**Table 1**. Site locations and characteristics

| Site | Latitude | Longitude | District | Thana | Union | Soil region[a] |
|---|---|---|---|---|---|---|
| B2 | 22.56895 | 89.58131 | Bagerhat | Rampal | Rajnagar | **Eac:** Mixed Ganges River and Tidal Floodplains, non-saline |
| B3 | 22.86543 | 89.30501 | Jessore | Keshabpur | Gaurighona | **Dba** or **Fcb** |
| B8 | 22.72527 | 89.19153 | Satkhira | Tala | Khalishkhali | **Dba**: Old Southwestern Ganges River Meander Floodplains |
| B9 | 22.98833 | 89.48716 | Jessore | Abhaynagar | Subha Para | **Fcb**: Old Floodplain Basins, Basin Margins |
| P32 | 22.5037 | 89.46009 | Khulna | Dacope | Kamarkhola and Sutarkhali | **Ebc**: Southwestern Ganges Saline Tidal Floodplain |
| SB | 22.4591 | 89.46735 | Khulna | Dacope | Nalian Range | **Ebd**: Khulna Sundarbans Saline Tidal Floodplain |

[a] Soil physiographic region (Brammer, 2016).

**Table 2**. Element concentrations (mg/L) in water samples by sample type[a]

| Element | RP-11 count | RP-11 geomean | RP-11 sd | RP-5 count | RP-5 geomean | RP-5 sd | SB-11 count | SB-11 geomean | SB-11 sd | TC-11 count | TC-11 geomean | TC-11 sd | TC-5 count | TC-5 geomean | TC-5 sd |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH | 34 | 8.25 | 0.559 | 14 | 7.97 | 0.492 | 2 | 7.85 | 0.0707 | 8 | 7.7 | 0.214 | 5 | 7.25 | 0.263 |
| SpC | 34 | 1.02 | 1.51 | 14 | 5.64 | 9.39 | 2 | 1.63 | 0.686 | 8 | 1.73 | 1.61 | 5 | 12.5 | 14 |
| Al | 34 | 0.0297 | 0.00981 | 14 | 0.0534 | 0.0184 | 2 | 0.0298 | 0.00297 | 8 | 0.0315 | 0.0072 | 5 | 0.0546 | 0.0211 |
| As | 34 | 0.00081 | 0.00112 | 14 | 0.0083 | 0.031 | 2 | 0.00352 | 0.0013 | 8 | 0.00327 | 0.00348 | 5 | 0.00415 | 0.00745 |
| B | 34 | 0.0834 | 0.115 | 14 | 0.262 | 0.597 | 2 | 0.291 | 0.0176 | 8 | 0.169 | 0.141 | 5 | 1.15 | 0.981 |
| Ba | 34 | 0.521 | 1.16 | 14 | 0.175 | 0.124 | 2 | 1.93 | 0.905 | 8 | 2.21 | 1.86 | 5 | 0.138 | 0.136 |
| Ca | 34 | 42 | 16.5 | 14 | 146 | 144 | 2 | 43 | 9.41 | 8 | 51 | 13 | 5 | 145 | 85.4 |
| Co | 34 | 1.31E-05 | 1.35E-05 | 14 | 0.000438 | 0.000292 | 2 | 3.65E-05 | 8.56E-06 | 8 | 3.64E-05 | 3.54E-05 | 5 | 0.000333 | 0.000312 |
| Cr | 34 | 0.000491 | 0.000714 | 14 | 0.00146 | 0.000456 | 2 | 0.00171 | 0.000658 | 8 | 0.00143 | 0.00128 | 5 | 0.00202 | 0.000493 |
| Cu | 33 | 0.00143 | 0.00177 | 14 | 0.00453 | 0.00405 | 2 | 0.00215 | 0.00134 | 7 | 0.00237 | 0.000538 | 4 | 0.00908 | 0.0205 |
| Fe | 32 | 0.000787 | 0.00147 | 14 | 0.0257 | 0.0428 | 2 | 0.000346 | 0.000778 | 7 | 0.000712 | 0.000516 | 5 | 0.00356 | 0.00307 |
| K | 34 | 6.6 | 10.5 | 14 | 11 | 84.6 | 2 | 27.5 | 8.21 | 8 | 15.4 | 16.3 | 5 | 105 | 131 |
| Mg | 34 | 21.8 | 29.1 | 14 | 81.9 | 221 | 2 | 56.5 | 25.1 | 8 | 46.2 | 35.2 | 5 | 269 | 278 |
| Mn | 34 | 0.000724 | 0.0587 | 14 | 0.11 | 0.299 | 2 | 0.00126 | 0.000849 | 8 | 0.00115 | 0.000825 | 5 | 0.0421 | 0.12 |
| Mo | 34 | 0.000139 | 0.000143 | 14 | 0.00127 | 0.00139 | 2 | 0.000661 | 0.000163 | 8 | 0.000482 | 0.000536 | 5 | 0.00361 | 0.00229 |
| Na | 34 | 106 | 275 | 14 | 954 | 1900 | 2 | 494 | 232 | 8 | 292 | 343 | 5 | 2100 | 3030 |
| Ni | 34 | 0.000125 | 0.000203 | 13 | 0.00425 | 0.00416 | 2 | 0.000536 | 0.000104 | 8 | 0.000185 | 0.000386 | 5 | 0.00311 | 0.0027 |
| P | 20 | 0.00785 | 0.00981 | 14 | 0.194 | 0.416 | 2 | 0.00277 | 0.00622 | 5 | 0.00663 | 0.00628 | 5 | 0.0277 | 0.0104 |
| S | 34 | 6.94 | 17.7 | 14 | 21.3 | 239 | 2 | 40.3 | 19.1 | 8 | 20.6 | 27.5 | 5 | 167 | 217 |
| Sb | 34 | 5.26E-05 | 2.82E-05 | 14 | 0.000385 | 0.000316 | 2 | 0.000125 | 8.26E-05 | 8 | 0.000136 | 0.000151 | 5 | 0.000475 | 0.000133 |
| Se | 31 | 0.000111 | 0.00074 | 14 | 0.000656 | 0.00125 | 2 | 0.00224 | 0.00128 | 7 | 0.00189 | 0.00238 | 5 | 0.00116 | 0.00187 |
| Si | 34 | 0.965 | 1.06 | 14 | 4.75 | 6.57 | 2 | 3.15 | 0.0424 | 8 | 2.16 | 1.58 | 5 | 1.45 | 0.412 |
| Sr | 34 | 0.251 | 0.216 | 14 | 1 | 1.45 | 2 | 0.439 | 0.172 | 8 | 0.408 | 0.232 | 5 | 1.93 | 1.72 |
| V | 34 | 0.000752 | 0.000966 | 14 | 0.013 | 0.00724 | 2 | 0.00365 | 0.00162 | 8 | 0.00265 | 0.00396 | 5 | 0.0176 | 0.0137 |
| Zn | 34 | 0.0343 | 0.00769 | 13 | 0.0017 | 0.0011 | 2 | 0.0351 | 0.0119 | 8 | 0.0376 | 0.00783 | 5 | 0.00607 | 0.0331 |
| Cl | 34 | 160 | 438 | 14 | 1450 | 2960 | 2 | 756 | 386 | 8 | 452 | 543 | 5 | 3150 | 4510 |
| Br | 20 | 19.2 | 16.7 | 14 | 16.2 | 16.1 | 2 | 29.1 | 19.2 | 6 | 34.1 | 14.2 | 5 | 28.3 | 28 |
| NO3 | 3 | 2.58 | 1.19 | 5 | 1.07 | 3.45 | | | | 1 | 2.05 | | 1 | 0.138 | |
| DIC | 34 | 31.6 | 9.74 | 14 | 47.1 | 26.8 | 2 | 34.7 | 16 | 8 | 29.9 | 7.62 | 5 | 26.3 | 4.46 |
| DOC | 34 | 33.1 | 8.35 | 10 | 70.6 | 25.3 | 2 | 34.5 | 15.6 | 8 | 14.4 | 15.7 | 3 | 37.2 | 9.28 |

[a] SpC = specific conductivity in uS/cm, RP = rice paddy, TC = tidal channel, 11 = November, 5 = May, geomean = geometric mean, sd = standard deviation

**Table 2**. Element concentrations (mg/L) in extracts by sample type[a]

| | RP-11 count | RP-11 geomean | RP-11 sd | RP-5 count | RP-5 geomean | RP-5 sd | SB-11 (n=1) | SB-5 (n=1) | TC-11 count | TC-11 geomean | TC-11 sd | TC-5 count | TC-5 geomean | TC-5 sd |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH | 19 | 7.99 | 0.418 | 12 | 7.83 | 0.323 | 8.46 | 7.93 | 7 | 8.03 | 0.203 | 5 | 7.76 | 0.32 |
| SpC | 19 | 435 | 1410 | 12 | 623 | 1510 | 280 | 6010 | 7 | 2040 | 4090 | 5 | 3940 | 3750 |
| Al | 17 | 1.83 | 2.31 | 9 | 0.241 | 0.844 | 5.25 | 9.32 | 7 | 1.38 | 2.19 | 3 | 2.47 | 2.11 |
| As | 19 | 0.0284 | 0.0203 | 13 | 0.0216 | 0.0118 | 0.0252 | 0.0466 | 7 | 0.0282 | 0.0254 | 5 | 0.0526 | 0.0206 |
| B | 4 | 0.488 | 0.508 | 3 | 0.109 | 0.108 | | | 2 | 1.99 | 12 | | | |
| Ba | 19 | 0.133 | 0.0937 | 13 | 0.133 | 0.0409 | 0.062 | 0.231 | 7 | 0.158 | 0.165 | 5 | 0.318 | 0.255 |
| Ca | 17 | 71.6 | 119 | 12 | 145 | 64.6 | 28 | | 5 | 224 | 2480 | 2 | 637 | 1180 |
| Co | 19 | 0.0016 | 0.0031 | 10 | 0.000764 | 0.0013 | 0.000497 | 0.00303 | 7 | 0.00185 | 0.00218 | 5 | 0.00309 | 0.00507 |
| Cr | 17 | 0.0131 | 0.0226 | 13 | 0.00474 | 0.00484 | 0.00935 | 0.0152 | 7 | 0.0104 | 0.00805 | 4 | 0.0176 | 0.00351 |
| Cu | 15 | 0.0537 | 0.061 | 12 | 0.0534 | 0.0579 | 0.085 | 0.211 | 7 | 0.219 | 0.587 | 5 | 0.283 | 0.483 |
| Fe | 19 | | | 13 | 0.205 | 0.784 | 4.68 | 4.99 | 6 | 1.88 | 1.79 | 5 | 0.812 | 0.914 |
| K | 19 | 24.9 | 36 | 13 | 25.6 | 18.7 | 29.1 | 106 | 7 | 72.2 | 664 | 5 | 110 | 104 |
| Mg | 19 | 27.6 | 102 | 13 | 34.9 | 70.2 | 17.7 | 134 | 7 | 48.8 | 204 | 5 | 166 | 397 |
| Mn | 19 | 0.108 | 0.435 | 13 | 0.0993 | 0.379 | 0.046 | 2.49 | 7 | 0.675 | 7.25 | 5 | 2.73 | 6.63 |
| Mo | 19 | 0.0127 | 0.0156 | 13 | 0.00943 | 0.00553 | 0.0173 | 0.0209 | 7 | 0.0184 | 0.00966 | 5 | 0.0202 | 0.0135 |
| Na | 19 | 313 | 656 | 13 | 307 | 915 | 282 | 3770 | 7 | 1210 | 3200 | 5 | 1500 | 2380 |
| Ni | 19 | 0.017 | 0.0134 | 13 | 0.0177 | 0.013 | 0.0137 | 0.018 | 7 | 0.0186 | 0.00777 | 5 | 0.0303 | 0.0238 |
| P | 14 | 0.265 | 0.277 | 11 | 0.266 | 0.268 | | | 3 | 0.843 | 0.792 | 2 | 0.472 | 0.759 |
| S | 19 | 98.8 | 374 | 13 | 54.5 | 141 | 104 | 391 | 7 | 224 | 314 | 5 | 581 | 1350 |
| Sb | 19 | 0.00686 | 0.00669 | 13 | 0.00514 | 0.00443 | 0.00595 | 0.00321 | 7 | 0.0058 | 0.00415 | 5 | 0.00518 | 0.00288 |
| Se | 19 | 0.0175 | 0.0125 | 12 | 0.0123 | 0.0182 | 0.01 | 0.0493 | 7 | 0.0195 | 0.023 | 5 | 0.0533 | 0.0794 |
| Si | 15 | 11.9 | 6.78 | 12 | 14.5 | 5.41 | 19.4 | | 4 | 14.7 | 12.1 | 1 | 24.3 | |
| Sr | 18 | 0.366 | 0.936 | 13 | 0.556 | 0.246 | 0.147 | | 5 | 1.65 | 22.2 | 4 | 1.91 | 4.92 |
| V | 19 | 0.026 | 0.0159 | 13 | 0.0186 | 0.0182 | 0.0221 | 0.0649 | 7 | 0.0256 | 0.0279 | 5 | 0.0466 | 0.026 |
| Zn | 13 | 0.0331 | 0.0808 | 11 | 0.0106 | 0.147 | 0.0105 | 0.76 | 5 | 0.41 | 0.58 | 4 | 0.794 | 0.199 |
| Cl | 19 | 469 | 970 | 13 | 462 | 1490 | 425 | 5810 | 7 | 1800 | 4390 | 5 | 2290 | 3590 |
| Br | 9 | 26.4 | 16.7 | 3 | 38.3 | 137 | | 22.6 | 5 | 17.9 | 15.1 | 4 | 28.2 | 29.1 |
| NO3 | 6 | 8.26 | 12.6 | 8 | 29.5 | 42 | | 2.78 | 2 | 2.07 | 0.0348 | 5 | 3.03 | 4.03 |
| DIC | 19 | 43 | 28.1 | 13 | 53.8 | 22.3 | 61.7 | 51.9 | 7 | 51 | 20 | 5 | 47.5 | 11.3 |
| DOC | 19 | 244 | 113 | 13 | 229 | 97.3 | 206 | 196 | 7 | 213 | 91.7 | 5 | 305 | 191 |

[a] SpC in uS/cm, RP = rice paddy, TC = tidal channel, 11 = November, 5 = May, geomean = geometric mean, sd = standard deviation

**Table 4**. Concentrations in solid samples by sample type in ppm[a]

| Element | RP-11 count | RP-11 geomean | RP-11 sd | RP-5 count | RP-5 geomean | RP-5 sd | SB-11 (n=1) | SB-5 (n=1) | TC-11 count | TC-11 geomean | TC-11 sd | TC-5 count | TC-5 geomean | TC-5 sd |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Al | 18 | 63800 | 12700 | 12 | 57000 | 14200 | 77800 | 32500 | 7 | 57100 | 15500 | 6 | 59000 | 10200 |
| As | 18 | 1.63 | 0.939 | 12 | 1.53 | 1.71 | 3.45 | 0.645 | 7 | 1.09 | 1.46 | 6 | 1.66 | 0.431 |
| B | 18 | 828000 | 137000 | 12 | 791000 | 160000 | 1060000 | 874000 | 7 | 889000 | 99700 | 6 | 819000 | 134000 |
| Ba | 18 | 768 | 296 | 12 | 917 | 244 | 492 | 378 | 7 | 638 | 331 | 6 | 728 | 333 |
| Ca | 18 | 7600 | 4980 | 12 | 11200 | 9070 | 12300 | 9580 | 7 | 13400 | 4600 | 6 | 10000 | 3670 |
| Co | 18 | 11 | 9.49 | 12 | 8.19 | 3.44 | 12.2 | 8.45 | 7 | 8.56 | 3.27 | 6 | 8.95 | 1.94 |
| Cr | 18 | 55.3 | 11.3 | 12 | 47.9 | 17.8 | 94.1 | 18.2 | 7 | 39.7 | 22.6 | 6 | 51.5 | 10.8 |
| Cu | 18 | 29.4 | 7.16 | 12 | 27.5 | 16.8 | 37.5 | 23.4 | 7 | 27.3 | 8.35 | 6 | 28.3 | 9.78 |
| Fe | 18 | 30500 | 8000 | 12 | 27200 | 11700 | 47600 | 10900 | 7 | 25100 | 12200 | 6 | 28900 | 5510 |
| K | 18 | 36300 | 5340 | 12 | 36100 | 7660 | 33400 | 26700 | 7 | 33700 | 7990 | 6 | 34800 | 8540 |
| Mg | 18 | 10700 | 2090 | 12 | 10000 | 2580 | 13100 | 10500 | 7 | 11300 | 1450 | 6 | 10600 | 1640 |
| Mn | 18 | 432 | 169 | 12 | 408 | 143 | 693 | 417 | 7 | 592 | 144 | 6 | 455 | 40.1 |
| Mo | 18 | 1.96 | 2.22 | 12 | 1.8 | 1.59 | 12.5 | 0.945 | 7 | 1.84 | 1.27 | 6 | 1.28 | 0.785 |
| Na | 18 | 7990 | 1890 | 12 | 8090 | 1660 | 10700 | 11800 | 7 | 9530 | 2120 | 6 | 9850 | 1640 |
| Ni | 18 | 27.8 | 6.71 | 12 | 26.6 | 13.1 | 32.1 | 20.6 | 7 | 23.3 | 9.31 | 6 | 24.3 | 6.18 |
| P | 18 | 367 | 177 | 12 | 416 | 181 | 802 | 98.4 | 7 | 276 | 218 | 6 | 422 | 51.4 |
| S | 12 | 101 | 86.1 | 7 | 72.5 | 115 | 535 | 311 | 6 | 71.8 | 277 | 5 | 79.6 | 211 |
| Sb | 18 | 0.249 | 0.206 | 12 | 0.356 | 0.352 | 0.379 | 0.0246 | 7 | 0.109 | 0.173 | 6 | 0.275 | 0.193 |
| Se | 5 | 0.0912 | 0.157 | 2 | 0.209 | 0.315 | | | 1 | 0.286 | | 3 | 0.205 | 0.35 |
| Si | 18 | 227000 | 49400 | 12 | 224000 | 39400 | 330000 | 73700 | 7 | 167000 | 85500 | 6 | 209000 | 21700 |
| Sr | 18 | 82.9 | 15 | 12 | 84.3 | 14.3 | 121 | 88.7 | 7 | 95.8 | 13.7 | 6 | 82.4 | 13.2 |
| V | 18 | 73.1 | 26 | 12 | 78 | 25.2 | 103 | 21.6 | 7 | 40.5 | 39.7 | 6 | 72.7 | 15.6 |
| Zn | 18 | 77.8 | 13.5 | 12 | 72.2 | 19.4 | 83.4 | 53.7 | 7 | 70 | 13.2 | 6 | 73.5 | 10.3 |
| $H_2O^+$ | 16 | 73700 | 13100 | 10 | 78600 | 17900 | 60000 | 61000 | 5 | 68600 | 14900 | 5 | 73600 | 10200 |
| $H_2O^-$ | 16 | 23400 | 9020 | 10 | 25200 | 17800 | 22000 | 38000 | 5 | 19100 | 11800 | 5 | 29000 | 20100 |

[a] RP = rice paddy, TC = tidal channel, 11 = November, 5 = May, geomean = geometric mean, sd = standard deviation

Table 5: Measured grain sizes of select samples[a]

| Sample Name | Median (μm) | Mode (μm) | Volume-Weighted Mean (μm) |
|---|---|---|---|
| BEMS_09_TC_01_Nov | 16.37 | 14.98 | 28.44 |
| BEMS_08_RP_06M_May | 36.29 | 53.68 | 46.55 |
| SB_SB_1_May | 36.02 | 57.87 | 47.97 |
| BEMS_03_RP_07_ Nov | 21.41 | 23.15 | 43.16 |
| BEMS_08_TC_01_ May | 9.89 | 6.72 | 20.55 |
| BEMS_08_RP_06M_ Nov | 39.67 | 52.41 | 60.23 |
| BEMS_08_TC_02_ May | 22.95 | 34.62 | 30.33 |
| BEMS_03_TC_01_ May | 8.44 | 6.45 | 14.52 |

[a] Sample Name given as Site_Sample type_Sample #_Month,
TC = tidal channel, RP = rice paddy, SB = Sundarbans

Table 6: Concentrations of oxides in solid samples[a]

| Oxide | RP mean[b] | St Dev | TC mean | St Dev | Avg. UCC[c] | RP anhydrous mean | StDev | TC anhydrous mean | StDev |
|---|---|---|---|---|---|---|---|---|---|
| $SiO_2$ | 59.4 | 3.75 | 57.2 | 4.46 | 67.1 | 67.2 | 3.84 | 65.3 | 3.2 |
| $Al_2O_3$ | 14 | 2.37 | 14.3 | 1.61 | 15.5 | 15.8 | 2.64 | 16.4 | 2.01 |
| FeO | 1.35 | 0.317 | 1.58 | 0.44 | 5.07 | 1.54 | 0.36 | 1.81 | 0.514 |
| MgO | 5.07 | 1.14 | 5.1 | 0.888 | 2.5 | 5.76 | 1.3 | 5.85 | 1.13 |
| CaO | 4.62 | 1.11 | 5.01 | 0.732 | 3.61 | 5.23 | 1.24 | 5.73 | 0.862 |
| $Na_2O$ | 2.04 | 0.36 | 2.25 | 0.272 | 3.29 | 2.31 | 0.406 | 2.58 | 0.341 |
| $K_2O$ | 1.46 | 0.87 | 1.91 | 0.869 | 2.82 | 1.66 | 1.02 | 2.17 | 0.938 |
| $P_2O_5$ | 0.117 | 0.0368 | 0.121 | 0.0314 | 0.15 | 0.133 | 0.0409 | 0.139 | 0.036 |
| $H_2O^+$ | 8.78 | 1.53 | 8.91 | 1.52 | | | | | |
| $H_2O^-$ | 3.01 | 1.35 | 3.59 | 2.1 | | | | | |
| Sum | 100 | | 100 | | | 100 | | 100 | |

[a] Four samples with anomalously low $SiO_2$ were not included in these summary statistics. Concentrations of oxides normalized to 100%.

[b] Mean values are 5% trimmed mean, RP = rice paddy soil, TC = tidal channel sediment

[c] Rudnick and Gao (2003)