BEFORE THE NATIONAL GREEN TRIBUNAL

(WESTERN ZONE) BENCH, PUNE

APPLICATION No. 47/2013(WZ)

(M.A. No.21/2015)

CORAM:

Hon'ble Mr. Justice V.R. Kingaonkar
(Judicial Member)
Hon'ble Dr. Ajay A. Deshpande
(Expert Member)

B E T W E E N:

1. **Mr. Asim Sarode,**
   Age 40 years, Occn : Advocate,

2. **Mr. Vikas Shinde,**
   Age 27 Yrs. Occn : Advocate,

3. **Mrs.Neha Pathak-Khati,**
   Age 27 Yrs. Occn: Advocate,

4. **Mrs.Vinda Vilas Mahajan,**
   Age 29 yrs., Occn : Advocate,

5. **Mrs.Rohini Randive,**
   Age 30 yrs., Occn : Advocate,
   Nos.1 to 5 having their office at
   Flat No.1, Prathamesh Housing Society,
   Lane No.5, Prabhat Road, Pune.

6. **Mrs.Smita Singalkar-Sarode,**
   Age 35 years, Occn : Advocate,
   R/at 2/3, 2/4, Lord Apartment,
   North Ambazari Marg, Dharampeth,
   Khare town, Nagpur - 10

7. **Ms. Roshani Wanode,**
   Age 28 Yrs. Occn : Advocate,
   R/at Indira Chowk, Babulgaon,
   Taluka : Babulgaon,
   District : Yavatmal.

8. **Mr.Mahesh Bhosale,**
   Age 29 Yrs. Occn: Advocate,
   R/at. Pargaon, Tal. Patoda,
   Distt : Beed.

9. **Ms. Savita Khotre,**
Age yrs., Occn : Advocate,
R/at. Old City, Kala Maruti Road,
Akola-444 002.

....Appellants

A N D

1. **The District Collector, Nanded**
Collectorate Campus, Nanded

2. **The District Collector, Chandrapur,**
Collectorate Campus, Chandrapur

3. **The District Collector, Beed,**
Collectorate Campus, Beed.

4. **The District Collector, Yavatmal.**
Collectorate Campus, Yavatmal.

5. **The District Collector, Latur,**
Collectorate Campus, Latur.

6. **The District Collector, Washim,**
Collectorate Campus, Washim.

7. **The District Collector, Parbhani,**
Collectorate Campus, Parbhani.

8. **The District Collector, Hingoli,**
Collectorate Campus, Hingoli.

9. **The District Collector, Jalna,**
Collectorate Campus, Jalna.

10. **The District Collector, Jalgaon.,**
Collectorate Campus, Jalgaon.

11. **The District Collector, Nagpur,**
Collectorate Campus, Nagpur.

12. **The District Collector, Bhandara,**
Collectorate Campus, Bhandara

13. **The Secretary,**
Ministry of Health,
Mantralaya, Mumbai 400 032.

14. **The Regional Officer**
The Maharashtra Pollution Control Board,
Amravati Region,
Sahakar Surbhi, Bapatwadi,
Near Vivekanand Colony, Amravati 414 006

15. **The Regional Officer**
The Maharashtra Pollution Control Board,
Aurangabad Region,
Paryavaran Bhavan, A-4/1 MIDC Area,
Chikalthana, Near Seth Nandlal Dhoot
Hospital, Jalna Road, Aurangabad 421 210

16. **The Regional Officer**
The Maharashtra Pollution Control Board,
Nagpur Region,
Udyog Bhavan, 6th floor,
Near Sale Tax Office, Civil lines,
Nagpur.

17. **The Regional Officer,**
The Maharashtra Pollution Control Board,
Chandrapur Region,
Brij Niwas, Near Janata School,
Back side of Jal Shudhikaran Tank,
Civil Lines, Chandrapur 442 401.

18. **Directorate Groundwater Surveys**
& Development Agency,
Through : Its Director,
Office at Bhujal Bhavan, S.No.53/A/4,
Krushi Vidyalaya Area, Wakdewadi Road,
Shivaji Nagar, Pune 411 005.

19. **The Secretary,**
Revenue Department, Mantralaya,
Mumbai 400 032.

20. **Central Ground Water Authority,**
Central Ground Water Board,
Bhujal Bhavan, NH-IV, Faridabad 121 001.

21. **Principal Secretary,**
Water Resources Department,
Mantralaya Main Building,
3rd Floor, Madam Cama Road,
Hutatma Rajguru Chowk, Mantralaya,
Mumbai 400 032.

22. **Environment Department,**
15th floor, New Administrative Bldg.

Madam Cama Road, Mantralaya,
Mumbai 400 032.

...Respondents

Counsel for Appellant :

Mr. Asim Sarode, W/Mr. Vikas Shinde,

Counsel for Respondent No. 5:

Mr. B.G. Kadam, Adv.

Counsel for Respondent No.13 & 18 :

Mr. A.S. Mulchandani, AGP

Smt. Ujawala Pawar, DGP

Counsel for Respondent No.14 to 17 :

Mr. D.M. Gupte, Adv. a/w.

Mrs. Supriya Dangare, Adv.

Mr. Saurabh Kulkarni, Adv.

Date: January 11th, 2016

J U D G M E N T

1. The Applicants who are practicing Advocates, have filed this Application essentially to address the environmental concern faced by residents of more than 12 (twelve) Districts in the State of Maharashtra due to contaminated ground water in terms of increased level of fluorides and supply thereof. The Applicants submit that the increasing contamination of groundwater in vast tracks in the State of Maharashtra due to unabated over-exploitation of groundwater for domestic, industrial and agricultural purposes is resulting into increase in concentration of the fluorides in the groundwater. They submit that the supply of

such contaminated groundwater to the large population is encroaching upon their right to live with human dignity conferred vide Article 21 of the Constitution. They further submit that such increasing environmental contamination of the groundwater in terms of fluorides contents due to human interference and unabated over-exploitation is a substantial environmental issue and is very well covered under provisions of Section 14(1) of the National Green Tribunal Act, 2010. They also seek suitable directions for restitution and restoration of environment under Section 15 of the National Green Tribunal Act, 2010.

2. In brief, the case of the Applicants is that various newspapers and electronic media have recently come out with several Status Reports and Articles on the state of groundwater quality, particularly, in the rural areas in the State of Maharashtra, highlighting increase in cases of the fluorosis. They claim that the Government authorities are fully aware about the prevalence of fluorosis in the major portion of the Vidarbha, Marathwada and Western Maharashtra, besides some other Districts; and the Government is already implementing a particular programme to deal with the ever increasing menace of fluorosis. However, they claim that the increase in unabated over-exploitation of the groundwater besides certain industrial discharges are aggravating the problem further and the authorities have failed to take holistic and integrated approach to deal with

this problem. They claim that there are several authorities like MPCB i.e. Respondent Nos.14 to 17, GSDA-Respondent No.18, District Collectors and Department of health which failed to take effective steps against those who are exploiting the groundwater by excessive extraction thereof. The ill-effects of higher fluoride concentration in the groundwater are well documented and an admitted fact. In short, the contention of the Applicants is that *unbeknownst*, the rural population is forced to drink the water which is contaminated with the increased concentration of the fluorides which is directly harming to their health. The Applicants have placed on record some documents and articles, and prayed for following reliefs :

1) The Respondents may kindly be directed to submit a time bound plan of action to address the issues related to fluoride mixed water.
2) The Respondent Nos.14 to 18 may be asked to submit the analysis of water quality, level of contamination in groundwater in the Districts Nanded, Chandrapur, Beed, Yavatmal, Latur, Washim, Parbhani, Hingoli, Jalna, Jalgaon, Nagpur, Bhandara etc. 12 (twelve) Districts and the percentage of fluoride found in the analysis of the water from these above mentioned Districts.
3) The Respondent No.13 may be asked to submit information as to whether they are having dental health doctors appointed at Nanded, Chandrapur, Beed, Yavatmal, Latur, Parbhani, Hingoli, Jalna, Jalgaon, Nagpur, Bhandara etc. 12 Districts not only at district level but at various Public Health Centres in

each above mentioned Districts to address the fluorides mixed water issue respectively.

4) The Respondent Nos.1 to 12 may be asked to submit report of persons affected by skeletal fluorosis measures taken by them to address the same.

5) The Respondents may be directed to submit plan of action in two phases one shall be immediate action and other shall be consisted of long-standing plan.

6) The Respondents may be directed to provide and supply pure and good quality drinking water to all the fluorosis affected areas.

7) The Respondents may be directed to make the headcount of all such fluorosis affected people and provide them proper monetary compensation.

8) Respondent Nos.1 to 12 and Respondent No.13 may be directed to provide medical treatment and medicine on war footing to the persons living with fluorosis and their family members.

9) The Respondents are empowered to grant various permissions for digging wells and borewells, they may be directed to submit detailed district-wise chart regarding number of permissions given for digging wells and borewells in last 5 (five) years in Maharashtra.

10) The Respondents may be directed to submit detailed report of last 5 (five) years regarding how many legal actions have been taken against those who indulge in illegal digging and how many offenders are tried and penalized in Court of Law under provisions of the Maharashtra Groundwater Act for illegally digging wells, borewells.

11) The Respondents may be directed to submit report about number of private borwells or deep-tube wells in various fluorosis affected districts found within 500 meters of a public drinking water source, violating the Law.

12) The Respondents may be directed to submit on record as to how much fund have been spend and utilized in fight against fluorosis and on providing pure drinking water.

13) The Respondents may be directed to furnish details regarding number of persons affected by skeletal fluorosis, dental fluorosis and number of death happened due to fluorosis.

14) The Respondents may be directed to submit as to how many persons have been authorised and permitted to sale water commercially through tankers, tractors, from borewells etc.

3. Respondent Nos.14 to 17 i.e. Maharashtra Pollution Control Board (MPCB) filed an affidavit dated 11th March 2014 through Joint Director, Water Pollution Control. MPCB states that it is conducting the groundwater quality monitoring in the State of Maharashtra under two separate programmes i.e. National Water Monitoring Programme (NWMP) and State Water Monitoring Programme (SWMP). In Amravati Regional Office, analysis results of groundwater sample are generally within the limits of 2 mg/l for the fluoride concentration, though it is slightly exceeding at three (3) locations and at all other locations, it is within permissible limits. In Nagpur Regional Office, all the samples are well within the limits of 2 mg/l. In Chandrapur, Regional Office, the fluoride contents in the three (3) samples are found well within permissible limits. In short, it is the stand of MPCB is that they are adopting the groundwater quality monitoring under specific programmes which also includes fluoride monitoring. MPCB

further contends that they are also implementing the River Regulation Zone Policy, which effectively ensures that the industrial discharges are adequately treated and disposed.

4. Respondent No.18 i.e. Groundwater Surface and Development Agency filed an affidavit through the Deputy Director (R&D) on 26th March 2015 and opposed the Application. The GSDA submits that GSDA is a technical organisation with a specific mandate to provide necessary assistance to the State Government and District Administration for the water management aspects. GSDA submits that the fluoride pollution in the groundwater is because of the presence of specific minerals in the geological formation i.e. rock type below the surface of earth. GSDA, therefore, denies that if the water is explored from the deeper depths of the earth, there are higher concentrations of fluoride, nitrate and Arsenic in groundwater. Out of geological area of Maharashtra, 81 per cent of the area is covered by hard volcanic rock, commonly known as Deccan basalt. Generally, in Deccan Plateau of Maharashtra, groundwater occurs in shallow aquifers. Therefore, in geological terms, the reality is, as you go deeper and deeper in the hard rock, chances of getting groundwater are negligent. The Respondent-GSDA also submitted details regarding fluoride analysed in 12 (twelve) Districts of the Maharashtra, through the GSDA monitoring programme. It is observed that for the pre-monsoon period (2012-13), out of 5120 samples,

604 samples were containing fluoride above 1.5 ml/l. Similarly, for the post monsoon period, out of 5114 samples, 453 samples were found containing fluoride above 1.5 mg/l.

5. Respondent No.19 i.e. Central Ground Water Authority filed an affidavit on 20th August 2015 and it is stated that the fluoride contents in the groundwater is mainly due to natural contamination and the process of dissolution from rock source through weathering of primary minerals rocks, fluoride is released into the soil and the groundwater. Apart from natural sources, anthropogenic activities like use of phosphate based fertilisers by the farmers, leaching down to the saturated zones by the return irrigation flows, also can cause fluoride contamination in the groundwater. The contamination of groundwater either due to geogenic source or anthropogenic sources is ordinary and irreversible process. In such contaminated areas either the alternate safe drinking water source is a dependable source or ensuring supply of groundwater, after treatment to contaminated groundwater needs to be practiced.

6. Respondent No.19 filed additional affidavit on 6th October 2015 and placed on record information related to notified areas, permissions and guidelines relevant to 12 (twelve) Districts in the State of Maharashtra. It is further stated that Respondent CGWA has not notified any area in the 12 (twelve) Districts in the State of Maharashtra under these guidelines. A list of industries/projects which have

been granted NOC as per the guidelines in some of these districts is submitted showing that about 20 (twenty) industries in different parts of State are given permission by Respondent CGWA. CGWA further states that there are no complaints registered with CGWA for action. If any complaint is registered, the same will be forwarded to District Administration for needful investigation and action in accordance with the Law.

7. Respondent No.1 filed an affidavit on 2nd August 2014 and submits that out of 6060 water samples of various sources, 645 samples from 383 villages were found to be having fluoride contents above the permissible limits. It is also informed that the scientific state of fluoride content in the ground water is that fluoride is inbuilt content in geological formation which is generally struck in some igneous and sedimentary rocks with their genesis. It is stated that though due to scarcity and drought like condition, there is a depletion of groundwater level, it is not linked to the increase in fluoride levels. Further, the fluorosis control programme is initiated and a team of one fluorosis consultant, one fluorosis technician, one field investigator and 5 (five) other employees have been appointed on contractual basis. It is also stated that in 10 (ten) villages defluoridization units have been installed and potable water supply is started. Further RO units to 20 villages have been made available for safe drinking water supply. It is further stated that out of 383

villages, 257 villages have been provided with safe water supply from alternate drinking water sources while the programme for alternate water supply schemes for 67 villages out of remaining 146, is proposed in this year. However, the affidavit is silent on plans of remaining 79 villages for which there is no proposal. The Respondents further submit that they are taking necessary action under the Maharashtra Groundwater Act, 1993 to ensure that the source of public water supply is adequately protected.

8. Respondent No.2 District Collector, Chandrapur filed an affidavit on 29th January 2015 and submits that total 11,003 water samples were analysed of which 548 samples from 240 villages were found to be having fluoride contents above the standard. It is stated that in order to control the problem at these 240 villages, Regional Water Supply Scheme have been implemented in 197 villages and out of remaining 43 (forty three) fluoride affected villages, 31 (thirty one) villages are included in action plan of 2014-15 and 12 (twelve) villages are included in action plan of 2015-16. Further, defluoridation units have been installed in 43 villages.

9. Respondent No.3 i.e. District Collector, Beed filed an Affidavit on 30th July 2014 and submitted a statement of the groundwater samples vide Communication dated 27th July 2014, which indicates that total 104 (one hundred and four) ground water sources are found to be containing more than 1

mg/lt of fluorides, more significantly, many of the samples indicate fluoride concentration even above 5 mg/lt.

10. Respondent No.4-Collector, Yavatmal filed an affidavit on 16th October 2014 and submitted that 100 per cent sampling of the identified potable water sources has been completed. It is submitted that total 13511 water samples from various sources have been analysed of which 633 sources and 454 villages were found to be having fluoride contents, more than permissible limit. It is stated that these villages have access to potable water from the other safe sources available in the villages. Necessary restrictions have been imposed for use of water from such identified sources having excessive fluoride and the local villages have been informed about such findings. It is also stated that there are 377 cases of dental fluorosis and 82 cases of skeletal were observed in the district.

11. Respondent No.5-District Collector, Latur filed an affidavit through the Chief Executive Officer, Zilla Parishad, Latur and resisted the Application. The Respondent submits that the District Health Laboratory has examined total 3358 water sources of which 17 (seventeen) sources in 16 villages have been found containing fluoride more than permissible limits. The District Administration has prevented the people from drinking such contaminated water and has provided safe and sufficient alternative source. It is further stated that National Fluorosis Prevention and Control Programme is

being implemented in the District and in initial surveys, total 40 suspected skeletal fluorosis patients have been found but they have not faced with any skeletal disability. The Respondent further submits that the District Administration is also geared up for future interventions and has appointed a qualified district level district advisor under the said programme and there is a plan to give free or subsidized treatment under the programme. However, there is no provision to give monetary compensation. It is also submitted that under the programme, a surveillance of patients of fluorosis has been carried out in 16 (sixteen) villages in which 90 (ninety) patients of dental fluorosis, 40 suspected patients of skeletal fluorosis and 8 patients of non-skeletal fluorosis have been found. However, there is no any death occurred due to fluorosis. It is further submitted that under the said programme, health and urine examination at school level is also conducted and out of 1590 students, 473 students from 16 (sixteen) villages have been found suffering from dental fluorosis. Necessary treatment and guidance has been given to them. The Respondent, therefore, submits that they are taking all the efforts to identify the ill effects of the limited fluoride problems in some part of the districts and are taking necessary steps to provide the examination and treatment of the effected citizens, under the specific programme of the State. The Respondent, therefore, resisted the Application.

12. Respondent No.6-Collector, Washim also filed an affidavit on 6th August 2014 and stated that out of 2963 drinking water sources, 1860 samples from the identified sources were analysed and it is observed that 31 (thirty one) samples from 5 (five) villages have fluoride contents above permissible limits. Further, in 2013-14, another water quality chemical campaign was organized wherein out of 1476 water samples, 14 (fourteen) water samples were found with fluorides contents above permissible limits and said 14 (fourteen) sources have been closed for drinking water purpose. It is also submitted that necessary health inspection and investigation are being carried out in the identified areas.

13. Respondent No.7-District Collector, Parbhani filed an affidavit on 28th January 2015 and stated that out of 4237 water samples, 130 water samples from 105 villages were found to be having fluoride concentration more than the permissible limits. Further, 52 patients of dental fluorosis were identified and are being clinically managed.

14. Respondent No.8-District Collector, Hingoli filed an affidavit on 28th January 2015 and it is submitted that excess fluorides contents were reported in 148 villages of the District, of which water supply from alternate safe drinking water sources is provided to 128 villagtes. Regional Water Supply scheme is being implemented for the 7 (seven) villages and scheme under National Rural Drinking Water Programme is

being implemented for remaining 13 (thirteen) villages. It is also stated that about 712 suspects of dental fluorosis have been identified and are being treated.

15. Respondent No.10-Collector Jalgaon, filed an affidavit on 16th September 2014 and it is submitted that total 3336 samples were analysed, of which 602 sources from 445 villages are affected with higher fluoride level. Further, the Zilla Parishad, Jalgaon found about 120 water sources having higher fluoride level and the subsequent health survey could identify 148 suspected cases of the dental fluorides and 35 (thirty five) cases of skeletal (fluorosis). It is submitted that necessary school level surveys have been carried out. However, in the absence of dentists/orthopaedic Doctor, there are certain hurdles which have been addressed by local arrangements. It is also submitted that as per Maharashtra Groundwater Act, the permission for digging wells more than 60 (sixty)m deep is not allowed.

16. Respondent No.11 i.e. Collector, Nagpur filed an affidavit on 28th August 2014 and submits that the stake-holders in fluoride affected villages of Nagpur are mostly depending upon public water supply scheme. Considering the seriousness of the fluoride contamination, various campaign and awareness programme are conducted under the fluorosis control programme managed by the authorities.

17. Respondent No.12-Collector Bhandara filed an affidavit on 2nd September 2014 and stated that more than

5600 water samples have been analysed of which 80 (eighty) samples from 53 (fifty three) villages have fluoride contents above the permissible limit. It is further submitted that all these 53 (fifty three) villages have access to safe potable water from other sources available in the village. Further, there are about 100 (one hundred) cases of dental fluorosis reported in seven (7) villages which are now provided with the alternative drinking water source.

18. Respondent No.13 i.e. Department of Health, Government of Maharashtra filed an affidavit dated 11th April 2014, and resisted the Application stating that no case has been made out against the department. It is stated that as per the guidelines given by the Central Government, survey was carried out in September-October 2013 in Jalna, Jalgaon, Parbhani, Hingoli, Nagpur and Bhandara. The abstracts of the survey report is submitted as Annexure 'A' which is reproduced below :

Annexure- "A"

Survey report of Latur, Beed, Chandrapur, Washim, Yavatmal & Nanded districts under National Program for Prevention & Control of Fluorosis up to October 2013.

Sr. No.	District	Patient examined	Patient with Dental Fluorosis	Patient with Skeletal Fluorosis
1.	Latur	386	95	40
2.	Beed	367	342	14
3.	Chandrapur	1436	600	836
4.	Washim	120	0	02
5.	Yavatmal	1090	1084	06

6.	Nanded	4099	3710	389
As per the Guidelines given by Central Government survey carried out during the month September & October 2013 in One village of six following districts				
1.	Jalan	16	16	0
2.	Jalgaon	85	0	0
3.	Parbhani	46	41	0
4.	Hingoli	671	258	29
5.	Nagpur	410	24	13
6.	Bhandara	55	16	4

19. The Department has also enclosed the Chemical Analysis report of the water samples taken from drinking water sources under the chemical campaign at public health laboratory in 31 (thirty one) districts of the State and it is submitted that out of 1,58,633 samples taken, 7516 samples contain more than 1.5 mg/lt of fluorides. Department also states that the Indian standards for drinking water specification IS :10500 : 2012 stipulates acceptable limit for fluorides contents in the water as 1 mg/lt and in absence of alternate source, the permissible limit is 1.5 mg/lt. They further submit that the department in responsible for policy decision on providing preventive and curative services for the illness and not for the alleged issues raised by the Applicants.

20. Considering the issues raised by the Applicants, submissions of the various Respondents placed on record, and arguments of learned Advocates for the parties, we are of

the opinion that following issues can be culled out for effective adjudication of the present matter :

1. Whether the increased level of fluoride in some parts of the State of Maharashtra can be termed as a substantial question related to environment in terms of the provision of Section 14(1) of the National Green Tribunal Act, 2010 ?

2. Whether the alleged human intervention in the form of over-exploitation of the ground water can be termed as environmental degradation and deterioration and therefore, attract the provisions of Section 14 and 15 of the National Green Tribunal Act ?

3. Whether the problem of excessive fluoride in the ground water is aggravating in the State and whether necessary steps for control of this problem have been adequately framed and being implemented by the State ?

4. Whether the affected people are entitled to get necessary compensation or otherwise under Section 15 of the National Green Tribunal Act, in terms of the fluorosis problem ?

5. Whether the Tribunal is required to give any further directions in the matter to meet the ends of justice ?

Issue No.1 :

21. Before dwelling with the issues framed above, it would be pertinent to understand the conspectus of the present controversy by presenting the legal frame work as available for the groundwater, its pollution and degradation. The Water (Prevention and Control of Pollution) Act, 1974 is

the special Act which has been promulgated to provide a comprehensive legal framework for prevention, abatement and control of pollution of water bodies and maintaining or restoring the wholesomeness of such water bodies. Though the word 'wholesomeness' has not been defined in the legislation, it has been aptly used in the statement of objectives and reasons of this legislation. The Water (Prevention and Control of Pollution) Act, 1974 defines a term "pollution" and "stream" as under :

> 2(e) : "**pollution**" means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquod, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms;
>
> 2(f) : "**stream**" includes—
>
> (i) River;
> (ii) Watercourse (whether flowing or for the time being dry;
> (iii) Inland water (whether natural or artificial);
> (iv) Subterranean waters;
> (v) Sea or tidal waters to such extent or, as the case may be, to such point as the State Government may, by notification in the Official Gazette, specify in this behalf;

22. It is evident from these definitions that the term "pollution" has a wider connotation and has embedded the

cause and effect relationship of such pollution. The word "alteration" used in definition of the pollution for projecting the alteration of the physical, chemical or biological properties of Water is not tied or restricted by any such cause of alteration, whether it is a natural or manmade. Obviously, the term pollution in the context of alteration of physical, chemical or biological properties of water, whether it is due to natural or anthropogenic activities, needs to be considered and termed as "pollution", if such alteration is likely to have adverse effect as prescribed in the definition. A careful reading of such definition will eviscerate us by the effective interpretation of the term "pollution". There cannot be any dispute on the definition of the stream as it categorically includes the subterranean Waters.

23. Now coming to the question whether the alteration/change in the fluoride concentration can be termed as contamination of the groundwater needs to be examined. The Schedule-6 of the Environment (Protection) Rules prescribes general standards for discharge of environmental pollutants which incorporate the fluoride parameter. It is also pertinent to refer to the definition of the environment, environmental pollutant and environmental pollution as provided under the Environmental (Protection) Act, 1986. The definitions as provided in Section 2 of the Environmental (Protection) Act, are reproduced for ready reference :

(a) "environment" includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings other living creatures, plants, micro-organism and property;

(b) "environmental pollutant" means any solid, liquid or gaseous substance present in such concentration as may be, or tend to be, injurious to environment;

(c) "environmental pollution" means the presence in the environment of any environmental pollutant;

24. Considering the inclusion of fluoride parameter in the general standards, it is manifest that the fluoride has been identified as environmental pollutant as far as liquid effluents are considered and specific standards have been framed for that purpose.

25. Now, coming to the other part of the definition i.e. effect, it is an admitted fact that the increase or even decrease in fluoride contents in the groundwater have been identified as serious health concern. In fact, the drinking water specification as per Indian standard IS:10500 stipulate fluoride concentration of 1 mg/lt as desired standard and in absence of alternate source, the permissible standard is fixed at 1.5 mg/lt. It is also observed from the documents placed on record that the Central and State Government are already seized of the problem of high fluoride concentration in the groundwater and they have, correctly so, initiated a programme of National Fluorosis, prevention and control programme. In view of the above discussion and the conjoint

reading of the legal provisions, particularly, the Water (Prevention and Control of Pollution) Act, 1974 and Environmental (Protection) Act, 1986, we hold that the alteration in the fluoride level which is likely to pose adverse effect on the human health, is a substantial question related to environment in terms of Section 14(1) of the National Green Tribunal Act, 2010. Issue No.1 is accordingly answered in Affirmative.

Issue No.2 :

26. Coming to the second issue related to alleged human intervention in the form of over-exploitation of the groundwater, whether it can be termed as environmental degradation, it would be necessary to refer the definition of environment which is produced in above paras. The definition includes the inter-relation between the biotic and a abiotic environment and is capacious enough to incorporate water, land and air environment and their inter-relationship including flora and fauna. Government of India has constituted Central Groundwater Authority under Section 3(3) of the Environmental (Protection) Act, 1986 to regulate and control the development and management of groundwater resources in the country. Central Ground Water Authority (CGWA) has submitted that, it is empowered to regulate, control the management and development of groundwater in the country while issuing necessary regulatory directions for such purpose. The authority has been delegated powers

under Section 5 of the Environmental (Protection) Act, 1986 for issuing directions and taking such measures in respect of all matters referred in sub-section 2 of Section 3 of the said Act and also penal provisions contained in section 15 to 21 of the said Act.

27. The Hon'ble High Court of Kerala in "*Perumatty Gram Panchayat Vrs. State of Kerala (Kolkata Groundwater Exploitation case) reported in 2004(1) KLT 731, W.P. No. 34292 of 2003*" has recorded that groundwater belongs to the public. The State and its instrumentalities should act as trustees of this great wealth. The State has got a duty to protect groundwater against excessive exploitation and inaction of the State in this regard will tantamount to infringement of the right to the life of the people guaranteed under Article 21 of the Constitution of India. The Court has also recorded that the groundwater is an important part of the ecological cycle and if there is artificial interference with the groundwater by excessive extraction, it is sure to create ecological imbalance. The Court further put certain restrictions on the extraction of the groundwater on various grounds.

28. The Indian Environmental jurisprudence has already evolved the public trust doctrine of various environmental resources through numerous judgments of the Hon'ble Supreme Court. The environmental resources in the form of water, air and soil are finite and it is necessary that these resources are judiciously used for the public use and these

resources shall not be frittered away and exhausted by any one generation. The Apex Court has held that the doctrine of public trust is a part of Indian Law as reported in the case of "*M.C. Mehta Vrs. Kamalnath, 1997(1), SCC 388*". The Hon'ble Apex Court has also taken a precautionary approach in the case of "Sand Mining" in "*Deepak Kumar Vrs. State of Haryana and Ors. In 2000(4) SCC 629*" wherein even small mining leases less than 5 Ha are required to be regulated through Environmental Impact Assessment and appraisal process. In view of this established legal provision, the issue No.2 is answered in affirmative by holding that the over exploitation of the groundwater can be termed as environmental degradation and therefore, attracts the provision of Section 14 and 15 of the National Green Tribunal Act.

Issue Nos.3, 4 and 5 :

29. Fluoride is an important constituent in the drinking water which is good for teeth enamel and helps to prevent dental caries. It is harmful when it exceeds the permissible limits and may lead to fluoride poisoning or fluorosis. Fluoride contamination of groundwater is a growing problem in many parts of the world especially in large area of India, particularly in Rural area. It is well documented that fluoride contents in the groundwater is mainly due to natural contamination. The major sources of fluoride in groundwater are due to fluoride bearing minerals such as fluorospar,

cryolite, fluoropatite and hydroxyl-apatite in rocks. Some anthropogenic activities, such as phosphate fertilizer, pesticides, sewage and sludge, industrial effluent and depletion of groundwater have also been indicated as possible causes for increasing fluoride concentration in groundwater. In the present Application, the technical authorities like GSDA and CGWP have also referred to the sources of fluoride which is mainly attributed to igneous and metamorphic volcanic rocks. However, the process of dissolution of fluorides, from such geological formation and its relation and inter-dependency, on the withdrawal of the groundwater and depletion of the groundwater table, has not been defined in the submission.

30. Respondent Nos.1 to 12 i.e. District Collectors of twelve (12) districts, GSDA and Respondent No.13 i.e. Department of Health have submitted details of the water sampling carried out for various drinking water sources which has been elaborately presented in their submissions referred in above paragraphs. They have also presented the data of the patients examined and those suffering from dental or skeletal fluorosis. It is also submitted that a National Programme for prevention and control of fluorosis is undertaken in the State in some Districts. The data submitted is of limited time frame only, but obviously the data presented so far, shows a significant percentage of water samples which are having higher fluoride concentrations,

even more than the permissible limits i.e. 1.5 mg. though indusputably the acceptable limit is 1 mg/lt. The authorities have also presented the actions taken by them to identify the alternate sources in lieu of such contaminated sources and it is observed that except in few cases, the authorities were able to address this health problem by relying on alternative sources of the groundwater. But record of the patients who are suffering from fluorosis goes to show that a significant number of people and more particularly the school going children are susceptible to such health issue arising out of excessive fluoride contents in the groundwater. The authorities, no doubt, have responded to this problem with all required seriousness and in many Districts, we could see that the campaigns of water testing, screening of patients and school children have aggressively been adopted though the story does not end here. The problem of excessive fluoride needs to be addressed in a holistic manner on long term basis, by mitigating the excessive fluoride contents and for that purpose, it is necessary to consider the responsible conditions and the parameters for its dissolution and enrichment, in time and space, at the local aquifer level. No doubt, such a study and approach will require a multi-disciplinary approach and better understanding of the geochemistry of the aquifer. The fluoride contents from the aquifer shows a seasonal variation which indicates that the groundwater level has nexus with the fluoride contents.

Some of the literature available indicates that the fluoride contents in a controlled water shed shows higher values after the monsoon recharge and lower value before the monsoon. This may be due to excessive migration, either through leaching or other chemical processes of the fluorides from such rocks. This needs to be properly examined and studied for evolving long term solution of this problem.

31. Considering the above facts, though we can see large scale efforts undertaken by authorities to deal with the problem of fluoride contents in ground water, either by providing alternate source or by providing RO plants for defluoridation, we would expect the authorities to be more pro-active in medicinal screening of school children and other patients and also providing safe sources for remaining affected sources of water. However, in view of the efforts taken by Authorities, we are not inclined to order any individual compensation, but expect the Authorities to provide medical facilities to the fluorosis affected persons.

32. Now coming back to the excessive withdrawal of the groundwater and its regulation, it is already on record that the CGWA has been established as per the directions of the Hon'ble Supreme Court in "*M.C. Mehta Vrs. Union of India and Anr., 1997(11), SCC 312*" dated 10th December 1996, wherein Hon'ble Apex Court has dealt on the urgent need for regulating indiscriminate boring and withdrawal underground

water in the country and the relevant paragraph of the order is as under :

> *"The main object for the constitution of the Board as an Authority is the urgent need for regulating the indiscriminate boring and withdrawal of underground water in the country. We have no doubt that the Authority so constituted shall apply its mind to this urgent aspect of the matter and shall issue necessary regulatory directions with a view to preserve and protect the underground water. This aspect may be taken up by the Authority on an urgent basis".*

33. It is, therefore manifest that the CGWA was expected to regulate the indiscriminate boring and withdrawal of the groundwater in the country with a view to preserve and protect the underground water and the ecosystem. The CGWA has placed on record guidelines/criteria for evaluation of proposals/requests for groundwater abstraction. The prime objective of the guidelines is to focus on a specific part of groundwater management viz. ensuring sustainability of groundwater both in terms of quantity and quality, amongst others. The relevant definitions provided in these guidelines are reproduced for ready reference :

Definitions/Explanation of Technical Terms

1. ***Notified Area****: Areas notified by Central Ground Water Authority for the purpose of Regulation of Ground Water development through Public Notices.*
2. ***Non-notified area****: Areas other than Notified areas for ground water regulation.*
3. ***Semi-critical area****: Area categorized as SEMI-CRITICAL from the ground water resources point of view, based on the ground*

water resources estimation 2009 or the latest estimation carried out by CGWB.

4. ***Critical area****: Area categorized as CRITICAL from the ground water resources point of view, based on the ground water resources estimation 2009 or the latest estimation carried out by CGWB.*

5. ***Over-exploited area*** *: Area categorized as OVER-EXPLOITED from the ground water resources point of view, based on the ground water resources estimation 2009 or the latest estimation carried out by CGWB.*

As per para B-VI of the guidelines, Industries using water as raw material/water intensive industries like packaged drinking water, mineral water industries, distilleries, breweries, soft drink manufacturing industries, textiles, paper & pulp, etc shall not be granted NOC for groundwater withdrawal from Over exploited areas. In Safe, SemiCritical & Critical areas NOC for ground water withdrawal is mandatory for these industries as per Section B-1. However, ground water withdrawal will be limited as follows:

Safe	*Withdrawal limited to 200% of ground water recharge*
Semi-critical	*Withdrawal limited to 100% of ground water recharge*
Critical	*Withdrawal limited to 50% of ground water recharge*
Over-exploited	*No permission for industries under this category*

34. It is observed from the guidelines that in the notified area, permission to abstract ground-water through any energised means is not to be accorded for any purpose other than drinking water. In non notified area, the ground water withdrawal is to be considered for industries/infrastructure projects which are either new or under expansion as per the criteria given in the guidelines. The industries drawing more than 100 m3/day of ground water are also required to obtain

permission of the CGWA. The CGWA has submitted that, it has not notified any of the twelve (12) Districts in dispute under these guidelines. They have also submitted that about total 20 permissions/NOCs have been accorded for groundwater withdrawal for industrial/infrastructure/mining projects in these twelve (12) Districts. The industries include packaging of drinking water, cement plant, coal mining, steel industries amongst others. A mere number of such NOCs i.e. 20 for variety of industries in these twelve (12) Districts would clearly indicate that many more industries are in operation in these twelve (12) Districts without the NOC of CGWA. CGWA has not placed on record any such statistics of industries which require their NOC or at least needs to be registered with them. There is also no record or any data which is presented by CGWA about the total amount of groundwater which is withdrawn and studies of groundwater level. This is particularly important in view of the fact of condition D(a) of the said guidelines wherein it is stipulated that sale and supply of raw/unprocessed/untreated groundwater by unauthorised agencies for commercial use is not permitted. It is, therefore, manifest that the drinking water packaging industries using groundwater and other such industries using groundwater seems to be not following these guidelines. Obviously, the conditions which the CGWA might have incorporated for artificial recharge for replenishing the groundwater are being simply a go by. It is also noted that

the Pollution Control Board has also not verifed these aspects of requirement of NOC from CGWA and also, adequate measures of artificial recharge and replenishment of groundwater by the industries which are withdrawing significant quantities of ground water. It can be concluded from the foregoing discussions that the uncontrolled and unbridled withdrawal of the groundwater for the commercial purposes is one activity which can be effectively regulated by the agencies like District Collector, GSDA, MPCB and CGWA by proper implementation of existing regulations in close co-ordination among themselves. What is observed here is lack of co-ordinated approach and working of these departments in isolated silos which is resulting in unabated withdrawal of ground water for commercial purposes.

35. Hon'ble Principle bench of NGT in "*Krishan Kant Singh 2 Vs. M/S. Hindustan Cocacola Beverages Pvt. Ltd., Mehdiganj, Rajatalab, Varanasi*" And "*M.C. Mehta Vs. Union Of India*" and Various Connected Matters, on 23rd April while disposing bunch of Applications have directed that:

> *We direct CGWA that it should apply its mind to all aspects particularly to the fact that in all areas groundwater is depleting at a fast rate. If permission is granted, it shall impose condition for ensuring recharging groundwater and providing system which would help in that direction. It will be mandatory for CGWA to direct the applicant to submit the groundwater analysis report along with the application.*

The Bench in "*Digvijay Singh Vs. State of Rajasthan & Ors". And "Digvijay Singh Vs. Bhanu Prakash & Ors"*, in

Original Application No. 34(THC)/2014 (CWP No. 2844 of 2011) And Original Application No. 37(THC)/2014 (CWP No. 581 of 2013), have directed that;

> *In view of over exploited condition of the ground water table, it is just and necessary that all these units approach the CGWA for registration as well as for their 7 NoC through the RPCB. This will facilitate the collection of realistic data regarding ground water exploitation as well as the authorities to take informed decision in matter of extraction of ground water and fixation of water cess on actual consumption basis. We, therefore, direct all industrial units which are the members of the CETPs to approach CGWA through RPCB for registration of their bore-wells and for grant of NoC in accordance with law.*

In case of *Krishan Kant Singh Vs. M/s Deoria Paper Ltd., Hata Road Narainpur Deoria And other* connected matters, the Principla Bench on 15th April 2015 further directed that:

> *After hearing the Learned Counsel appearing for parties we direct Central Ground Water Authority that it shall be obligatory upon it to ensure that any person operating tubewell or any means to extract groundwater should obtain its permission and should operate the same subject to law in force, even if such unit is existing unit or the unit is still to be established.*

36. The other part is related to use of groundwater for drinking and agricultural purpose. As already held by the Hon'ble Principal Bench in "*Safal Bharat Guru Parampara Vrs. State of Punjab and Ors. in O.A. 9/2014*", use of water for agricultural and the policies thereto need not be considered by the Tribunal at this stage, in view of the non-availability of the data and also the fact that use of ground water for

drinking and agricultural is not prohibited by the guidelines. However, we are not entering into these aspects with a word of caution to the authorities that the uncontrolled and unbridled exploitation of groundwater even for such purposes, without proper and adequate measures for groundwater replenishment can further cause environmental degradation. We hope that the authorities will dwell on these issues for developing suitable road map.

37. It is also to be noted that there are various anthrogenic sources of natural water particularly the industries where the hydro-fluoric (HF) acid is used, such as semi-conductor industries, electronic industries, steel manufacturing, fertilizer etc. Environment (Protection) Rules already stipulates the standard for fluorides in the treated waste water. However, MPCB has not placed on record details of such industries where fluoride contents are observed in the treated waste water. We expect MPCB to carry out a survey/study to identify such industries where fluoride contents are significant and if necessary, may consider making this discharge standard more stringent by following due process of Law.

38. In view of above, the Application is partly allowed with following directions :

1. The CGWB and MPCB shall jointly prepare a list of industries and infrastructure projects which require NOC/permission of CGWA within a period of four (4)

weeks from today and shall publish such list on their websites directing the industries to apply for necessary permission from the CGWA within next four (4) weeks. These Applications shall be considered and disposed on merits by the CGWA within four (4) weeks thereafter.

2. In case, such identified industries do not apply for the permission/NOC, the MPCB and CGWA shall issue necessary directions under provisions of Environmental Laws for closure of the industry by following due process of Law.

3. The Respondent Nos.1 to 12 and GSDA shall regularly monitor the water quality at all the drinking water sources and District-wise information which shall be published on yearly basis.

4. The District Collectors shall ensure that all the remaining in-use groundwater sources having higher fluoride contents shall be discontinued either by identifying alternate source or by provision of Regional Water supply schemes within period of six (6) months. The compliance report shall be submitted to the Tribunal on the quarterly basis.

5. The State Government, through the Department of Health and the Respondent Nos.1 to 12 are directed to provide necessary medical facilities to the identified patients who are suffering from fluorosis, free of costs.

6. The MPCB shall carry out survey to identify the industries discharging higher concentration of fluorides in the treated waste water and take suitable action, as per the Law within next four (4) weeks.

7. State Government may take policy decision to disallow crops like paddy, sugarcane etc. in the areas where the groundwater level has gone deep

and fluoride contents are 0.5 mg./lt. in excess of limits prescribed to avoid fluoride to children in early age, on precautionary basis and give directions to comply guidelines in this behalf to the Authorities within six (6) months after sampling study carried out and after opinion of water Resource Department.

The Application is disposed of. No costs.

.....,JM
(Justice V. R. Kingaonkar)

....., EM
(Dr. Ajay. A. Deshpande)

Date : January 11th, 2016.

ajp