to the Chief Secretary, Government of UP for necessary action. The report also be uploaded on the website of the committee."

13. The recommendations of the Committee are accepted and necessary action in terms of the said recommendations may be taken by the concerned Departments of the State of U.P which may be further monitored by the Oversight Committee and a report furnished before the next date by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF.

14. Further report of status as on 31.12.2020 be also furnished by the MoJS before the next date by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF."

12. Accordingly, an affidavit has been filed by the Department of Drinking Water and Sanitation, MoJS on 29.01.2021 giving the compliance status and a report has also been filed on behalf of the Oversight Committee headed by Justice S.V.S. Rathore, former Judge of the Allahabad High Court on 20.01.2021.

13. In the Affidavit filed on behalf of the MoJS, reference has been made to the correspondence with the concerned States. The affidavit gives status of the steps taken and the current status of the problem in the affected States. Correspondence relates to opening of water quality testing facilities, setting up of water purification plants and piped water supply schemes, release of funds and short-term measures, wherever final remedy will take longer time. It is stated that at most of the locations, the work is expected to be completed by 31.03.2021. Relevant averments in the affidavit are:-

“15. The Government of India is providing financial assistance to States/UTs for Water Quality Monitoring & Surveillance (WQM&S) activities which inter-alia includes setting up of and upgrading existing water quality testing laboratories at various levels, providing chemicals and consumables to laboratories, etc. as per guidelines. Apart from that, this fund could also be used for procuring Field Test Kits (FTK) for water quality surveillance at the village level. In order to improve the operational environment of laboratories and to ensure technical competence for specific tests/ measurements, the States/ UTs have been advised to strive for NABL accreditation of drinking water quality testing laboratories as per ISO/IEC 17025. Under Jal Jeevan Mission (JJM), upto 2% of the allocation to States/UTs can be utilized for WQ&MS activities. It is submitted that **the States have been advised to carry out testing of drinking water sources once in year for chemical and physical parameters, and twice in a year for bacteriological contamination. Contamination of ground water is geo-genic in nature and number of Arsenic-affected habitations may increase/ decrease as per permissible limit of Arsenic. As reported by State Governments in the Integrated Management Information System (IMIS) of Department of Drinking Water and Sanitation, as on 31.12.2020, 1,751 rural habitations with population 23.07 lakh and as on 24.01.2021, 1,724 rural habitations with population 22.68 lakh are affected with Arsenic contamination. The State-wise details are annexed herewith as ANNEXURE-R13.**

16. That a letter dated 15.09.2020 from the Department of Drinking Water & Sanitation was sent to all States/ UTs including Arsenic-affected States requesting for opening of water quality testing facilities, established under erstwhile Accelerated Rural Water Supply Programme (ARWSP), National Rural Drinking Water Programme (NRDWP) and now JJM, for testing drinking water samples collected by public at all laboratories at nominal rates. Matter was rigorously taken up with States/ UTs. **As on date, most of the States/ UTs including all of the Arsenic-affected States have opened the 'water quality testing laboratories' for providing testing facilities to general public. Further, with a view to have uniformity in the testing rates across the country and to make it within the reach of the rural population, all States/ UTs were advised, vide letter dated 19.11.2020, to adopt the nominal rates recommended by a committee constituted by this Department, as it will help in encouraging rural population to get their water samples tested and in building confidence in the quality of water being supplied to their homes.** It will also be helpful in taking remedial action for ensuring supply of water as per prescribed quality. A true copy of letters dated 15.09.2020 and 19.11.2020 from the Department of Drinking Water & Sanitation is marked and annexed herewith as ANNEXURE-R14 & R15.

17. That in March 2016, with the recommendation of NITI Aayog, an amount of ₹1,000 Crores was released to various Arsenic & Fluoride-affected States for installation of community water purification plants and commissioning of piped water supply schemes. A table depicting State-wise details of release of funds and physical progress of Arsenic-affected habitations under NITI Aayog funds are annexed herewith as ANNEXURE-R16 & R17.

18. That Government of India, in March, 2017, has launched National Water Quality Sub-Mission (NWQSM), a four-year programme, as a part of **National Rural Drinking Water Programme (NRDWP)**, which has now been restructured and subsumed under **JJM**, to provide safe drinking water to **27,544 Arsenic/ Fluoride affected rural habitations which were reported by the States as on 18th August, 2016 in the country. NWQSM is going to end on 31.03.2021.** The funds released under NWQSM are specific to cover earmarked habitations, which is over and above the NRDWP/ JJM Coverage funds released to States. Since 2017, Govt. of India has released 4,160.34 Crore to the Arsenic/ Fluoride affected States under NWQSM. A true copy of the chart depicting the utilization of funds and the physical status of the Arsenic-affected habitations is annexed herewith as ANNEXURE-R18.

19. That water quality testing is a continuous process. Taking this into account, the State Governments have also reported that **there is an increase in number of Arsenic-affected habitations after 18th August, 2016. The State Governments are allowed to cover these over and above the earmarked Arsenic-affected habitations under NWQSM, through JJM Funds. A chart depicting the status of Arsenic-affected habitations (other than earmarked under NWQSM) is annexed herewith as ANNEXURE-R19.**

20. It is stated that in compliance with the Hon'ble NGT order dated 04.08.2020, Government of Assam has informed that necessary action has been taken for strict compliance of Hon'ble NGT order both at State and District level and as per the timeline suggested, all Arsenic-affected habitations has been mitigated either by short of long-term measures by 31.12.2020. A true copy of letter of compliance report received from the Government of Assam dated 08.01.2021 is marked and annexed herewith as ANNEXURE-R20.

21. It is stated that in compliance with the Hon'ble NGT order dated 04.08.2020, **Government of Bihar has informed that as on 13.01.2021, only 15 Arsenic-affected habitations has been left out for providing safe drinking water. The work is under execution and potable water in all these habitations will be provided by February, 2021.** A true copy of letter of compliance report received from the Government of Bihar dated 13.01.2021 is marked and annexed herewith as ANNEXURE-R21.

22. It is stated that in compliance with the Hon'ble NGT order dated 28.01.2020, Government of Jharkhand has informed that **one left out Arsenic-affected habitation is undergoing ongoing scheme coverage**. The affected habitation will be covered through Community Water Purification Plant (CWPP) by end of January 2021. A true copy of letter of compliance report received from the Government of Jharkhand dated 06.01.2021 is marked and annexed herewith as ANNEXURE-R22.

23. It is stated that in compliance with the Hon'ble NGT order dated 04.08.2020, Government of Punjab has informed that as per directions of Hon'ble NGT, short-term measures are being taken for all left out 563 habitations as on 21.01.2021. State has submitted the present status of work in all these habitations. State has also informed that they had worked continuously to prepare and award all planned work despite ongoing COVID 19 pandemic. Further, tenders were also re-invited due to less participation of bidders due to COVID-19. However, now the participation of bidders has been found to be good and State will provide potable water in all Arsenic-affected habitations through short-term measures by 30.06.2021. This includes coverage of 135 Arsenic-affected habitations [81 habitations by Arsenic with Retrofitted inline Arsenic-Iron Removal Plants (AIRPs) and 54 habitations by decentralized household purifiers] by 31.03.2021, 213 habitations through CWPPs by 31.05.2021, 120 habitations through Decentralized Household purifiers by 30.04.2021 and balance 95 habitations through retrofitted AIRPs by 30.06.2021. A true copy of letter of compliance report received from the Government of Punjab dated 21.01.2021 is marked and annexed herewith as ANNEXURE-R23.

24. It is stated that in compliance with the Hon'ble NGT order dated 04.08.2020, Government of West Bengal has informed that as on 31.12.2020 there are 1,115 left out Arsenic-affected habitations. State has submitted that work in these left-out habitations is expected to be completed by 31.03.2021. State has further submitted that DPR has been prepared for coverage of all left-out habitations through CWPPs and extension of pipeline from existing piped water supply scheme at an estimated cost of Rs. 421.48 Crore. Out of which, Administrative approval and Financial Sanction has been accorded for Rs. 274.32 crore. Out of this sanctioned amount of Rs. 274.32 crore, tender invited for work amounting to Rs. 194.89 crore. Work order amounting to Rs. 7.13 crore issued for implementation of work. A true copy of letter of compliance report received from the Government of West Bengal dated 18.01.2021 is marked and annexed herewith as Annexure - 24.

25. That it is further submitted that to enable every rural household to have Functional Household Tap Connection

(FHTC) by 2024 at service level of 55 litre per capita per day (lpcd), Government of India has started Jal Jeevan Mission (JJM), with an outlay of 23.60 lakh Crore, out of which Central's share is about 22.08 lakh Crore and remaining amount as State share. While allocating the funds under JJM to States/ UTs, 10% weightage is given to the population residing in habitations affected by chemical contaminants. Moreover, the funds provided to the States under JJM can be utilized for taking up schemes in water quality—affected areas on priority. Since, planning, implementation and commissioning of piped water supply scheme based on a safe water source may take time, purely as an interim measure, States/ UTs have been advised to install community water purification plants (CWPPs) in such habitations to provide potable water to every household at the rate of 8-10 litre per capita per day to meet drinking and cooking requirements. Under JJM, Govt. of India has released X7,292.47 Crore to States/UTs during 2020-21. The State-wise details of fund released to States/ UTs under JJM during 2020-21 is annexed herewith as ANNEXURE-R25.

26. That to bring focus on potable piped water supply in Anganwadi Centres, Ashramshalas and Schools on priority, '100 Days Campaign' was launched on 02.10.2020 under JJM to provide potable piped water to every school, anganwadi centre and ashramshala for drinking and cooking purposes and tap water for hand washing and in toilets. A true copy of letter dated 01.10.2020 and 02.10.2020 from the Department of Drinking Water & Sanitation is marked and annexed herewith as ANNEXURE-R26 & R27."

14. We may also make a reference to the stastics of affected arsenic affected habitations and reduction of such habitations in the last three years as per the document annexed with the affidavit:-

State-wise details of Arsenic affected habitations

State	As on 25.03.2019		As on 26.01.2020		As on 28.07.2020		As on 31.12.2020		As on 21.01.2021	
	No. of Arsenic Affected Habitations	Population	No. of Arsenic Affected Habitations	Population	No. of Arsenic Affected Habitation	Population	No. of Arsenic Affected Habitations	Population	No. of Arsenic Affected Habitations	Population
Assam	4,301	16,07,660	3,309	12,42,151	2,522	9,70,431	0	0	0	0
Bihar	807	12,05,934	335	5,14,396	405	7,31,982	34	78,909	24	71,946
Jharkhand	19	13336	3	6714	2	7075	1	75	1	75
Karnataka	3	2590	0	0	0	0	0	0	0	0
Punjab	652	8,28,073	644	8,20,192	616	7,97,628	598	7,78,237	591	7,56,701
Uttar Pradesh	707	5,32,507	606	4,09,180	164	2,33,647	3	4,300	0	0
West Bengal	9,126	93,19,930	5,304	44,50,889	1,395	19,37,691	1,115	14,46,139	1,108	14,39,932
Total	15,615	1,35,10,030	10,201	74,43,522	5,104	46,78,454	1,751	23,07,660	1,724	22,68,654

(Source: IMIS, DDWS)

15. We now notice the report of the Oversight Committee for the State of UP, set up by this Tribunal, headed by a former High Court Judge, which mentions the compliance status of relevant issues and recommendations as follows:-

“VIII. SUMMARY OF COMPLIANCE STATUS AS OF 17.01.2021

S. No.	Directions by Hon’ble Tribunal	Concerned Department	Compliance status
1.	<p><i>Jal Nigam has indicated that the remaining 164 habitations would be covered:</i></p> <p><i>a) By laying down piped water supply in 44 habitations by December 2020</i></p> <p><i>b) By laying down piped water supply in 45 habitations by March 2021</i></p> <p><i>c) By installing 120 ARUs by December 2020. Since NGT has directed preponing the time lines from March 2012 to December 2020, Jal Nigam may be directed to expedite the work in the above mentioned 45 habitations so as to prepone the completion by 3 months.</i></p>	<i>UP Jal Nigam</i>	<p>Complied</p> <p><i>As on 30.06.2020, there were 164 arsenic affected habitations in the State. Out of these 164 habitations, 45 are covered with piped water supply as of now. The remaining 119 habitations have been covered by the Community Water Purification Plant.</i></p>

2.	<p><i>The work of dismantling the hand pumps in Arsenic polluted habitations has not been done. It should be completed in the next 3 month and responsibility for negligence be fixed by Chief Secretary.</i></p>	<p><i>UP Jal Nigam/Panchayati Raj Department</i></p>	<p><i>Non-complied</i></p> <p><i>Identification and mapping of handpumps having Arsenic concentration beyond BIS permissible limit has been done by UP Jal Nigam. The handpumps are maintained by Panchayati Raj Department and in order to comply with the order of Hon'ble Tribunal with regard to dismantling of handpumps, UP Jal Nigam has sent letter Panchayati Raj Department on 27.07.2020.</i></p> <p><i>Panchayati Raj Department,</i></p>
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			<p><i>UP has sent letter to UP Jal Nigam dated 09.10.2020 mentioning that Gram Panchayat is undertaking the work of re boring of the installed hand pumps in the rural areas. The letter also mentioned that in the mandate no provision has been made by the Gram Panchayat regarding dismantling of hand pumps. Further, in the letter a request was made to UP Jal Nigam to commence the work of dismantling of installed hand pumps in the arsenic affected areas.</i></p>
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3.	The Agriculture Department may conduct a study to assess the impact of Arsenic on the food chain. They may prepare the impact assessment plan in 6 months' time along with mitigation strategy like change in cropping pattern, modification in agricultural practices etc.	Agriculture Department	Partially complied Agriculture Department has collaborated with NBRI, Lucknow to perform impact assessment study of arsenic on food chain. NBRI has performed this study in 20 districts covering 264 blocks in the State for which draft report has been submitted by NBRI to Agriculture Department and final report will be submitted within month.
4.	Jal Nigam may be directed to conduct an annual survey every year of the quality of drinking water in this area and the adjoining areas to assess the impact of the mitigation	UP Jal Nigam	Non-complied No information provided.
5.	Health Department may conduct a health survey in the affected areas in next 3 months and present a micro	Health Department	Partially Complied Department of Health and Family Welfare has submitted compliance report dated
	plan indicating the health hazards and their mitigation strategy to NGT in 6 months' time.		15.01.2021 stating that had taken the opportunity of the Mukhya Mantri Arogya Swasthya Mela to conduct health camps in various places in every district. The total number of health camps conducted in district Bahraich, Ballia, Balrampur, Bareilly, Basti, Bijnor, Chandauli, Ghazipur, Gonda, Gorakhpur, LakhimpurKheri, Meerut, Mirzapur, Muradabad, Rai Bareilly, Santkabirnagar, Shajahanpur, Siddharthnagar, SantRavidas

			Nagar and Unnao were 980 and the total number of patients who have come up to the camp were 75236.
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IX. RECOMMENDATIONS BY OVERSIGHT COMMITTEE, NGT

In view of the above, we recommend as follows:

- i. With regard to dismantling of hand-pumps in arsenic affected habitations, only identification and mapping of hand-pumps having arsenic concentration greater than BIS limit has been done till date. **No action has been taken with regard to dismantling of hand-pumps. UP Jal Nigam/Panchayati Raj Department may be directed to commence the work without any further delay and Chief Secretary, UP may be directed to fix the responsibility of inaction.***
- ii. In order to have a complete check on the arsenic contamination in groundwater and impact of mitigation measures, it is necessary to conduct surveys to assess the quality of drinking water in arsenic contaminated habitations. **UP Jal Nigam may be directed to conduct annual surveys in the areas/districts contaminated with arsenic and their adjoining areas.***
- iii. **Water Harvesting Schemes for harvesting rain water may be aggressively pursued in these villages. The State Government may make extra budgetary provisions/extra allocation in MNREGA for Water Harvesting Schemes in these villages.***
- iv. The Panchayati Raj Development may work out a plan for ensuring involvement of Panchayats in operation and maintenance of these projects. The funds for operation/maintenance may be permitted from the devolution grants given to Panchayats.*
- v. **Health Department has conducted only health survey in the arsenic affected areas but no micro plan indicating health hazards and mitigation strategy is presented. Health Department may be directed to submit a micro plan mentioning the same within next two months.***
- vi. **Agriculture Department may be directed to explore the possibilities of cultivation of arsenic resistant plant varieties which may reduce the impact of arsenic on food chain.***

- vii. UP PCB/Panchayati Raj Department may be directed to undertake campaigns to make the people aware about rooftop rain water harvesting system.**
- viii. UPPCB may be directed to collaborate with different research institutes to explore and develop the possible use of filtration system for groundwater based on the concept of 'Arsenic Filters for Groundwater in Bangladesh'.**
- ix. The strategies of bioremediation of soil using arsenic tolerant bacteria and/or phytoremediation using hyperaccumulating plants may be promoted as cleaning process to prevent the leaching of contaminant in water.**
- x. The approaches such as "Microbial-based Phytoremediation" which is based on the association of metal tolerant bacteria in rhizosphere of hyperaccumulating plant may also be undertaken for arsenic treatment in highly contaminated environment.**
- xi. The possibility of using biochar as soil amendment and sorption of heavy metals from contaminated soils may also be explored. Such techniques not only reduce waste but also helps in providing green and sustainable solutions in areas contaminated with metal pollution. UPPCB may be directed to collaborate with institutes of repute to explore the applications of such techniques in the areas contaminated with heavy metals in the State...."**

16. In view of the above, let further steps in the matter be taken by the concerned States which may be monitored by the MoJS at the National level and by the Chief Secretaries of the concerned States, particularly in West Bengal and Punjab. The Chief Secretary, UP may sort out inter-departmental responsibilities and ensure compliance with regard to dismantling of hand pumps in arsenic affected habitations, along with action on other recommendations of the Oversight Committee. The CGWA, the CPCB and concerned State PCBs/PCCs may monitor water quality in the affected areas and compile the relevant data and place on a common portal for future reference and remedial action.

Due attention may be given to cover other geogenic contaminants like fluoride, nitrate and other contaminants harmful to human and animal health as well as for irrigation. CPCB and SPCBs/PCCs may give emphasis to remediate identified contaminated sites having potential threats to groundwater contamination as directed vide order dated 29.01.2021 in OA No. 804/2018, Rajive Narayan & Anr. vs. Union of India & Ors.

MoJS may, in contaminated areas where there is geogenic contamination, explore possibility of rain water harvesting systems for recharging and dilution of the contaminated water and also avoiding excessive abstraction of groundwater, so that building of contaminants does not take place.

The application is disposed of.

A copy of this order be forwarded to the CPCB, MoJS, Chief Secretaries, UP, Punjab and West Bengal and the State PCBs of Assam, Bihar, Jharkand, Karnataka, Punjab and West Bengal by e-mail.

Adarsh Kumar Goel, CP

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February 01, 2021
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