

**BEFORE THE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH, NEW DELHI  
ORIGINAL APPLICATION NO 676 OF 2023**

**IN THE MATTER OF**

**In re: News item appearing in The Times of India dated 12.10.2023 titled "Agricultural Runoff causing groundwater pollution in Punjab, making Drinking Water unsafe, Reveals Study"**

**Index**

<b>S. No.</b>	<b>Particulars</b>	<b>Page No.</b>
1.	<b>Report</b> in compliance of Hon'ble NGT order dated 03.11.2023 in OA No. 676/2023, In re: News item appearing in The Times of India dated 12.10.2023 titled "Agricultural Runoff causing groundwater pollution in Punjab, making Drinking Water unsafe, Reveals Study"	
2.	<b>Annexure-I:</b> A copy of list of ground water monitoring locations in Punjab under National Water Quality Monitoring Programme (NWMP).	
3.	<b>Annexure-II:</b> Ground water quality in Punjab with respect to Nitrate during the years 2019 & 2023.	
4.	<b>Annexure-III:</b> A copy of the Hon'ble NGT order dated 03.11.2023.	



**(P.K. Mishra)**

Scientist F

Central Pollution Control Board

Delhi-110032

Dated: 17.01.2024

Place: Delhi

**STATUS REPORT ON “GROUND WATER QUALITY IN PUNJAB”  
FILED BY CPCB IN COMPLIANCE TO HON’BLE NGT ORDER  
DATED 03.11.2023 IN O.A. No. 676 of 2023**

**1.0 BACKGROUND**

The Hon’ble NGT in suo-moto exercise of power on the basis of the news item published on 12.10.2023 in the Times of India, titled “Agricultural Runoff causing groundwater pollution in Punjab, making Drinking Water unsafe, Reveals Study” directed Punjab Pollution Control Board vide order dated 03.11.2023 to file report in response to the facts disclosed in the news item report, inter-alia, including the issue of heavy metals, radioactive substance, pesticides and chemicals pollutants found in the ground water of the concerned area in sample testing.

Para 6 of the order states –

*Having regard to the facts disclose in the news item, we deem it proper to implead following parties as Respondents:-*

- (i) Central Pollution Control Board through its Member Secretary;*
- (ii) Punjab Pollution Control Board through its Member Secretary;*
- (iii) Indian Institute of Technology (IIT) Mandi; though its Director;*
- (iv) Department of Water Supply and Sanitation, State of Punjab through its Administrative Head*
- (v) Department of Agriculture and Farmers Welfare, State of Punjab though its Administrative Head;*

Accordingly, a brief status on ground water quality of Punjab monitored under National Water Quality Monitoring Programme (NWMP) is compiled for submission before Hon’ble NGT.

CPCB under National Water Quality Monitoring Programme (NWMP) monitors water quality of aquatic resources in association with respective State Pollution Control Board (SPCB)/ Pollution Control Committee (PCC) in

the country. Presently the monitoring network comprises 4703 locations in the country including 1233 locations on ground water.

CPCB under NWMP monitors ground water quality at 46 locations in association with Punjab Pollution Control Board (PPCB).

## **2.0 COMPLIANCE TO HON'BLE NGT ORDER DATED 12.10.2023**

In compliance to the said order dated 12.10.2023 of the Hon'ble NGT, brief status on ground water quality monitored in Punjab at 43 out of 46 locations with respect to physico-chemical, heavy metals and pesticides under NWMP programme is compiled. Radio-active compounds are not monitored under National Water Quality Monitoring Programme (NWMP).

## **3.0 STATUS OF GROUND WATER QUALITY MONITORED IN PUNJAB**

CPCB under National Water Quality Monitoring Programme (NWMP) monitors ground water quality at 46 locations in association with Punjab Pollution Control Board (PPCB) including 01 locations in Sangrur, 02 locations each in Amritsar, Faridkot, Gurdaspur, Jalandhar, Kapurthala, Mohali & Nangal; 03 locations in Patiala; 04 locations each in Bhatinda, Fatehgarh Sahib & Roonagar and 16 locations in Ludhiana, details provided in **Table - 1 (Annexure - I)**.

Ground water quality monitored in Punjab has been carried out at 43 out of 46 locations during the years 2019 - 2023. The common chemical contaminants viz. Nitrate, Fluoride and Total Dissolved Solids (TDS) are detailed in **Table - 2 - 4 (Annexure - II)**.

Assessment of ground water quality in Punjab for the years 2019 - 2023 for heavy metals monitored at 43 locations is provided in **Table - 5-7 (Annexure - II)**. Heavy metals viz. Arsenic, Cadmium, Copper, Lead, Chromium Total,

Nickel, Zinc, Mercury and Iron w.r.t Acceptable Limit prescribed by BIS Drinking Water Specifications IS 10500:2012

Assessment of 12 Pesticides viz. Alpha HCH; Beta HCH; ortho,para - DDT; Gamma HCH (Lindane); para,para - DDT; Beta Endosulphan; Dieldrin; Aldrin; Chloropyriphos; Anilophos; Malathian and Alpha Endosulphan monitored at 43 locations indicate that all these pesticides were Below Detection Limit (BDL) in the State during 2019 - 2023.

#### 4.0 MAJOR FINDINGS

The water quality monitored at 43 out of 46 locations in the State during the years 2019 - 2023 by CPCB in association with Punjab Pollution Control Board (PPCB) under National Water Quality Monitoring Programme (NWMP) reveals the following:

- Nitrate concentration in 01 out of 43 monitored locations during the years 2019 & 2020 is exceeding its BIS Drinking Water Standards IS 10500: 2012, acceptable limit of 45.0 mg/ L. However, during 2022 and 2023, nitrate concentration is found complying.
- Fluoride concentration has been observed exceeding in the range of 9.5 - 18.6% during the years 2019 (05 out of 43 locations), 2020 (04 out of 42 locations) & 2022 (08 out of 43 locations) against BIS Drinking Water Standards IS 10500: 2012, acceptable limit of 1.0 mg/ L.
- TDS concentration has been observed exceeding in the range of 53.4 - 70.7% during the years 2019 - 2023 against BIS Drinking Water Standards IS 10500: 2012, acceptable limit of 500.0 mg/ L. Out of monitored locations, 23 locations out of 43 in the year 2019, 29 out of 41 locations in the year 2020, 22 out of 33 locations in the year 2021, 30 out of 43 locations in the year 2022 and 24 out of 40 locations in the year 2023 were found non - complying.
- Monitored Heavy metals viz. Arsenic, Cadmium, Copper, Lead, Chromium Total, Nickel, Zinc, Mercury are found complying in all during entire period of monitoring, with the Acceptable Limit prescribed by BIS Drinking Water Specifications IS 10500:2012.
- Iron concentration has been observed exceeding in the range of 11.6 - 30.3% during the years 2019 - 2023 against BIS Drinking Water Specifications IS 10500: 2012, acceptable limit of 0.3 mg/ L.
- 12 Pesticides monitored at 43 locations indicate that all these pesticides were Below Detection Limit (BDL) in the State.

Table -1: list of ground water monitoring locations in Punjab under NWMP

S. No.	Station Code	Name of Monitoring Station	District Name	Latitude	Longitude
1.	1898	Petrol Pump Opp. Hero Cycle, Ludhiana	Ludhiana	30.90008	75.85728
2.	1899	Bhagwan Singh, H.No.907, Dasmesh Nagar, Gali No. 6, Ludhiana	Ludhiana	30.88439	75.85441
3.	1900	Gurchaaran Singh Haibowal Dairy Complex, Ludhiana	Ludhiana	30.89785	75.85542
4.	1901	Dusshera Ground Industrial Estate, Ludhiana	Ludhiana	30.89603	75.87373
5.	1902	Shukla Tea Stal Point, Ludhiana	Ludhiana	30.89582	75.85974
6.	1903	Punjab Agricultural University, Ludhiana	Ludhiana	30.90414	75.8168
7.	4134	Tube Well At RSSB, Tibba Road, Ludhiana Industrial Area	Ludhiana	30.92021	75.88355
8.	4135	MSW Dumping Site, Jamalpur	Ludhiana	31.5275	75.61019
9.	4136	STP Jamalpur	Ludhiana	31.52997	75.61233
10.	4139	Handpump At Park Adjoining To National Industries, E-128, Ph-Iv, Focal Point Ludhiana	Ludhiana	30.89411	75.9042
11.	4140	Handpump In Sahota Baghbani Farm, Vill Harian, Machiwara	Ludhiana	30.91354	76.19124
12.	4153	Dashmesh Nagar, Gali No 12, Ludhiana	Ludhiana	30.88371	75.85672
13.	4154	TSSM Sr Sec School Shimlapuri, Ludhiana	Ludhiana	30.86502	75.866
14.	4155	Dairy Complex, Tajpur Road, Ludhiana Opp Satish Dairy Mear Amrit Dharam Kanta	Ludhiana	30.91735	75.88644
15.	4156	Handpump In Area On Sua Road Near Dhandari Kalan, Ludhiana	Ludhiana	30.86047	75.91114
16.	4157	Handpump Shallow Tubewell In The Area Of Janta Nagar, Ludhiana	Ludhiana	30.87962	75.86337
17.	2916	Near Landfill Site, Amritsar, Punjab	Amritsar	31.63398	74.87226
18.	2917	Near Harmandir Saheb, Amritsar,	Amritsar	31.61998	74.87649
19.	2918	Dera Bassi, Punjab	Mohali	30.5872	76.8428
20.	2919	Dera Bassi, Punjab	Mohali	30.5882	76.84608
21.	2920	Hamira Village, Punjab	Kapurthala	31.45597	75.4337
22.	2921	Hamira Village, Punjab	Kapurthala	31.4491	75.44099
23.	2922	Leather Complex, Jalandhar, Punjab	Jalandhar	31.33048	75.51509
24.	2923	Leather Complex, Jalandhar, Punjab	Jalandhar	31.33044	75.52611
25.	2924	Mandi Gobindgarh, Punjab	Fatehgarh Sahib	30.66143	76.27463
26.	2925	Mandi Gobindgarh, Punjab	Fatehgarh Sahib	30.66093	76.31211
27.	2926	Nangal, Punjab	Nangal	31.37986	76.36341
28.	2927	Nangal, Punjab	Nangal	31.37727	76.36993

S. No.	Station Code	Name of Monitoring Station	District Name	Latitude	Longitude
29.	2928	Ropar, Punjab	Roopnagar	30.96233	76.52491
30.	2929	Ropar, Punjab	Roopnagar	30.97063	76.51607
31.	2930	Toansa, Punjab	Roopnagar	30.99793	76.46666
32.	2931	Toansa, Punjab	Roopnagar	30.97757	76.51653
33.	4137	Handpump In M/S Deep Steel Ltd, Mughal Majra, Mandi Gobbindgarh	Fatehgarh Sahib	30.71976	76.34716
34.	4138	Handpump, 149 Near Sant Pritam School, Ambey Majra, Mandi Gobindgarh	Fatehgarh Sahib	30.64374	76.31907
35.	4141	Handpump Instrial Growth Centre, Defence Road, Pathankot	Gurdaspur	32.31236	75.64602
36.	4142	Handpump, Vill Dheriwal, Dist Pathankot	Gurdaspur	31.95927	75.32345
37.	4143	Handpump Near Ash Dykes Of Nabha Power Ltd, Vill Nalash, Rajpura	Patiala	30.55762	76.58162
38.	4144	Ground Water Sampling Blocation In Village Main	Patiala	30.33886	76.39297
39.	4145	Sagar Para Drain Meeting With Ghaggar Near Vill Sagar Para, Patran	Patiala	29.95507	76.05501
40.	4146	Near M/S Mahaluxmi Organo Chem, Bhawanigarh	Sangrur	30.26165	76.03172
41.	4147	Near Ash Dykes Of Guru Nanak Thermal Power Plant/ Nfl, Bhatinda	Bathinda	30.20831	74.93784
42.	4148	Village Kanakwal/ Phukokari Ggs Hmel Refinery, Bhatinda	Bathinda	29.92936	74.94773
43.	4149	Ash Dykes Of Thermal Power Plant Lehra Mohabbat, Bhatinda	Bathinda	30.24696	75.16357
44.	4150	100 M D/S Of Vill Rurianwali, Dist Muktsar	Bathinda	30.46727	74.51455
45.	4151	Near Malbors Internationla P Ltd, Vill Mansoorwal, Dist Ferozpur	Faridkot	30.92059	74.96081
46.	4152	S R Spirit Bahmni Wala Road, Jalalabad (West)	Faridkot	30.63035	74.83961

**Table - 2: Ground water quality in Punjab w.r.t - Nitrate during the years 2019 & 2023 (maximum value observed)**

S. No.	Station Code	Name of Monitoring Station	District	Year of monitoring				
				2019	2020	2021	2022	2023
BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)				45.0 mg/L				
1.	1898	Petrol Pump Opp. Hero Cycle,	Ludhiana	25	24.6	-	1.2	0.5
2.	1900	Gurchaaran Singh Haibowal Dairy Complex,	Ludhiana	5.1	4.8	0.4	5.1	0.7
3.	1901	Dusshera Ground Industrial Estate,	Ludhiana	22	16.1	-	2.9	0.8
4.	1902	Shukla Tea Stal Point,	Ludhiana	14	12.8	10.3	1	0.4
5.	1903	Punjab Agricultural University,	Ludhiana	5.8	6.2	BDL	4.7	BDL
6.	4134	Tube Well At Rssb, Tibba Road, Ludhiana Industrial Area	Ludhiana	0.7	1.1	0.4	0.4	BDL
7.	4135	Msw Dumping Site, Jamalpur	Ludhiana	0.8	2.2	0.32	1.13	BDL
8.	4136	Stp Jamalpur	Ludhiana	0.9	4.4	BDL	4.32	BDL
9.	4139	Handpump At Park Adjoining To National Industries, E-128, Ph-Iv, Focal Point Ludhiana	Ludhiana	31	26.4	11	1.9	BDL
10.	4140	Handpump In Sahota Baghbani Farm, Vill Harian, Machiwara	Ludhiana	1.8	8.8	9.2	1.6	0.6
11.	4153	Dashmesh Nagar, Gali No 12, Ludhiana	Ludhiana	21	18.4	BDL	7.41	BDL
12.	4154	Tssm Sr Sec School Shimlapuri, Ludhiana	Ludhiana	24	15.6	1.2	0.9	-
13.	4155	Dairy Complex, Tajpur Road, Ludhiana Opp Satish Dairy Mear Amrit Dharam Kanta	Ludhiana	8	6.9	BDL	4.3	BDL
14.	4156	Handpump In Area On Sua Road Near Dhandari Kalan, Ludhiana	Ludhiana	25	16.7	0.6	1.1	BDL
15.	4157	Handpump Shallow Tubewell In The Area Of Janta Nagar, Ludhiana	Ludhiana	18	12.2	-	1.4	0.9
16.	2916	Near Landfill Site, Amritsar,	Amritsar	1.4	2.2	1.4	2.22	0.5
17.	2917	Near Harmandir Saheb, Amritsar,	Amritsar	8	4.2	0.6	5.39	0.4
18.	2918	Dera Bassi,	Mohali	27	12.8	1.3	2.4	BDL
19.	2919	Dera Bassi,	Mohali	28	18.6	1.2	2.6	BDL
20.	2920	Hamira Village,	Kapurthala	9	8.4	7.2	1.3	BDL
21.	2921	Hamira Village,	Kapurthala	0.9	2.6	1.2	BDL	BDL
22.	2922	Leather Complex, Jalandhar,	Jalandhar	14	-	2.1	4.32	BDL
23.	2923	Leather Complex, Jalandhar,	Jalandhar	0.9	3	1.4	1.8	0.4
24.	2924	Mandi Gobindgarh,	Fatehgarh Sahib	2.4	2.9	0.7	0.8	BDL

S. No.	Station Code	Name of Monitoring Station	District	Year of monitoring				
				2019	2020	2021	2022	2023
BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)			45.0 mg/ L					
25.	2925	Mandi Gobindgarh,	Fatehgarh Sahib	3.6	3.1	0.8	0.9	BDL
26.	2926	Nangal,	Nangal	18	14.8	-	1.32	BDL
27.	2927	Nangal,	Nangal	19	20.1	-	0.99	BDL
28.	2928	Ropar,	Roopnagar	2.2	3.6	BDL	0.7	BDL
29.	2929	Ropar,	Roopnagar	0.9	2.4	BDL	BDL	BDL
30.	2930	Toansa,	Roopnagar	1.2	2.2	3.7	2.2	-
31.	2931	Toansa,	Roopnagar	1	1.8	1.9	2.7	-
32.	4137	Handpump In M/S Deep Steel Ltd, Mughal Majra, Mandi Gobbindgarh	Fatehgarh Sahib	2.8	2.6	0.7	2.31	0.4
33.	4138	Handpump, 149 Near Sant Pritam School, Ambey Majra, Mandi Gobindgarh	Fatehgarh Sahib	2.2	2.8	BDL	0.91	BDL
34.	4141	Handpump Instrial Growth Centre, Defence Road, Pathankot	Gurdaspur	4.8	2.2	1.2	0.5	BDL
35.	4142	Handpump, Vill Dheriwal, Dist Pathankot	Gurdaspur	1.2	3.6	1.4	0.4	BDL
36.	4143	Handpump Near Ash Dykes Of Nabha Power Ltd, Vill Nalash, Rajpura	Patiala	0.6	1.2	2.4	1.9	-
37.	4144	Ground Water Sampling Blocation In Village Main	Patiala	3.4	1.1	1.2	4.32	-
38.	4145	Sagar Para Drain Meeting With Ghaggar Near Vill Sagar Para, Patran	Patiala	0.5	1.1	1.2	0.69	BDL
39.	4147	Near Ash Dykes Of Guru Nanak Thermal Power Plant/ Nfl, Bhatinda	Bathinda	10	12.4	-	7.82	BDL
40.	4148	Village Kanakwal/ Phukokari Ggs Hmel Refinery, Bhatinda	Bathinda	176	80.6	-	8.9	BDL
41.	4149	Ash Dykes Of Thermal Power Plant Lehra Mohabbat, Bhatinda	Bathinda	5.6	6.9	-	2.01	0.6
42.	4150	100 M D/S Of Vill Rurianwali, Dist Muktsar	Bathinda	4.1	4.8	-	3.61	BDL
43.	4151	Near Malbors Internationla P Ltd, Vill Mansoorwal, Dist Ferozpur	Faridkot	1.4	2.1	-	BDL	-
<b>No. of locations exceedance observed</b>				<b>1</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total monitored locations</b>				<b>43</b>	<b>42</b>	<b>33</b>	<b>43</b>	<b>38</b>

**Table - 3: Ground water quality in Punjab w.r.t - Fluoride during the years 2019 & 2023 (maximum value observed)**

S. No.	Station Code	Name of Monitoring Station	District	Year of monitoring				
				2019	2020	2021	2022	2023
BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)				1.0 mg/L				
1.	1898	Petrol Pump Opp. Hero Cycle,	Ludhiana	0.29	0.28	-	0.9	0.3
2.	1900	Gurcharan Singh Haibowal Dairy Complex,	Ludhiana	0.22	0.3	0.4	0.33	0.3
3.	1901	Dusshera Ground Industrial Estate,	Ludhiana	0.38	0.42	-	1.3	0.4
4.	1902	Shukla Tea Stal Point,	Ludhiana	0.2	0.21	BDL	0.8	BDL
5.	1903	Punjab Agricultural University,	Ludhiana	0.38	0.32	0.24	0.29	BDL
6.	4134	Tube Well At Rssb, Tibba Road, Ludhiana Industrial Area	Ludhiana	0.32	0.19	0.4	0.29	BDL
7.	4135	Msw Dumping Site, Jamalpur	Ludhiana	0.26	0.24	0.3	0.64	BDL
8.	4136	Stp Jamalpur	Ludhiana	0.28	0.26	0.5	0.9	BDL
9.	4139	Handpump At Park Adjoining To National Industries, E-128, Ph-Iv, Focal Point Ludhiana	Ludhiana	0.19	0.22	0.24	1.2	0.3
10.	4140	Handpump In Sahota Baghbani Farm, Vill Harian, Machiwara	Ludhiana	0.12	0.26	0.29	1	BDL
11.	4153	Dashmesh Nagar, Gali No 12, Ludhiana	Ludhiana	0.26	0.25	0.24	0.5	0.6
12.	4154	Tssm Sr Sec School Shimlapuri,	Ludhiana	0.11	0.16	0.3	0.6	-
13.	4155	Dairy Complex, Tajpur Road, Ludhiana Opp Satish Dairy Mear Amrit Dharam Kanta	Ludhiana	0.2	0.32	0.3	0.21	0.5
14.	4156	Handpump In Area On Sua Road Near Dhandari Kalan,	Ludhiana	0.36	0.28	0.21	0.8	BDL
15.	4157	Handpump Shallow Tubewell In The Area Of Janta Nagar,	Ludhiana	0.46	0.36	-	0.9	0.4
16.	2916	Near Landfill Site, Amritsar,	Amritsar	0.24	0.22	0.4	0.21	BDL
17.	2917	Near Harmandir Saheb,	Amritsar	0.58	0.44	0.46	0.59	BDL
18.	2918	Dera Bassi,	Mohali	0.84	0.62	0.9	0.57	0.5
19.	2919	Dera Bassi, Punjab	Mohali	0.92	0.74	0.9	0.41	0.4
20.	2920	Hamira Village,	Kapurthala	0.2	0.31	0.3	0.51	BDL
21.	2921	Hamira Village,	Kapurthala	0.36	0.34	0.6	0.39	BDL
22.	2922	Leather Complex, Jalandhar,	Jalandhar	0.24	-	BDL	0.5	BDL
23.	2923	Leather Complex, Jalandhar,	Jalandhar	0.38	0.36	0.9	0.6	BDL
24.	2924	Mandi Gobindgarh,	Fatehgarh Sahib	0.71	0.94	0.7	0.6	BDL
25.	2925	Mandi Gobindgarh,	Fatehgarh Sahib	0.84	0.98	0.8	0.8	BDL
26.	2926	Nangal,	Nangal	1.09	1.1	-	BDL	BDL
27.	2927	Nangal,	Nangal	0.96	1	-	BDL	BDL
28.	2928	Ropar,	Roopnagar	0.58	0.5	0.49	0.3	BDL

S. No.	Station Code	Name of Monitoring Station	District	Year of monitoring				
				2019	2020	2021	2022	2023
BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)			1.0 mg/L					
29.	2929	Ropar,	Roopnagar	1.76	0.31	0.29	BDL	BDL
30.	2930	Toansa,	Roopnagar	0.34	0.42	0.49	0.9	-
31.	2931	Toansa,	Roopnagar	0.58	0.29	0.3	1.2	-
32.	4137	Handpump In M/S Deep Steel Ltd, Mughal Majra, Mandi Gobbindgarh	Fatehgarh Sahib	0.76	0.9	0.59	1.06	BDL
33.	4138	Handpump, 149 Near Sant Pritam School, Ambey Majra, Mandi Gobindgarh	Fatehgarh Sahib	0.69	0.75	0.53	0.9	BDL
34.	4141	Handpump Instrial Growth Centre, Defence Road, Pathankot	Gurdaspur	0.18	0.14	BDL	BDL	BDL
35.	4142	Handpump, Vill Dheriwal, Dist Pathankot	Gurdaspur	0.07	0.16	BDL	BDL	BDL
36.	4143	Handpump Near Ash Dykes Of Nabha Power Ltd, Vill Nalash, Rajpura	Patiala	0.28	0.24	0.41	0.3	-
37.	4144	Ground Water Sampling Blocation In Village Main	Patiala	0.56	0.28	0.3	0.22	-
38.	4145	Sagar Para Drain Meeting With Ghaggar Near Vill Sagar Para, Patran	Patiala	0.26	0.3	-	0.24	BDL
39.	4147	Near Ash Dykes Of Guru Nanak Thermal Power Plant/ Nfl, Bhatinda	Bathinda	1.48	1.6	-	4.31	BDL
40.	4148	Village Kanakwal/ Phukokari Ggs Hmel Refinery, Bhatinda	Bathinda	1.34	1.62	-	1.4	BDL
41.	4149	Ash Dykes Of Thermal Power Plant Lehra Mohabbat, Bhatinda	Bathinda	5.28	6.44	-	2.35	0.3
42.	4150	100 M D/S Of Vill Rurianwali, Dist Muktsar	Bathinda	0.4	0.44	-	1.91	0.3
43.	4151	Near Malbors Internationla P Ltd, Vill Mansoorwal, Dist Ferozpur	Faridkot	0.58	0.39	-	BDL	-
<b>No. of locations exceedance observed</b>				<b>5</b>	<b>4</b>	<b>-</b>	<b>8</b>	<b>-</b>
<b>Total monitored locations</b>				<b>43</b>	<b>42</b>	<b>32</b>	<b>43</b>	<b>37</b>
<b>% exceedance</b>				<b>11.6%</b>	<b>9.5%</b>	<b>-</b>	<b>18.6%</b>	<b>-</b>

**Table - 4: Ground water quality in Punjab w.r.t - Total Dissolved Solids (TDS) during the years 2019 & 2023 (maximum value observed)**

S. No.	Station Code	Name of Monitoring Station	District	Year of monitoring				
				2019	2020	2021	2022	2023
<b>BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)</b>				<b>500.0 mg/ L</b>				
1.	1898	Petrol Pump Opp. Hero Cycle, Ludhiana	Ludhiana	672	732	-	850	1002
2.	1900	Gurcharan Singh Haibowal Dairy Complex, Ludhiana	Ludhiana	430	757	819	527	682
3.	1901	Dusshera Ground Industrial Estate,	Ludhiana	470	444	-	368	783
4.	1902	Shukla Tea Stal Point, Ludhiana	Ludhiana	804	727	638	797	791
5.	1903	Punjab Agricultural University,	Ludhiana	434	303	348	282	304
6.	4134	Tube Well At Rssb, Tibba Road, Ludhiana Industrial Area	Ludhiana	344	736	331	378	325
7.	4135	Msw Dumping Site, Jamalpur	Ludhiana	354	365	418	821	574
8.	4136	STP Jamalpur	Ludhiana	338	1061	1004	998	335
9.	4139	Handpump At Park Adjoining To National Industries, E-128, Ph-Iv, Focal Point Ludhiana	Ludhiana	682	1029	1056	1253	1035
10.	4140	Handpump In Sahota Baghbani Farm, Vill Harian, Machiwara	Ludhiana	298	1015	931	1058	445
11.	4153	Dashmesh Nagar, Gali No 12, Ludhiana	Ludhiana	326	449	504	752	611
12.	4154	Tssm Sr Sec School Shimlapuri,	Ludhiana	496	541	552	519	-
13.	4155	Dairy Complex, Tajpur Road, Ludhiana Opp Satish Dairy Mear Amrit Dharam Kanta	Ludhiana	478	882	783	483	581
14.	4156	Handpump In Area On Sua Road Near Dhandari Kalan, Ludhiana	Ludhiana	684	687	602	631	285
15.	4157	Handpump Shallow Tubewell In The Area Of Janta Nagar, Ludhiana	Ludhiana	454	482	-	749	832
16.	2916	Near Landfill Site, Amritsar, Punjab	Amritsar	650	622	540	493	721
17.	2917	Near Harmandir Saheb, Amritsar,	Amritsar	699	619	610	645	681
18.	2918	Dera Bassi, Punjab	Mohali	1532	341	1548	1574	1071
19.	2919	Dera Bassi, Punjab	Mohali	1950	1542	1195	1829	1293
20.	2920	Hamira Village, Punjab	Kapurthala	840	834	680	824	741
21.	2921	Hamira Village, Punjab	Kapurthala	286	-	281	262	548
22.	2922	Leather Complex, Jalandhar, Punjab	Jalandhar	954	-	578	828	498
23.	2923	Leather Complex, Jalandhar, Punjab	Jalandhar	232	1440	1502	1588	698
24.	2924	Mandi Gobindgarh, Punjab	Fatehgarh Sahib	523	1344	690	580	498
25.	2925	Mandi Gobindgarh, Punjab	Fatehgarh Sahib	1663	1396	718	733	562
26.	2926	Nangal, Punjab	Nangal	886	502	-	520	438
27.	2927	Nangal, Punjab	Nangal	723	550	-	447	398
28.	2928	Ropar, Punjab	Roopnagar	577	282	305	409	364

S. No.	Station Code	Name of Monitoring Station	District	Year of monitoring				
				2019	2020	2021	2022	2023
<b>BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)</b>				<b>500.0 mg/ L</b>				
29.	2929	Ropar, Punjab	Roopnagar	273	409	335	153	321
30.	2930	Toansa, Punjab	Roopnagar	454	1186	915	795	-
31.	2931	Toansa, Punjab	Roopnagar	1240	433	862	1518	-
32.	4137	Handpump In M/S Deep Steel Ltd, Mughal Majra, Mandi Gobbindgarh	Fatehgarh Sahib	805	1393	607	1067	687
33.	4138	Handpump, 149 Near Sant Pritam School, Ambey Majra, Mandi Gobindgarh	Fatehgarh Sahib	471	1386	382	629	367
34.	4141	Handpump Instrial Growth Centre, Defence Road, Pathankot	Gurdaspur	221	318	263	195	645
35.	4142	Handpump, Vill Dheriwal, Dist Pathankot	Gurdaspur	322	349	273	184	748
36.	4143	Handpump Near Ash Dykes Of Nabha Power Ltd, Vill Nalash, Rajpura	Patiala	351	794	697	668	-
37.	4144	Ground Water Sampling Blocation In Village Main	Patiala	644	340	327	365	-
38.	4145	Sagar Para Drain Meeting With Ghaggar Near Vill Sagar Para, Patran	Patiala	320	609	498	347	278
39.	4147	Near Ash Dykes Of Guru Nanak Thermal Power Plant/ Nfl, Bhatinda	Bathinda	1380	1954	-	1655	791
40.	4148	Village Kanakwal/ Phukokari Ggs Hmel Refinery, Bhatinda	Bathinda	3112	2882	-	1270	796
41.	4149	Ash Dykes Of Thermal Power Plant Lehra Mohabbat, Bhatinda	Bathinda	756	874	-	710	815
42.	4150	100 M D/S Of Vill Rurianwali, Dist Muktsar	Bathinda	1256	1087	-	2693	958
43.	4151	Near Malbors Internationla P Ltd, Vill Mansoorwal, Dist Ferozpur	Faridkot	1358	1518	-	1076	-
<b>No. of locations exceedance observed</b>				<b>23</b>	<b>29</b>	<b>22</b>	<b>30</b>	<b>24</b>
<b>Total monitored locations</b>				<b>43</b>	<b>41</b>	<b>33</b>	<b>43</b>	<b>40</b>
<b>% exceedance</b>				<b>53.4%</b>	<b>70.7%</b>	<b>66.6%</b>	<b>69.7%</b>	<b>60%</b>

**Table - 5: Compliance of ground water in Punjab w.r.t Heavy Metals viz. Arsenic, Cadmium & Copper during the year 2019 - 2023**

S. No.	Station Code	Name of Monitoring Station	District	Arsenic (mg/ L)					Cadmium (mg/ L)					Copper (mg/ L)				
				Year of monitoring					Year of monitoring					Year of monitoring				
				2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
				0.01 mg/ L					0.003 mg/ L					0.05 mg/ L				
<b>BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)</b>																		
1.	1898	Petrol Pump Opp. Hero Cycle, Ludhiana	Ludhiana	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL
2.	1900	Gurchaaran Singh Haibowal Dairy Complex,	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
3.	1901	Dusshera Ground Industrial Estate,	Ludhiana	BDL	BDL	-	BDL	BDL	BDL	BDL		BDL	BDL	BDL	BDL	-	BDL	BDL
4.	1902	Shukla Tea Stal Point, Ludhiana	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
5.	1903	Punjab Agricultural University, Ludhiana	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6.	4134	Tube Well At Rssb, Tibba Road, Ludhiana Industrial Area	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.007	BDL	BDL	BDL	BDL
7.	4135	MSW Dumping Site, Jamalpur	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8.	4136	STP Jamalpur	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
9.	4153	Dashmesh Nagar, Gali No 12, Ludhiana	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.009	BDL	BDL	BDL	BDL
10.	4154	Tssm Sr Sec School Shimlapuri, Ludhiana	Ludhiana	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL		0.008	BDL	BDL	BDL	-
11.	4155	Dairy Complex, Tajpur Road, Ludhiana Opp Satish Dairy Mear Amrit Dharam Kanta	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.	4156	Handpump In Area On Sua Road Near Dhandari Kalan, Ludhiana	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.	4157	Handpump Shallow Tubewell In The Area Of Janta Nagar, Ludhiana	Ludhiana	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL
14.	4139	Handpump At Park Adjoining To National Industries, E-128, Ph-Iv, Focal Point	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.031	BDL	BDL	BDL	BDL
15.	4140	Handpump In Sahota Baghbani Farm, Vill Harian, Machiwara	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.	2916	Near Landfill Site, Amritsar, Punjab	Amritsar	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.	2917	Near Harmandir Saheb, Amritsar, Punjab	Amritsar	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.	2918	Dera Bassi, Punjab	Mohali	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

S. No.	Station Code	Name of Monitoring Station	District	Arsenic (mg/ L)					Cadmium (mg/ L)					Copper (mg/ L)					
				Year of monitoring					Year of monitoring					Year of monitoring					
				2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	
				0.01 mg/ L					0.003 mg/ L					0.05 mg/ L					
		<b>BIS Drinking Water Specifications IS:10500:2012. (Acceptable Limit)</b>																	
19.	2919	Dera Bassi, Punjab	Mohali	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
20.	2920	Hamira Village, Punjab	Kapurthala	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
21.	2921	Hamira Village, Punjab	Kapurthala	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
22.	2922	Leather Complex, Jalandhar, Punjab	Jalandhar	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	
23.	2923	Leather Complex, Jalandhar, Punjab	Jalandhar	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
24.	2924	Mandi Gobindgarh, Punjab	Fatehgarh Sahib	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
25.	2925	Mandi Gobindgarh, Punjab	Fatehgarh Sahib	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
26.	2926	Nangal, Punjab	Nangal	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	
27.	2927	Nangal, Punjab	Nangal	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	
28.	2928	Ropar, Punjab	Roopnagar	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
29.	2929	Ropar, Punjab	Roopnagar	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
30.	2930	Toansa, Punjab	Roopnagar	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	0.008	BDL	BDL	BDL	-	
31.	2931	Toansa, Punjab	Roopnagar	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	0.009	BDL	BDL	BDL	-	
32.	4137	Handpump In M/S Deep Steel Ltd, Mughal Majra, Mandi Gobindgarh	Fatehgarh Sahib	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
33.	4138	Handpump, 149 Near Sant Pritam School, Ambey Majra, Mandi Gobindgarh	Fatehgarh Sahib	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
34.	4141	Handpump Instrial Growth Centre, Defence Road, Pathankot	Gurdaspur	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
35.	4142	Handpump, Vill Dheriwal, Dist Pathankot	Gurdaspur	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
36.	4143	Handpump Near Ash Dykes Of Nabha Power Ltd, Vill Nalash, Rajpura	Patiala	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	
37.	4144	Ground Water Sampling Blocation In Village Main	Patiala	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	
38.	4145	Sagar Para Drain Meeting With Ghaggar Near Vill Sagar Para, Patran	Patiala	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	

S. No.	Station Code	Name of Monitoring Station	District	Arsenic (mg/ L)					Cadmium (mg/ L)					Copper (mg/ L)				
				Year of monitoring					Year of monitoring					Year of monitoring				
				2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
				0.01 mg/ L					0.003 mg/ L					0.05 mg/ L				
		<b>BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)</b>																
39.	4147	Near Ash Dykes Of Guru Nanak Thermal Power Plant/ Nfl, Bhatinda	Bathinda	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	0.017	BDL	-	BDL	BDL
40.	4148	Village Kanakwal/ Phukokari Ggs Hmel Refinery, Bhatinda	Bathinda	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	0.045	BDL	-	BDL	BDL
41.	4149	Ash Dykes Of Thermal Power Plant Lehra Mohabbat, Bhatinda	Bathinda	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL
42.	4150	100 M D/S Of Vill Rurianwali, Dist Muktsar	Bathinda	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	0.045	BDL	-	BDL	BDL
43.	4151	Near Malbors Internationla P Ltd, Vill Mansoorwal, Dist Ferozpur	Faridkot	BDL	BDL	-	BDL	-	BDL	BDL	-	BDL	-	0.038	BDL	-	BDL	-

Table - 6: Compliance of ground water in Punjab w.r.t Heavy Metals viz. Lead, Chromium &amp; Nickel during the year 2019 - 2023

S. No.	Station Code	Name of Monitoring Station	District	Lead (mg/ L)					Chromium (mg/ L)					Nickel (mg/ L)				
				Year of monitoring					Year of monitoring					Year of monitoring				
				2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)				0.001 mg/ L					0.05 mg/ L					0.02 mg/ L				
1.	1898	Petrol Pump Opp. Hero Cycle, Ludhiana	Ludhiana	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL		BDL	BDL
2.	1900	Gurchaaran Singh Haibowal Dairy Complex,	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
3.	1901	Dusshera Ground Industrial Estate, Ludhiana	Ludhiana	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL		BDL	BDL
4.	1902	Shukla Tea Stal Point, Ludhiana	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
5.	1903	Punjab Agricultural University, Ludhiana	Ludhiana	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6.	4134	Tube Well At Rssb, Tibba Road, Ludhiana Industrial Area	Ludhiana	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
7.	4135	MSW Dumping Site, Jamalpur	Ludhiana	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8.	4136	STP Jamalpur	Ludhiana	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	0.008	BDL	BDL	BDL	BDL
9.	4139	Handpump At Park Adjoining To National Industries, E-128, Ph-Iv, Focal Point	Ludhiana	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.	4140	Handpump In Sahota Baghbani Farm, Vill Harian, Machiwara	Ludhiana	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.	4153	Dashmesh Nagar, Gali No 12, Ludhiana	Ludhiana	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.	4154	Tssm Sr Sec School Shimlapuri, Ludhiana	Ludhiana	-	BDL	BDL	BDL	-	-	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-
13.	4155	Dairy Complex, Tajpur Road, Ludhiana Opp Satish Dairy Mear Amrit Dharam Kanta	Ludhiana	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.	4156	Handpump In Area On Sua Road Near Dhandari Kalan, Ludhiana	Ludhiana	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

S. No.	Station Code	Name of Monitoring Station	District	Lead (mg/ L)					Chromium (mg/ L)					Nickel (mg/ L)				
				Year of monitoring					Year of monitoring					Year of monitoring				
				2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
				0.001 mg/ L					0.05 mg/ L					0.02 mg/ L				
		<b>BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)</b>																
15.	4157	Handpump Shallow Tubewell In The Area Of Janta Nagar, Ludhiana	Ludhiana	-	BDL	-	BDL	BDL	-	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL
16.	2916	Near Landfill Site, Amritsar, Punjab	Amritsar	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.	2917	Near Harmandir Saheb, Amritsar, Punjab	Amritsar	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.	2918	Dera Bassi, Punjab	Mohali	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.	2919	Dera Bassi, Punjab	Mohali	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.	2920	Hamira Village, Punjab	Kapurthala	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.	2921	Hamira Village, Punjab	Kapurthala	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.	2922	Leather Complex, Jalandhar, Punjab	Jalandhar	-	-	BDL	BDL	BDL	-		BDL	BDL	BDL	BDL		BDL	BDL	BDL
23.	2923	Leather Complex, Jalandhar, Punjab	Jalandhar	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.	2924	Mandi Gobindgarh, Punjab	Fatehgarh Sahib	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.	2925	Mandi Gobindgarh, Punjab	Fatehgarh Sahib	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	0.006	BDL	BDL	BDL	BDL
26.	2926	Nangal, Punjab	Nangal	-	BDL	-	BDL	BDL	-	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL
27.	2927	Nangal, Punjab	Nangal	-	BDL	-	BDL	BDL	-	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL
28.	2928	Ropar, Punjab	Roopnagar	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.	2929	Ropar, Punjab	Roopnagar	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.	2930	Toansa, Punjab	Roopnagar	-	BDL	BDL	BDL	-	-	BDL	BDL	BDL		BDL	BDL	BDL	BDL	-
31.	2931	Toansa, Punjab	Roopnagar	-	BDL	BDL	BDL	-	-	BDL	BDL	BDL		BDL	BDL	BDL	BDL	-
32.	4137	Handpump In M/S Deep Steel Ltd, Mughal Majra, Mandi Gobindgarh	Fatehgarh Sahib	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	0.007	BDL	BDL	BDL	BDL
33.	4138	Handpump, 149 Near Sant Pritam School, Ambey Majra, Mandi Gobindgarh	Fatehgarh Sahib	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
34.	4141	Handpump Instrial Growth Centre, Defence Road, Pathankot	Gurdaspur	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

S. No.	Station Code	Name of Monitoring Station	District	Lead (mg/L)					Chromium (mg/L)					Nickel (mg/L)				
				Year of monitoring					Year of monitoring					Year of monitoring				
				2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
<b>BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)</b>				<b>0.001 mg/L</b>					<b>0.05 mg/L</b>					<b>0.02 mg/L</b>				
35.	4142	Handpump, Vill Dheriwal, Dist Pathankot	Gurdaspur	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
36.	4143	Handpump Near Ash Dykes Of Nabha Power Ltd, Vill Nalash, Rajpura	Patiala	-	BDL	BDL	BDL	-	-	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-
37.	4144	Ground Water Sampling Blocation In Village Main	Patiala	-	BDL	BDL	BDL	-	-	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-
38.	4145	Sagar Para Drain Meeting With Ghaggar Near Vill Sagar Para, Patran	Patiala	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
39.	4147	Near Ash Dykes Of Guru Nanak Thermal Power Plant/ Nfl, Bhatinda	Bathinda	-	BDL	-	BDL	BDL	-	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL
40.	4148	Village Kanakwal/ Phukokari Ggs Hmel Refinery, Bhatinda	Bathinda	-	BDL	-	BDL	BDL	-	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL
41.	4149	Ash Dykes Of Thermal Power Plant Lehra Mohabbat, Bhatinda	Bathinda	-	BDL	-	BDL	BDL	-	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL
42.	4150	100 M D/S Of Vill Rurianwali, Dist Muktsar	Bathinda	-	BDL	-	BDL	BDL	-	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL
43.	4151	Near Malbors Internationla P Ltd, Vill Mansoorwal, Dist Ferozpur	Faridkot	-	BDL	-	BDL	-	-	BDL	-	BDL	-	BDL	BDL	-	BDL	-

Table - 7: Compliance of ground water in Punjab w.r.t Heavy Metals viz. Zinc, Mercury &amp; Iron during the year 2019 – 2023

Station Code	Name of Monitoring Station	District	Zinc (mg/ L)					Mercury (mg/ L)					Iron (mg/L)				
			Year of monitoring					Year of monitoring					Year of monitoring				
			2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
<b>BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)</b>			<b>5.0 mg/ L</b>					<b>0.001 mg/ L</b>					<b>0.3 mg/ L</b>				
1898	Petrol Pump Opp. Hero Cycle	Ludhiana	0.1	BDL	-	BDL	0.12	BDL	BDL	-	BDL	BDL	0.19	BDL		0.1	BDL
1900	Gurchaaran Singh Haibowal Dairy Complex, Ludhiana	Ludhiana	0.16	0.28	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.11	BDL	0.29	0.11	BDL
1901	Dusshera Ground Industrial Estate, Ludhiana	Ludhiana	0.29	BDL	-	0.17	BDL	BDL	BDL	-	BDL	BDL	0.16	BDL		0.31	BDL
1902	Shukla Tea Stal Point, Ludhiana	Ludhiana	0.12	0.14	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.22	BDL	BDL	0.15	BDL
1903	Punjab Agricultural University, Ludhiana	Ludhiana	0.21	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.29	BDL	0.19	0.1	BDL
4134	Tube Well At Rssb, Tibba Road, Ludhiana Industrial Area	Ludhiana	0.29	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.13	0.24	0.1	BDL
4135	Msw Dumping Site, Jamalpur	Ludhiana	0.19	BDL	BDL	0.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.22	0.21	BDL
4136	Stp Jamalpur	Ludhiana	0.13	BDL	0.36	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.1	BDL	0.58	BDL	BDL
4139	Handpump At Park Adjoining To National Industries, E-128, Ph-Iv, Focal Point Ludhiana	Ludhiana	0.1	BDL	BDL	0.2	0.45	BDL	BDL	BDL	BDL	BDL	0.16	BDL	0.17	0.34	0.13
4140	Handpump In Sahota Baghbani Farm, Vill Harian, Machiwara	Ludhiana	BDL	BDL	BDL	0.19	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.86	0.11	0.22	BDL
4153	Dashmesh Nagar, Gali No 12, Ludhiana	Ludhiana	0.18	BDL	0.14	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.18	BDL	0.31	0.19	BDL
4154	Tssm Sr Sec School Shimlapuri, Ludhiana	Ludhiana	0.98	1.67	0.11	BDL	-	BDL	BDL	BDL	BDL	-	0.21	0.3	0.22	0.12	
4155	Dairy Complex, Tajpur Road, Ludhiana Opp Satish Dairy Mear Amrit Dharam Kanta	Ludhiana	0.17	0.14	0.22	0.11	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.38	0.27	BDL
4156	Handpump In Area On Sua Road Near Dhandari Kalan, Ludhiana	Ludhiana	0.31	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.62	0.12	0.16	BDL

Station Code	Name of Monitoring Station	District	Zinc (mg/ L)					Mercury (mg/ L)					Iron (mg/L)					
			Year of monitoring					Year of monitoring					Year of monitoring					
			2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	
<b>BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)</b>			<b>5.0 mg/ L</b>					<b>0.001 mg/L</b>					<b>0.3 mg/L</b>					
4157	Handpump Shallow Tubewell In The Area Of Janta Nagar, Ludhiana	Ludhiana	0.18	BDL	-	0.11	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	BDL	-	0.21	BDL
2916	Near Landfill Site, Amritsar, Punjab	Amritsar	BDL	0.14	0.24	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.58	0.26	0.2	BDL	BDL	
2917	Near Harmandir Saheb, Amritsar, Punjab	Amritsar	BDL	BDL	0.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.1	BDL	0.3	BDL	BDL	
2918	Dera Bassi, Punjab	Mohali	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.11	0.14	BDL	BDL	BDL	
2919	Dera Bassi, Punjab	Mohali	BDL	0.11	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.15	BDL	BDL	BDL	BDL	
2920	Hamira Village, Punjab	Kapurthala	0.88	BDL	0.39	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.55	0.17	0.63	0.18	BDL	
2921	Hamira Village, Punjab	Kapurthala	1.06	0.59	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.96	0.24	0.22	0.12	BDL	
2922	Leather Complex, Jalandhar,	Jalandhar	0.56	-	0.4	0.1	BDL	BDL	-	BDL	BDL	BDL	0.7		0.69	0.16	BDL	
2923	Leather Complex, Jalandhar	Jalandhar	0.12	BDL	0.95	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.31	BDL	1.17	0.14	BDL	
2924	Mandi Gobindgarh, Punjab	Fatehgarh Sahib	BDL	BDL	0.11	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.22	0.1	BDL	
2925	Mandi Gobindgarh, Punjab	Fatehgarh Sahib	BDL	BDL	0.17	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.12	BDL	0.31	BDL	BDL	
2926	Nangal, Punjab	Nangal	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	0.15	BDL	-	0.15	BDL	
2927	Nangal, Punjab	Nangal	BDL	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	BDL	BDL	-	0.16	BDL	
2928	Ropar, Punjab	Roopnagar	0.1	BDL	BDL	0.1	BDL	BDL	BDL	BDL	BDL	BDL	0.24	0.21	BDL	0.26	BDL	
2929	Ropar, Punjab	Roopnagar	BDL	BDL	0.13	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.4	0.1	BDL	
2930	Toansa, Punjab	Roopnagar	0.26	1.6	0.96	0.37	-	BDL	BDL	BDL	BDL	-	0.71	5.85	1.47	0.55	-	
2931	Toansa, Punjab	Roopnagar	0.14	1.33	0.71	0.11	-	BDL	BDL	BDL	BDL	-	0.48	4.96	2.31	0.2	-	
4137	Handpump In M/S Deep Steel Ltd, Mughal Majra, Mandi Gobbindgarh	Fatehgarh Sahib	BDL	0.2	BDL	0.15	BDL	BDL	BDL	BDL	BDL	BDL	0.11	0.39	BDL	0.2	BDL	
4138	Handpump, 149 Near Sant Pritam School, Ambey Majra, Mandi Gobindgarh	Fatehgarh Sahib	BDL	0.21	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.1	BDL	BDL	0.16	BDL	

Station Code	Name of Monitoring Station	District	Zinc (mg/ L)					Mercury (mg/ L)					Iron (mg/L)				
			Year of monitoring					Year of monitoring					Year of monitoring				
BIS Drinking Water Specifications IS:10500: 2012. (Acceptable Limit)			2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
			5.0 mg/ L					0.001 mg/ L					0.3 mg/ L				
4141	Handpump Instrial Growth Centre, Defence Road, Pathankot	Gurdaspur	BDL	BDL	BDL	0.19	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.36	BDL
4142	Handpump, Vill Dheriwal, Dist Pathankot	Gurdaspur	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.14	BDL	BDL	0.19	BDL
4143	Handpump Near Ash Dykes Of Nabha Power Ltd, Vill Nalash, Rajpura	Patiala	BDL	0.35	BDL	0.1	-	BDL	BDL	BDL	BDL	-	0.11	0.13	BDL	0.21	-
4144	Ground Water Sampling Blocation In Village Main	Patiala	BDL	0.35	0.13	BDL	-	BDL	BDL	BDL	BDL	-	0.14	0.19	BDL	0.12	-
4145	Sagar Para Drain Meeting With Ghaggar Near Vill Sagar Para, Patran	Patiala	0.1	BDL	0.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.44	BDL	0.3	0.16	BDL
4147	Near Ash Dykes Of Guru Nanak Thermal Power Plant/ Nfl, Bhatinda	Bathinda	BDL	BDL	-	0.2	BDL	BDL	BDL	-	BDL	BDL	0.17	BDL	-	0.37	BDL
4148	Village Kanakwal/ Phukokari Ggs Hmel Refinery, Bhatinda	Bathinda	0.64	BDL	-	BDL	BDL	BDL	BDL	-	BDL	BDL	0.38	BDL	-	0.1	BDL
4149	Ash Dykes Of Thermal Power Plant Lehra Mohabbat, Bhatinda	Bathinda	0.25	BDL	-	0.11	BDL	BDL	BDL	-	BDL	BDL	0.14	BDL	-	0.18	BDL
4150	100 M D/S Of Vill Rurianwali, Dist Muktsar	Bathinda	0.14	BDL	-	0.1	BDL	BDL	BDL	-	BDL	BDL	0.11	BDL	-	0.15	BDL
4151	Near Malbors Internationla P Ltd, Vill Mansoorwal, Dist Ferozpur	Faridkot	0.15	BDL	-	BDL	-	BDL	BDL	-	BDL	-	0.24	0.17	-	0.15	-
<b>No. of locations exceedance observed</b>													<b>9</b>	<b>5</b>	<b>10</b>	<b>5</b>	<b>0</b>
<b>Total monitored locations</b>													<b>43</b>	<b>42</b>	<b>33</b>	<b>43</b>	<b>37</b>
<b>% exceedance</b>													<b>20.9%</b>	<b>11.9%</b>	<b>30.3%</b>	<b>11.6%</b>	<b>-</b>

Item No. 05

Court No. 1

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

Original Application No.676/2023

In re: News item appearing in The Times of India dated 12.10.2023 titled  
**“Agricultural Runoff causing groundwater pollution in Punjab,  
making Drinking Water unsafe, Reveals Study ”**

Date of hearing: 03.11.2023

**CORAM: HON’BLE MR. JUSTICE PRAKASH SHRIVASTAVA, CHAIRPERSON  
HON’BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER  
HON’BLE DR. A. SENTHIL VEL, EXPERT MEMBER**

Respondent: Mr. Abhay Dev Sharma, Advocate with Mr. Avtar Singh, Scientific Officer,  
Punjab PCB (Through VC)

**ORDER**

1. This original application has been registered in suo-moto exercise of power on the basis of the news item published on 12.10.2023 in the Times of India, titled “Agricultural Runoff causing groundwater pollution in Punjab, making Drinking Water unsafe, Reveals Study ”

2. As per the said news item, in a research released by Indian Institute of Technology (IIT) Mandi, it has been found that human activity has increased ground water pollution, particularly, through agricultural runoff in Punjab, making it unsafe for drinking and raising health risks.

3. The report reveals that on account of increase in the demand of ground water, local farmers exploiting ground water from deeper geological strata which are enriched in heavy metals and few are radioactive, having serious health impacts. Such incidents relating to declining in water quality are mainly in Southwestern region of Punjab. The report states that Punjab once celebrated as the ‘bread bowl of India’, is now infamously referred to as the ‘cancer capital of India’, reflecting the

dire consequences of water pollution and its impact on human health. As per the report, immediate action is required at the end of the concerned authorities to investigate the quality of groundwater for drinking and irrigation purposes.

4. The tribunals power to register suo-moto OA has been recognized in the matter of *“Municipal Corporation of Greater Mumbai vs. Ankita Sinha & Ors.”* reported in 2021 SCC Online SC 897.

5. On advance notice, Punjab Pollution Control Board has filed a short reply seeking time to file response to the news item report. It was informed that Punjab PCB is monitoring ground water quality at 46 locations but, could not give the water quality status.

6. Having regard to the facts disclose in the news item, we deem it proper to implead following parties as Respondents:-

- (i) Central Pollution Control Board through its Member Secretary;
- (ii) Punjab Pollution Control Board through its Member Secretary;
- (iii) Indian Institute of Technology (IIT) Mandi; though its Director;
- (iv) Department of Water Supply and Sanitation, State of Punjab through its Administrative Head
- (v) Department of Agriculture and Farmers Welfare, State of Punjab though its Administrative Head;

7. Registry is directed to serve the above Respondents except PPCB which is represented today.

8. The Punjab Pollution Control Board is directed to file report in response to the facts disclosed in the news item report, inter-alia,

including the issue of heavy metals, radioactive substance, pesticides and chemicals pollutants found in the ground water of the concerned area in sample testing.

9. Let the report be submitted within a period of six weeks
10. List the matter on 18.01.2024.

Prakash Shrivastava, CP

Sudhir Agarwal, JM

Dr. A. Senthil Vel, EM

November 03, 2023  
Original Application No.676/2023  
JG