

Quality of Water of Polluted River stretches in Punjab for the month of April, 2021

Satluj : Roop Nagar to Harike Bridge : Priority I

| S.N. | Point of Sample Collection | Code | Date of receipt in lab | Lab Sample No. | Sample Collected & Analyzed by | pH | DO mg/l | BOD mg/l | Cond μ s/Cm | T.Coli MPN/ 100ml | F. Coli MPN/ 100ml | Free Amm. mg/l | SAR | B mg/l | Quality of water as per DBU | Water Quality Index |
|------|---|------|------------------------|----------------|--------------------------------|-----|---------|----------|-----------------|-------------------|--------------------|----------------|------|--------|-----------------------------|---------------------|
| 1 | Ropar Head-Works | 1019 | 09.04.21 | SW 1965 | ZO Lab Ldh | 8.3 | 8.4 | <1 | 288 | 930 | 370 | BDL | 0.27 | 0.16 | C | S |
| 2 | River Satluj D/S of Rishab- Paper Mills | 1293 | 09.04.21 | SW 1964 | ZO Lab Ldh | 8.9 | 8.2 | <1 | 294 | 940 | 460 | BDL | 0.28 | 0.31 | C | S |
| 3 | River Satluj U/S Buddha Nallah | 1690 | 14.04.21 | SW 1975 | ZO Lab Ldh | 8.3 | 6.7 | 2.1 | 337 | 2600 | 780 | 0.110 | 0.44 | 0.25 | C | S |
| 4 | River Satluj at 100 mts D/s after Budha Nallah confluence, Ludhiana | 1020 | 14.04.21 | SW 1977 | ZO Lab Ldh | 7.6 | BDL | 44 | 890 | 23,00,000 | 11,00,000 | 0.465 | 2.28 | 0.51 | E | U |
| 5 | River Satluj at Boat Bridge, Dharamkot Nakodar Road | 1021 | 15.04.21 | SW 1979 | ZO Lab Ldh | 6.8 | BDL | 20 | 672 | 4,80,000 | 1,70,000 | BDL | 1.69 | 0.23 | E | U |
| 6 | River Satluj at D/s East Bein | 1381 | 15.04.21 | SW 1980 | ZO Lab Ldh | 7.0 | BDL | 24 | 697 | 8,40,000 | 3,10,000 | BDL | 1.70 | 0.46 | E | U |
| 7 | River Satluj at Harike | 1022 | 15.04.21 | SW 1981 | ZO Lab Ldh | 6.9 | 5.8 | 6.2 | 433 | 5800 | 1700 | BDL | 0.93 | 0.40 | D | U |

| S.N. | Point of Sample Collection | Code | Date of receipt in lab | Lab Sample No. | Sample Collected & Analyzed by | COD mg/l | Turb NTU | TSS mg/l | TDS mg/l | FDS mg/l | Cl mg/l | SO ₄ mg/l | TH mg/l | Ca mg/l | Mg mg/l | T.Alkn mg/l | P.Alkn mg/l | AmnN mg/l | NO3-N mg/l | TKN mg/l | PO ₄ as P mg/l | F mg/l | Na mg/l | K mg/l |
|------|---|------|------------------------|----------------|--------------------------------|----------|----------|----------|----------|----------|---------|----------------------|---------|---------|---------|-------------|-------------|-----------|------------|----------|---------------------------|--------|---------|--------|
| 1 | Ropar Head-Works | 1019 | 09.04.21 | SW 1965 | ZO Lab Ldh | <5 | 9 | 16 | 165 | 142 | 13 | 9 | 146 | 34.4 | 14.6 | 112 | BDL | BDL | 1.6 | BDL | BDL | 0.24 | 7.5 | 1.7 |
| 2 | River Satluj D/S of Rishab- Paper Mills | 1293 | 09.04.21 | SW 1964 | ZO Lab Ldh | <5 | 7 | 13 | 191 | 170 | 18 | 12 | 176 | 39.2 | 19.0 | 132 | BDL | BDL | 1.5 | BDL | BDL | 0.24 | 8.6 | 1.7 |
| 3 | River Satluj U/S Buddha Nallah | 1690 | 14.04.21 | SW 1975 | ZO Lab Ldh | 16 | 16 | 37 | 207 | 179 | 31 | 16 | 158 | 32.8 | 18.5 | 126 | BDL | 1.1 | 1.8 | 1.5 | 0.64 | 0.26 | 12.6 | 4.9 |
| 4 | River Satluj at 100 mts D/s after Budha Nallah confluence, Ludhiana | 1020 | 14.04.21 | SW 1977 | ZO Lab Ldh | 207 | 120 | 220 | 548 | 432 | 167 | 34 | 226 | 54.4 | 21.9 | 230 | BDL | 18.6 | 3.5 | 25.6 | 6.8 | 0.46 | 79 | 12.2 |
| 5 | River Satluj at Boat Bridge, Dharamkot Nakodar Road | 1021 | 15.04.21 | SW 1979 | ZO Lab Ldh | 111 | 75 | 132 | 429 | 346 | 132 | 31 | 186 | 42.4 | 19.4 | 174 | BDL | 13.6 | 2.9 | 18.5 | 4.5 | 0.37 | 53 | 8.3 |
| 6 | River Satluj at D/s East Bein | 1381 | 15.04.21 | SW 1980 | ZO Lab Ldh | 126 | 70 | 118 | 421 | 332 | 122 | 34 | 190 | 43.2 | 19.9 | 186 | BDL | 12.2 | 2.9 | 16.9 | 4.0 | 0.35 | 54 | 6.7 |
| 7 | River Satluj at Harike | 1022 | 15.04.21 | SW 1981 | ZO Lab Ldh | 32 | 28 | 49 | 276 | 227 | 54 | 28 | 148 | 34.4 | 15.1 | 132 | BDL | 2.7 | 2.7 | 3.8 | 1.8 | 0.31 | 26 | 4.8 |

Note. 1. BDL means Below Method Detection Limit

2. DBU means Designated Best Use (Class-A,B,C,D & E)

3. Water Quality Index (S means Satisfactory, U means Unsatisfactory)

4. U/s means Upstream , D/s means Downstream

Analysis results of Surface water monitoring under NWMP for the month of April, 2021 (Metal/Pesticides)

River Satluj

| S.N. | Point of Sample Collection | Code | Date of receipt in lab | Lab Sample No. | T.Cr (mg/l) | Fe (mg/l) | Ni (mg/l) | Zn (mg/l) | Pb (mg/l) | Cd (mg/l) | Cu (mg/l) | Hg (mg/l) | As (mg/l) |
|------|---|------|------------------------|----------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 6 | Ropar Head-Works | 1019 | 09.04.21 | SW 1965 | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL |
| 7 | River Satluj D/S of Rishab-Paper Mills | 1293 | 09.04.21 | SW 1964 | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL |
| 8 | River Satluj U/S Buddha Nallah | 1690 | 14.04.21 | SW 1975 | BDL | BDL | BDL | 0.04 | BDL | BDL | BDL | BDL | BDL |
| 9 | River Satluj at 100 mts D/s after Budha Nallah confluence, Ludhiana | 1020 | 14.04.21 | SW 1977 | BDL | 1.27 | BDL | 0.06 | BDL | BDL | BDL | BDL | BDL |
| 10 | River Satluj at Boat Bridge, Dharamkot Nakodar Road | 1021 | 15.04.21 | SW 1979 | BDL | 0.54 | BDL | 0.03 | BDL | BDL | BDL | BDL | BDL |
| 11 | River Satluj at D/s East Bein | 1381 | 15.04.21 | SW 1980 | BDL | 0.36 | BDL | BDL | BDL | BDL | BDL | BDL | BDL |
| 12 | River Satluj at Harike | 1022 | 15.04.21 | SW 1981 | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL |

Note. 1. BDL means Below Method Detection Limit

2. Pesticides i.e. Alpha HCH, Beta HCH, Gama HCH, Anilophos, Chloropyrifos, 4,4' DDT, Endosulphan-1, Endosulphan-2, Dieldrin, Aldrin, Methyl Parathion & Malathion were BDL

Quality of Water of Polluted River stretches in Punjab for the month of April, 2021
Ghaggar: Mubarkpur to Sardulgarh: Priority I

| S.N. | Point of Sample Collection | Code | Date of receipt in lab | Lab Sample No. | Sample Collected & Analyzed by | pH | DO mg/l | BOD mg/l | Cond μ s/Cm | T.Coli MPN/ 100ml | F. Coli MPN/ 100ml | Free Amm. mg/l | SAR | B mg/l | Quality of water as per DBDU | Water Quality Index |
|------|--|------|------------------------|----------------|--------------------------------|-----|---------|----------|-----------------|-------------------|--------------------|----------------|------|--------|------------------------------|---------------------|
| 1 | Ghaggar at Mubarikpur Rest House | 1023 | 6/4/21 | SW 3976 | H/o Lab Patiala | 7.7 | 5.2 | 24 | 728 | 24000 | 4100 | 0.27 | 1.94 | 0.38 | D | U |
| 2 | Ghaggar at Bhankarpur | 1295 | 6/4/21 | SW 3977 | H/o Lab Patiala | 7.5 | 3.8 | 33 | 794 | 28000 | 4600 | 0.27 | 2.27 | 0.51 | E | U |
| 3 | Ghaggar at Chattbir | 1698 | 6/4/21 | SW 3978 | H/o Lab Patiala | 7.5 | 3.6 | 30 | 752 | 28000 | 4300 | 0.24 | 2.21 | 0.30 | E | U |
| 4 | Ghaggar at U/s Jharmal Nadi | 1702 | 6/4/21 | SW 3979 | H/o Lab Patiala | 7.3 | 3.7 | 13 | 578 | 22000 | 2700 | 0.10 | 1.87 | 0.34 | E | U |
| 5 | Ghaggar at D/s Jharmal Nadi | 1701 | 6/4/21 | SW 3980 | H/o Lab Patiala | 7.6 | 3.4 | 16 | 707 | 28000 | 3400 | 0.26 | 0.77 | 0.64 | E | U |
| 6 | Ghaggar at U/s Dhakanshu Nallah | 1699 | 6/4/21 | SW 3982 | H/o Lab Patiala | 7.8 | 3.4 | 14 | 672 | 22000 | 2600 | 0.33 | 1.87 | 0.64 | E | U |
| 7 | Ghaggar at D/s Dhakanshu Nallah | 1700 | 6/4/21 | SW 3983 | H/o Lab Patiala | 7.7 | 3.2 | 18 | 760 | 28000 | 4000 | 0.32 | 1.97 | 0.72 | E | U |
| 8 | Ghaggar at Rattanheri | 1473 | 12/4/21 | SW 3993 | H/o Lab Patiala | 7.6 | 1.2 | 39 | 1098 | 35000 | 4600 | 0.34 | 2.72 | 0.80 | E | U |
| 9 | Ghaggar before mixing with Sagar Para drain (U/s sagar para Drain) | 4159 | 12/4/21 | SW 3994 | H/o Lab Patiala | 7.8 | 1.8 | 38 | 1065 | 35000 | 4300 | 0.47 | 2.67 | 0.91 | E | U |
| 10 | Ghaggar after mixing with Sagar Para drain (D/s Sagar Para Drain) | 4160 | 12/4/21 | SW 3995 | H/o Lab Patiala | 7.8 | 1.4 | 41 | 1148 | 35000 | 4700 | 0.45 | 2.72 | 1.00 | E | U |
| 11 | Ghaggar at Khanauri | 1024 | 12/4/21 | SW 3998 | H/o Lab Patiala | 7.8 | 1.9 | 31 | 883 | 28000 | 3900 | 0.43 | 2.52 | 1.31 | E | U |
| 12 | Ghaggar at Moonak | 1703 | 12/4/21 | SW 4000 | H/o Lab Patiala | 7.8 | 2.0 | 35 | 992 | 35000 | 4700 | 0.45 | 2.46 | 0.64 | E | U |
| 13 | Ghaggar at U/s Sardulgarh | 1705 | 22/4/21 | SW 4064 | H/o Lab Patiala | 7.5 | 5.9 | 9 | 512 | 14000 | 2100 | 0.16 | 1.23 | 0.39 | D | U |
| 14 | Ghaggar at D/s Sardulgarh | 1704 | 22/4/21 | SW 4065 | H/o Lab Patiala | 7.5 | 4.6 | 11 | 640 | 21000 | 2700 | 0.18 | 1.80 | 0.45 | D | U |

| S.N. | Point of Sample Collection | Code | Date of receipt in lab | Lab Sample No. | Sample Collected & Analyzed by | COD mg/l | Turb NTU | TSS mg/l | TDS mg/l | FDS mg/l | Cl mg/l | SO ₄ Mg/l | TH mg/l | Ca mg/l | Mg mg/l | T.Alkn mg/l | P.Alkn mg/l | AmnN mg/l | NO ₃ -N mg/l | TKN mg/l | PO ₄ as P mg/l | F mg/l | Na mg/l | K mg/l |
|------|--|------|------------------------|----------------|--------------------------------|----------|----------|----------|----------|----------|---------|----------------------|---------|---------|---------|-------------|-------------|-----------|-------------------------|----------|---------------------------|--------|---------|--------|
| 1 | Ghaggar at Mubarikpur Rest House | 1023 | 6/4/21 | SW 3976 | H/o Lab Patiala | 123 | 490 | 453 | 473 | 408 | 59 | 37 | 254 | 57 | 27 | 247 | BDL | 9.1 | 1.7 | 12.7 | 1.4 | 1.3 | 71 | 40 |
| 2 | Ghaggar at Bhankarpur | 1295 | 6/4/21 | SW 3977 | H/o Lab Patiala | 167 | 470 | 334 | 516 | 439 | 70 | 35 | 292 | 69 | 29 | 251 | BDL | 13.7 | 1.4 | 19.2 | 2.7 | 1.3 | 89 | 41 |
| 3 | Ghaggar at Chattbir | 1698 | 6/4/21 | SW 3978 | H/o Lab Patiala | 160 | 130 | 187 | 488 | 416 | 68 | 31 | 280 | 66 | 28 | 236 | BDL | 12.2 | 1.3 | 17.1 | 2.2 | 1.2 | 85 | 34 |
| 4 | Ghaggar at U/s Jharmal Nadi | 1702 | 6/4/21 | SW 3979 | H/o Lab Patiala | 60 | 45 | 102 | 314 | 321 | 51 | 18 | 176 | 39 | 19 | 214 | BDL | 9.6 | 1.0 | 13.4 | 2.0 | 1.0 | 57 | 29 |
| 5 | Ghaggar at D/s Jharmal Nadi | 1701 | 6/4/21 | SW 3980 | H/o Lab Patiala | 79 | 70 | 111 | 462 | 394 | 62 | 26 | 256 | 51 | 31 | 239 | BDL | 10.2 | 1.1 | 14.3 | 2.1 | 1.2 | 69 | 33 |
| 6 | Ghaggar at U/s Dhakanshu Nallah | 1699 | 6/4/21 | SW 3982 | H/o Lab Patiala | 70 | 25 | 49 | 439 | 376 | 53 | 24 | 222 | 46 | 26 | 234 | BDL | 9.3 | 1.1 | 13.0 | 1.6 | 1.1 | 64 | 32 |
| 7 | Ghaggar at D/s Dhakanshu Nallah | 1700 | 6/4/21 | SW 3983 | H/o Lab Patiala | 86 | 30 | 81 | 492 | 419 | 64 | 31 | 281 | 58 | 33 | 253 | BDL | 10.7 | 1.3 | 15.0 | 1.9 | 1.3 | 76 | 40 |
| 8 | Ghaggar at Rattanheri | 1473 | 12/4/21 | SW 3993 | H/o Lab Patiala | 192 | 60 | 124 | 715 | 610 | 97 | 46 | 495 | 96 | 62 | 277 | BDL | 13.7 | 2.7 | 19.2 | 3.1 | 1.4 | 139 | 68 |
| 9 | Ghaggar before mixing with Sagar Para drain (U/s sagar para Drain) | 4159 | 12/4/21 | SW 3994 | H/o Lab Patiala | 186 | 55 | 119 | 693 | 590 | 96 | 43 | 476 | 93 | 59 | 272 | BDL | 13.4 | 2.9 | 18.8 | 3.0 | 1.4 | 134 | 64 |
| 10 | Ghaggar after mixing with Sagar Para drain (D/s Sagar Para Drain) | 4160 | 12/4/21 | SW 3995 | H/o Lab Patiala | 198 | 60 | 128 | 746 | 634 | 100 | 54 | 524 | 99 | 67 | 284 | BDL | 12.8 | 3.2 | 17.9 | 3.2 | 1.6 | 143 | 72 |
| 11 | Ghaggar at Khanauri | 1024 | 12/4/21 | SW 3998 | H/o Lab Patiala | 148 | 50 | 78 | 577 | 492 | 77 | 34 | 354 | 74 | 41 | 255 | BDL | 12.3 | 2.3 | 17.2 | 1.8 | 1.2 | 109 | 50 |
| 12 | Ghaggar at Moonak | 1703 | 12/4/21 | SW 4000 | H/o Lab Patiala | 174 | 40 | 74 | 648 | 553 | 90 | 45 | 434 | 88 | 52 | 265 | BDL | 12.9 | 2.9 | 18.1 | 2.0 | 1.3 | 118 | 54 |
| 13 | Ghaggar at U/s Sardulgarh | 1705 | 22/4/21 | SW 4064 | H/o Lab Patiala | 41 | 15 | 29 | 334 | 285 | 35 | 24 | 171 | 34 | 21 | 210 | BDL | 8.1 | 2.3 | 11.3 | 1.4 | 1.0 | 37 | 23 |
| 14 | Ghaggar at D/s Sardulgarh | 1704 | 22/4/21 | SW 4065 | H/o Lab Patiala | 56 | 20 | 42 | 415 | 354 | 48 | 29 | 225 | 47 | 26 | 228 | BDL | 8.8 | 2.6 | 12.3 | 1.4 | 1.1 | 62 | 31 |

Note. 1. BDL means Below Method Detection Limit
2. DBU means Designated Best Use (Class-A,B,C,D & E)
3. Water Quality Index (S means Satisfactory, U means Unsatisfactory)

Analysis results of Surface water monitoring under NWMP for the month of April, 2021 (Metal/Pesticides)

| S.N. | Point of Sample Collection | Code | Date of receipt in lab | Lab Code | T.Cr mg/l | Ni mg/l | Fe mg/l | Zn mg/l | Cu mg/l | Pb mg/l | Cd mg/l | As mg/l | Hg mg/l |
|------|--|------|------------------------|----------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | Ghaggar at Mubarikpur Rest House | 1023 | 6/4/21 | SW 3976 | BDL | BDL | 4.15 | 0.34 | BDL | BDL | BDL | BDL | BDL |
| 2 | Ghaggar at Bhankarpur | 1295 | 6/4/21 | SW 3977 | BDL | BDL | 6.31 | 0.54 | BDL | BDL | BDL | BDL | BDL |
| 3 | Ghaggar at Chattbir | 1698 | 6/4/21 | SW 3978 | BDL | BDL | 5.70 | 0.33 | BDL | BDL | BDL | BDL | BDL |
| 4 | Ghaggar at U/s Jharmal Nadi | 1702 | 6/4/21 | SW 3979 | BDL | BDL | 5.12 | 0.30 | BDL | BDL | BDL | BDL | BDL |
| 5 | Ghaggar at D/s Jharmal Nadi | 1701 | 6/4/21 | SW 3980 | BDL | BDL | 6.01 | 0.29 | BDL | BDL | BDL | BDL | BDL |
| 6 | Ghaggar at U/s Dhakanshu Nallah | 1699 | 6/4/21 | SW 3982 | BDL | BDL | 6.9 | 0.37 | BDL | BDL | BDL | BDL | BDL |
| 7 | Ghaggar at D/s Dhakanshu Nallah | 1700 | 6/4/21 | SW 3983 | BDL | BDL | 7.26 | 0.69 | BDL | BDL | BDL | BDL | BDL |
| 8 | Ghaggar at Rattanheri | 1473 | 12/4/21 | SW 3993 | BDL | BDL | 0.61 | 0.42 | BDL | BDL | BDL | BDL | BDL |
| 9 | Ghaggar before mixing with Sagar Para drain (U/s sagar para Drain) | 4159 | 12/4/21 | SW 3994 | BDL | BDL | 0.59 | 0.36 | BDL | BDL | BDL | BDL | BDL |
| 10 | Ghaggar after mixing with Sagar Para drain (D/s Sagar Para Drain) | 4160 | 12/4/21 | SW 3995 | BDL | BDL | 0.67 | 0.52 | BDL | BDL | BDL | BDL | BDL |
| 11 | Ghaggar at Khanauri | 1024 | 12/4/21 | SW 3998 | BDL | BDL | 0.75 | 0.35 | BDL | BDL | BDL | BDL | BDL |
| 12 | Ghaggar at Moonak | 1703 | 12/4/21 | SW 4000 | BDL | BDL | 0.76 | 0.37 | BDL | BDL | BDL | BDL | BDL |
| 13 | Ghaggar at U/s Sardulgarh | 1705 | 22/4/21 | SW 4064 | BDL | BDL | 0.58 | 0.25 | BDL | BDL | BDL | BDL | BDL |
| 14 | Ghaggar at D/s Sardulgarh | 1704 | 22/4/21 | SW 4065 | BDL | BDL | 0.64 | 0.34 | BDL | BDL | BDL | BDL | BDL |

Note. 1. BDL means Below Method Detection Limit

2. Pesticides i.e. Alpha HCH, Beta HCH, Gama HCH, Anilophos, Chloropyrifos, 4,4' DDT, OP-DDT, Endosulphan-1, Endosulphan-2, Dieldrin, Aldrin, Methyl Parathion & Malathion were BDL.