

1. Lampiran 1. Beban Pada Point Load

| Skenario 1 | | | Skenario 2 | | | selisih nilai BOD akibat sampah di dalam air limbah |
|------------|-----------|---------------|------------|-----------|-------------|---|
| BOD | Beban BOD | Beban BOD | BOD | Beban BOD | Beban BOD | |
| mg/L | mg/det | g/hari | mg/L | mg/det | g/hari | % |
| 449.77 | 4947.47 | 427,461.41 | 501.89 | 5520.79 | 476996.26 | 11.59 |
| 449.77 | 3148.39 | 272,020.90 | 501.89 | 3513.23 | 303543.07 | 11.59 |
| 449.77 | 9445.17 | 816,062.69 | 501.89 | 10539.69 | 910629.22 | 11.59 |
| 449.77 | 18890.34 | 1,632,125.38 | 540.94 | 22719.48 | 1962963.07 | 20.27 |
| 423.32 | 4487.19 | 387,693.39 | 509.00 | 5395.40 | 466162.56 | 20.24 |
| 449.77 | 4047.93 | 349,741.15 | 501.89 | 4517.01 | 390269.66 | 11.59 |
| 449.77 | 11244.25 | 971,503.20 | 501.89 | 12547.25 | 1084082.40 | 11.59 |
| 449.77 | 5397.24 | 466,321.54 | 540.94 | 6491.28 | 560846.59 | 20.27 |
| 434.49 | 24331.44 | 2,102,236.42 | 517.47 | 28978.32 | 2503726.85 | 19.10 |
| 449.77 | 4947.47 | 427,461.41 | 540.94 | 5950.34 | 514109.38 | 20.27 |
| 449.77 | 2248.85 | 194,300.64 | 501.89 | 2509.45 | 216816.48 | 11.59 |
| 449.77 | 899.54 | 77,720.26 | 540.94 | 1081.88 | 93474.43 | 20.27 |
| 245.03 | 1470.18 | 127,023.55 | 292.19 | 1753.14 | 151471.30 | 19.25 |
| 449.77 | 8995.40 | 777,202.56 | 527.83 | 10556.60 | 912090.24 | 17.36 |
| 23.84 | 4.77 | 411.96 | 23.84 | 4.77 | 411.96 | 0.00 |
| 449.77 | 8095.86 | 699,482.30 | 527.83 | 9500.94 | 820881.22 | 17.36 |
| 437.43 | 128604.42 | 11,111,421.89 | 528.82 | 155473.08 | 13432874.11 | 20.89 |
| 28.21 | 2369.64 | 204,736.90 | 28.21 | 2369.64 | 204736.90 | 0.00 |
| 241.17 | 43410.60 | 3,750,675.84 | 254.72 | 45849.60 | 3961405.44 | 5.62 |
| 11.07 | 1129.14 | 97,557.70 | 11.07 | 1129.14 | 97557.70 | 0.00 |
| 672.089 | 106190.06 | 9,174,821.36 | 887.75 | 140264.50 | 12118852.80 | 32.09 |
| 63.4 | 126800.00 | 10,955,520.00 | 63.40 | 126800.00 | 10955520.00 | 0.00 |
| 126.95 | 507800.00 | 43,873,920.00 | 126.95 | 507800.00 | 43873920.00 | 0.00 |
| 31.7 | 31700.00 | 2,738,880.00 | 31.70 | 31700.00 | 2738880.00 | 0.00 |
| 449.77 | 13493.10 | 1,165,803.84 | 650.38 | 19511.40 | 1685784.96 | 44.60 |

2. Lampiran 2 Skenario 1

| RCH | ELE | BEGIN X-SECT | FLOW CMS | POINT | Vel MPS | Depth M | Temperatur | RCH | TEMP | DO | BOD |
|-----|-----|--------------|----------|-------|---------|---------|------------|------|--------|------|-------|
| 1 | 1 | 51.86 | 18.50 | 0.00 | 0.511 | 2.639 | 28.230 | 1.1 | 28.230 | 3.21 | 13.31 |
| 1 | 2 | 50.93 | 18.51 | 0.01 | 0.511 | 2.640 | 28.260 | 1.2 | 28.260 | 3.10 | 13.46 |
| 1 | 3 | 50.00 | 18.52 | 0.01 | 0.511 | 2.640 | 28.300 | 1.3 | 28.300 | 2.99 | 13.49 |
| 1 | 4 | 49.08 | 18.52 | 0.00 | 0.511 | 2.640 | 28.330 | 1.4 | 28.330 | 2.88 | 13.37 |
| 1 | 5 | 48.15 | 18.52 | 0.00 | 0.511 | 2.640 | 28.360 | 1.5 | 28.360 | 2.77 | 13.24 |
| 1 | 6 | 47.23 | 18.52 | 0.00 | 0.511 | 2.640 | 28.390 | 1.6 | 28.390 | 2.67 | 13.12 |
| 1 | 7 | 46.30 | 18.52 | 0.00 | 0.511 | 2.640 | 28.420 | 1.7 | 28.420 | 2.57 | 13.00 |
| 1 | 8 | 45.37 | 18.52 | 0.00 | 0.511 | 2.640 | 28.450 | 1.8 | 28.450 | 2.48 | 12.88 |
| 1 | 9 | 44.45 | 18.52 | 0.00 | 0.511 | 2.640 | 28.490 | 1.9 | 28.490 | 2.38 | 12.76 |
| 1 | 10 | 43.52 | 18.52 | 0.00 | 0.511 | 2.640 | 28.520 | 1.10 | 28.520 | 2.29 | 12.71 |
| 1 | 11 | 42.60 | 18.54 | 0.02 | 0.511 | 2.642 | 28.550 | 1.11 | 28.550 | 2.20 | 13.09 |
| 1 | 12 | 41.67 | 18.54 | 0.00 | 0.511 | 2.642 | 28.580 | 1.12 | 28.580 | 2.10 | 13.11 |
| 1 | 13 | 40.74 | 18.58 | 0.04 | 0.512 | 2.646 | 28.610 | 1.13 | 28.610 | 2.00 | 14.04 |
| 1 | 14 | 39.82 | 18.59 | 0.01 | 0.512 | 2.647 | 28.640 | 1.14 | 28.640 | 1.89 | 14.14 |
| 1 | 15 | 38.89 | 18.59 | 0.00 | 0.512 | 2.647 | 28.670 | 1.15 | 28.670 | 1.79 | 14.01 |
| 1 | 16 | 37.97 | 18.59 | 0.00 | 0.512 | 2.647 | 28.700 | 1.16 | 28.700 | 1.70 | 13.88 |
| 1 | 17 | 37.04 | 18.59 | 0.00 | 0.512 | 2.647 | 28.730 | 1.17 | 28.730 | 1.60 | 13.75 |
| 1 | 18 | 36.11 | 17.79 | -0.80 | 0.505 | 2.577 | 28.760 | 1.18 | 28.760 | 1.51 | 13.65 |
| 1 | 19 | 35.19 | 17.80 | 0.01 | 0.505 | 2.578 | 28.790 | 1.19 | 28.790 | 1.42 | 13.74 |
| 2 | 1 | 34.26 | 17.80 | 0.00 | 0.438 | 1.780 | 28.830 | 2.1 | 28.830 | 1.30 | 13.63 |
| 2 | 2 | 33.34 | 17.83 | 0.03 | 0.438 | 1.782 | 28.880 | 2.2 | 28.880 | 1.16 | 14.06 |
| 2 | 3 | 32.41 | 17.84 | 0.01 | 0.438 | 1.782 | 28.930 | 2.3 | 28.930 | 1.02 | 14.17 |
| 2 | 4 | 31.48 | 17.84 | 0.00 | 0.438 | 1.782 | 28.980 | 2.4 | 28.980 | 0.89 | 13.96 |
| 2 | 5 | 30.56 | 17.84 | 0.00 | 0.438 | 1.782 | 29.030 | 2.5 | 29.030 | 0.77 | 13.76 |
| 2 | 6 | 29.63 | 17.84 | 0.00 | 0.438 | 1.782 | 29.080 | 2.6 | 29.080 | 0.65 | 13.56 |
| 2 | 7 | 28.71 | 17.84 | 0.00 | 0.438 | 1.782 | 29.130 | 2.7 | 29.130 | 0.53 | 13.37 |
| 2 | 8 | 27.78 | 17.84 | 0.00 | 0.438 | 1.782 | 29.180 | 2.8 | 29.180 | 0.42 | 13.31 |
| 3 | 1 | 26.85 | 17.89 | 0.06 | 0.451 | 2.142 | 29.230 | 3.1 | 29.230 | 0.25 | 14.50 |
| 3 | 2 | 25.93 | 17.89 | 0.00 | 0.451 | 2.142 | 29.270 | 3.2 | 29.270 | 0.09 | 14.32 |

| RCH | ELE | BEGIN X-SECT | FLOW CMS | POINT | Vel MPS | Depth M | Temperatur | RCH | TEMP | DO | BOD |
|-----|-----|--------------|----------|-------|---------|---------|------------|------|--------|------|-------|
| 3 | 3 | 25.00 | 17.90 | 0.01 | 0.452 | 2.143 | 29.300 | 3.3 | 29.300 | 0.00 | 14.40 |
| 3 | 4 | 24.08 | 17.91 | 0.00 | 0.452 | 2.144 | 29.340 | 3.4 | 29.340 | 0.00 | 14.31 |
| 3 | 5 | 23.15 | 17.91 | 0.00 | 0.452 | 2.144 | 29.380 | 3.5 | 29.380 | 0.00 | 14.16 |
| 3 | 6 | 22.22 | 17.92 | 0.01 | 0.452 | 2.144 | 29.420 | 3.6 | 29.420 | 0.00 | 14.09 |
| 3 | 7 | 21.30 | 17.94 | 0.02 | 0.452 | 2.146 | 29.460 | 3.7 | 29.460 | 0.00 | 14.37 |
| 3 | 8 | 20.37 | 17.94 | 0.00 | 0.452 | 2.146 | 29.490 | 3.8 | 29.490 | 0.00 | 14.15 |
| 3 | 9 | 19.45 | 17.94 | 0.00 | 0.452 | 2.146 | 29.530 | 3.9 | 29.530 | 0.00 | 13.95 |
| 3 | 10 | 18.52 | 17.94 | 0.00 | 0.452 | 2.146 | 29.570 | 3.10 | 29.570 | 0.00 | 13.79 |
| 4 | 1 | 17.59 | 17.96 | 0.02 | 0.333 | 3.207 | 29.610 | 4.1 | 29.610 | 0.00 | 14.03 |
| 4 | 2 | 16.67 | 17.96 | 0.00 | 0.333 | 3.207 | 29.640 | 4.2 | 29.640 | 0.00 | 13.82 |
| 4 | 3 | 15.74 | 17.96 | 0.00 | 0.333 | 3.207 | 29.670 | 4.3 | 29.670 | 0.00 | 13.62 |
| 4 | 4 | 14.82 | 17.96 | 0.00 | 0.333 | 3.207 | 29.710 | 4.4 | 29.710 | 0.00 | 13.44 |
| 4 | 5 | 13.89 | 17.96 | 0.00 | 0.333 | 3.207 | 29.740 | 4.5 | 29.740 | 0.00 | 13.40 |
| 4 | 6 | 12.96 | 16.14 | -1.82 | 0.322 | 3.205 | 29.770 | 4.6 | 29.770 | 0.00 | 14.26 |
| 5 | 1 | 12.04 | 16.43 | 0.29 | 0.368 | 2.227 | 29.790 | 5.1 | 29.790 | 0.00 | 21.79 |
| 5 | 2 | 11.11 | 16.43 | 0.00 | 0.368 | 2.227 | 29.830 | 5.2 | 29.830 | 0.00 | 21.45 |
| 5 | 3 | 10.19 | 16.52 | 0.08 | 0.369 | 2.234 | 29.870 | 5.3 | 29.870 | 0.00 | 21.42 |
| 5 | 4 | 9.26 | 16.70 | 0.18 | 0.370 | 2.245 | 29.900 | 5.4 | 29.900 | 0.00 | 23.31 |
| 5 | 5 | 8.33 | 16.80 | 0.10 | 0.371 | 2.257 | 29.930 | 5.5 | 29.930 | 0.00 | 23.85 |
| 6 | 1 | 7.41 | 16.96 | 0.16 | 0.333 | 1.963 | 29.950 | 6.1 | 29.950 | 0.00 | 30.76 |
| 6 | 2 | 6.48 | 18.96 | 2.00 | 0.346 | 2.102 | 29.910 | 6.2 | 29.910 | 0.00 | 33.55 |
| 6 | 3 | 5.56 | 18.96 | 0.00 | 0.346 | 2.102 | 29.920 | 6.3 | 29.920 | 0.00 | 35.26 |
| 6 | 4 | 4.63 | 22.96 | 4.00 | 0.371 | 2.365 | 29.830 | 6.4 | 29.830 | 0.00 | 48.07 |
| 6 | 5 | 3.70 | 23.96 | 1.00 | 0.377 | 2.428 | 29.840 | 6.5 | 29.840 | 0.00 | 46.97 |
| 6 | 6 | 2.78 | 23.99 | 0.03 | 0.377 | 2.430 | 29.870 | 6.6 | 29.870 | 0.00 | 46.94 |
| 6 | 7 | 1.85 | 23.99 | 0.00 | 0.377 | 2.430 | 29.900 | 6.7 | 29.900 | 0.00 | 46.33 |
| 6 | 8 | 0.93 | 23.99 | 0.00 | 0.377 | 2.430 | 29.930 | 6.8 | 29.930 | 0.00 | 45.88 |

3. Lampiran 3 Skenario 2

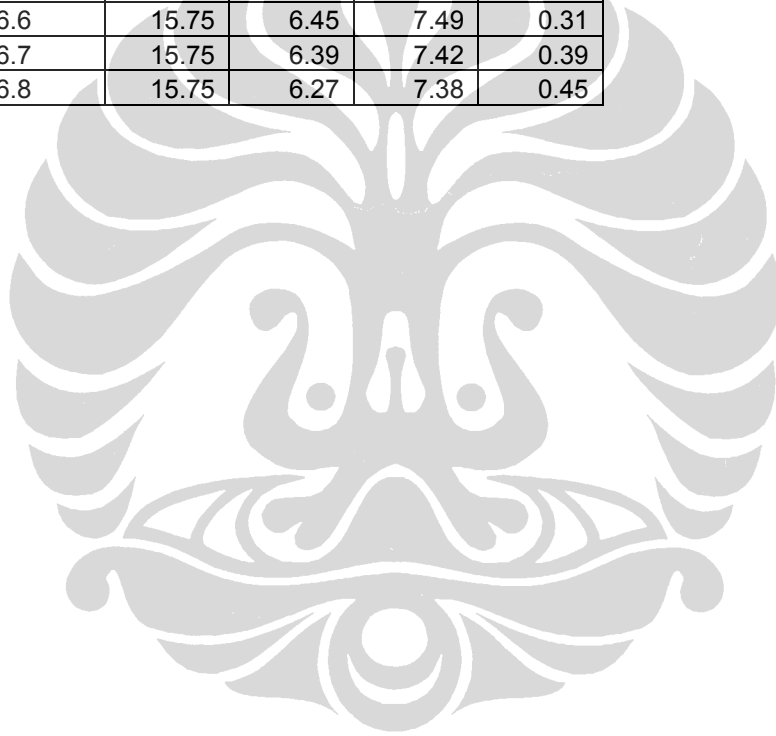
| HYDRAULICS SUMMARY | | | | | | | WATER QUALITY VARIABLES | | | |
|--------------------|-----|--------------|----------|-------|---------|---------|-------------------------|-----------|------|-------|
| RCH | ELE | BEGIN X-SECT | FLOW CMS | POINT | Vel MPS | Depth M | RCH | TEMP | DO | BOD |
| | | | | | | | | Derajat C | Mg/L | Mg/L |
| 1 | 1 | 51.86 | 18.50 | 0.00 | 0.511 | 2.639 | 1.1 | 28.23 | 3.21 | 13.31 |
| 1 | 2 | 50.93 | 18.51 | 0.01 | 0.511 | 2.640 | 1.2 | 28.26 | 3.10 | 13.43 |
| 1 | 3 | 50.00 | 18.52 | 0.01 | 0.511 | 2.640 | 1.3 | 28.30 | 2.99 | 13.44 |
| 1 | 4 | 49.08 | 18.52 | 0.00 | 0.511 | 2.640 | 1.4 | 28.33 | 2.88 | 13.32 |
| 1 | 5 | 48.15 | 18.52 | 0.00 | 0.511 | 2.640 | 1.5 | 28.36 | 2.78 | 13.19 |
| 1 | 6 | 47.23 | 18.52 | 0.00 | 0.511 | 2.640 | 1.6 | 28.39 | 2.67 | 13.07 |
| 1 | 7 | 46.30 | 18.52 | 0.00 | 0.511 | 2.640 | 1.7 | 28.42 | 2.58 | 12.95 |
| 1 | 8 | 45.37 | 18.52 | 0.00 | 0.511 | 2.640 | 1.8 | 28.45 | 2.48 | 12.84 |
| 1 | 9 | 44.45 | 18.52 | 0.00 | 0.511 | 2.640 | 1.9 | 28.49 | 2.39 | 12.73 |
| 1 | 10 | 43.52 | 18.52 | 0.00 | 0.511 | 2.640 | 1.10 | 28.52 | 2.3 | 12.67 |
| 1 | 11 | 42.60 | 18.54 | 0.02 | 0.511 | 2.642 | 1.11 | 28.55 | 2.2 | 12.98 |
| 1 | 12 | 41.67 | 18.54 | 0.00 | 0.511 | 2.642 | 1.12 | 28.58 | 2.11 | 12.94 |
| 1 | 13 | 40.74 | 18.58 | 0.04 | 0.512 | 2.646 | 1.13 | 28.61 | 2.01 | 13.72 |
| 1 | 14 | 39.82 | 18.59 | 0.01 | 0.512 | 2.647 | 1.14 | 28.64 | 1.91 | 13.79 |
| 1 | 15 | 38.89 | 18.59 | 0.00 | 0.512 | 2.647 | 1.15 | 28.67 | 1.81 | 13.66 |
| 1 | 16 | 37.97 | 18.59 | 0.00 | 0.512 | 2.647 | 1.16 | 28.70 | 1.72 | 13.54 |
| 1 | 17 | 37.04 | 18.59 | 0.00 | 0.512 | 2.647 | 1.17 | 28.73 | 1.63 | 13.41 |
| 1 | 18 | 36.11 | 17.79 | -0.80 | 0.505 | 2.577 | 1.18 | 28.76 | 1.54 | 13.31 |
| 1 | 19 | 35.19 | 17.80 | 0.01 | 0.505 | 2.578 | 1.19 | 28.79 | 1.45 | 13.38 |
| 2 | 1 | 34.26 | 17.80 | 0.00 | 0.438 | 1.780 | 2.1 | 28.83 | 1.34 | 13.26 |
| 2 | 2 | 33.34 | 17.83 | 0.03 | 0.438 | 1.782 | 2.2 | 28.88 | 1.21 | 13.64 |
| 2 | 3 | 32.41 | 17.84 | 0.01 | 0.438 | 1.782 | 2.3 | 28.93 | 1.08 | 13.7 |
| 2 | 4 | 31.48 | 17.84 | 0.00 | 0.438 | 1.782 | 2.4 | 28.98 | 0.96 | 13.5 |
| 2 | 5 | 30.56 | 17.84 | 0.00 | 0.438 | 1.782 | 2.5 | 29.03 | 0.84 | 13.3 |
| 2 | 6 | 29.63 | 17.84 | 0.00 | 0.438 | 1.782 | 2.6 | 29.08 | 0.73 | 13.1 |
| 2 | 7 | 28.71 | 17.84 | 0.00 | 0.438 | 1.782 | 2.7 | 29.13 | 0.62 | 12.92 |
| 2 | 8 | 27.78 | 17.84 | 0.00 | 0.438 | 1.782 | 2.8 | 29.18 | 0.51 | 12.87 |

| HYDRAULICS SUMMARY | | | | | | | WATER QUALITY VARIABLES | | | |
|--------------------|-----|--------------|----------|-------|---------|---------|-------------------------|-------|------|-------|
| RCH | ELE | BEGIN X-SECT | FLOW CMS | POINT | Vel MPS | Depth M | RCH | TEMP | DO | BOD |
| 3 | 1 | 26.85 | 17.89 | 0.06 | 0.451 | 2.142 | 3.1 | 29.23 | 0.35 | 13.81 |
| 3 | 2 | 25.93 | 17.89 | 0.00 | 0.451 | 2.142 | 3.2 | 29.27 | 0.19 | 13.64 |
| 3 | 3 | 25.00 | 17.90 | 0.01 | 0.452 | 2.143 | 3.3 | 29.30 | 0.05 | 13.68 |
| 3 | 4 | 24.08 | 17.91 | 0.00 | 0.452 | 2.144 | 3.4 | 29.34 | 0.00 | 13.58 |
| 3 | 5 | 23.15 | 17.91 | 0.00 | 0.452 | 2.144 | 3.5 | 29.38 | 0.00 | 13.44 |
| 3 | 6 | 22.22 | 17.92 | 0.01 | 0.452 | 2.144 | 3.6 | 29.42 | 0.00 | 13.36 |
| 3 | 7 | 21.30 | 17.94 | 0.02 | 0.452 | 2.146 | 3.7 | 29.46 | 0.00 | 13.57 |
| 3 | 8 | 20.37 | 17.94 | 0.00 | 0.452 | 2.146 | 3.8 | 29.49 | 0.00 | 13.36 |
| 3 | 9 | 19.45 | 17.94 | 0.00 | 0.452 | 2.146 | 3.9 | 29.53 | 0.00 | 13.17 |
| 3 | 10 | 18.52 | 17.94 | 0.00 | 0.452 | 2.146 | 3.10 | 29.57 | 0.00 | 13.02 |
| 4 | 1 | 17.59 | 17.96 | 0.02 | 0.333 | 3.207 | 4.1 | 29.61 | 0.00 | 13.20 |
| 4 | 2 | 16.67 | 17.96 | 0.00 | 0.333 | 3.207 | 4.2 | 29.64 | 0.00 | 12.99 |
| 4 | 3 | 15.74 | 17.96 | 0.00 | 0.333 | 3.207 | 4.3 | 29.67 | 0.00 | 12.81 |
| 4 | 4 | 14.82 | 17.96 | 0.00 | 0.333 | 3.207 | 4.4 | 29.71 | 0.00 | 12.63 |
| 4 | 5 | 13.89 | 17.96 | 0.00 | 0.333 | 3.207 | 4.5 | 29.74 | 0.00 | 12.57 |
| 4 | 6 | 12.96 | 16.14 | -1.82 | 0.322 | 3.205 | 4.6 | 29.77 | 0.00 | 13.26 |
| 5 | 1 | 12.04 | 16.43 | 0.29 | 0.368 | 2.227 | 5.1 | 29.79 | 0.00 | 19.42 |
| 5 | 2 | 11.11 | 16.43 | 0.00 | 0.368 | 2.227 | 5.2 | 29.83 | 0.00 | 19.12 |
| 5 | 3 | 10.19 | 16.52 | 0.08 | 0.369 | 2.234 | 5.3 | 29.87 | 0.00 | 19.12 |
| 5 | 4 | 9.26 | 16.70 | 0.18 | 0.37 | 2.245 | 5.4 | 29.90 | 0.00 | 20.91 |
| 5 | 5 | 8.33 | 16.80 | 0.10 | 0.371 | 2.257 | 5.5 | 29.93 | 0.00 | 21.29 |
| 6 | 1 | 7.41 | 16.96 | 0.16 | 0.333 | 1.963 | 6.1 | 29.95 | 0.00 | 26.61 |
| 6 | 2 | 6.48 | 18.96 | 2.00 | 0.346 | 2.102 | 6.2 | 29.91 | 0.00 | 29.84 |
| 6 | 3 | 5.56 | 18.96 | 0.00 | 0.346 | 2.102 | 6.3 | 29.92 | 0.00 | 31.71 |
| 6 | 4 | 4.63 | 22.96 | 4.00 | 0.371 | 2.365 | 6.4 | 29.83 | 0.00 | 45.06 |
| 6 | 5 | 3.70 | 23.96 | 1.00 | 0.377 | 2.428 | 6.5 | 29.84 | 0.00 | 44.06 |
| 6 | 6 | 2.78 | 23.99 | 0.03 | 0.377 | 2.430 | 6.6 | 29.87 | 0.00 | 43.86 |
| 6 | 7 | 1.85 | 23.99 | 0.00 | 0.377 | 2.430 | 6.7 | 29.90 | 0.00 | 43.28 |
| 6 | 8 | 0.93 | 23.99 | 0.00 | 0.377 | 2.430 | 6.8 | 29.93 | 0.00 | 42.8 |

4. Lampiran 4 Skenario 3

| Reach Element | Debit | BOD | Do sat | DO |
|---------------|---------------------|-------|--------|------|
| | m ³ /sec | mg/l | mg/l | mg/l |
| 1.1 | 18.500 | 13.28 | 7.76 | 3.21 |
| 1.2 | 18.500 | 13.15 | 7.76 | 3.1 |
| 1.3 | 18.500 | 13.03 | 7.75 | 3 |
| 1.4 | 18.500 | 12.91 | 7.75 | 2.89 |
| 1.5 | 18.500 | 12.79 | 7.75 | 2.79 |
| 1.6 | 18.500 | 12.67 | 7.74 | 2.7 |
| 1.7 | 18.500 | 12.55 | 7.74 | 2.6 |
| 1.8 | 18.500 | 12.43 | 7.73 | 2.51 |
| 1.9 | 18.500 | 12.32 | 7.73 | 2.43 |
| 1.10 | 18.500 | 12.20 | 7.72 | 2.34 |
| 1.11 | 18.500 | 12.09 | 7.72 | 2.26 |
| 1.12 | 18.500 | 11.97 | 7.72 | 2.18 |
| 1.13 | 18.500 | 11.86 | 7.71 | 2.1 |
| 1.14 | 18.500 | 11.75 | 7.71 | 2.02 |
| 1.15 | 18.500 | 11.64 | 7.7 | 1.95 |
| 1.16 | 18.500 | 11.53 | 7.7 | 1.88 |
| 1.17 | 18.500 | 11.42 | 7.7 | 1.81 |
| 1.18 | 17.700 | 11.31 | 7.69 | 1.74 |
| 1.19 | 17.700 | 11.2 | 7.69 | 1.68 |
| 2.1 | 17.700 | 11.07 | 7.68 | 1.6 |
| 2.2 | 17.700 | 10.91 | 7.68 | 1.52 |
| 2.3 | 17.700 | 10.75 | 7.67 | 1.43 |
| 2.4 | 17.700 | 10.59 | 7.66 | 1.36 |
| 2.5 | 17.700 | 10.43 | 7.66 | 1.29 |
| 2.6 | 17.700 | 10.28 | 7.65 | 1.22 |
| 2.7 | 17.700 | 10.12 | 7.64 | 1.16 |
| 2.8 | 17.700 | 9.97 | 7.64 | 1.09 |
| 3.1 | 17.700 | 9.81 | 7.63 | 1 |
| 3.2 | 17.700 | 9.66 | 7.63 | 0.91 |
| 3.3 | 17.700 | 9.52 | 7.62 | 0.82 |
| 3.4 | 17.700 | 9.38 | 7.62 | 0.74 |
| 3.5 | 17.700 | 9.23 | 7.61 | 0.66 |
| 3.6 | 17.700 | 9.09 | 7.61 | 0.59 |
| 3.7 | 17.700 | 8.96 | 7.6 | 0.52 |
| 3.8 | 17.700 | 8.82 | 7.6 | 0.45 |
| 3.9 | 17.700 | 8.69 | 7.59 | 0.39 |
| 3.10 | 17.700 | 8.55 | 7.59 | 0.32 |
| 4.1 | 17.700 | 8.39 | 7.58 | 0.23 |
| 4.2 | 17.700 | 8.26 | 7.58 | 0.15 |
| 4.3 | 17.700 | 8.13 | 7.57 | 0.06 |
| 4.4 | 17.700 | 8 | 7.57 | 0.00 |

| Reach Element | Debit | BOD | Do sat | DO |
|----------------------|--------------|------------|---------------|-----------|
| 4.5 | 17.700 | 7.87 | 7.56 | 0.00 |
| 4.6 | 15.88 | 7.75 | 7.56 | 0.00 |
| 5.1 | 15.88 | 7.62 | 7.56 | 0.00 |
| 5.2 | 15.88 | 7.48 | 7.55 | 0.00 |
| 5.3 | 15.88 | 7.35 | 7.55 | 0.00 |
| 5.4 | 15.88 | 7.22 | 7.54 | 0.00 |
| 5.5 | 15.88 | 7.1 | 7.54 | 0.00 |
| 6.1 | 15.75 | 7 | 7.53 | 0.00 |
| 6.2 | 15.75 | 6.88 | 7.53 | 0.00 |
| 6.3 | 15.75 | 6.77 | 7.52 | 0.04 |
| 6.4 | 15.75 | 6.66 | 7.51 | 0.13 |
| 6.5 | 15.75 | 6.55 | 7.51 | 0.22 |
| 6.6 | 15.75 | 6.45 | 7.49 | 0.31 |
| 6.7 | 15.75 | 6.39 | 7.42 | 0.39 |
| 6.8 | 15.75 | 6.27 | 7.38 | 0.45 |



5. Lampiran 5 Skenario 4a

| HYDRAULICS SUMMARY | | | | | | | | WATER QUALITY VARIABLES | | | | |
|--------------------|-----|--------------|----------|-------|---------|---------|------------|-------------------------|------|-------|--------|--|
| RCH | ELE | BEGIN X-SECT | FLOW CMS | POINT | Vel MPS | Depth M | Temperatur | RCH | DO | BOD | DO Sat | |
| 1 | 1 | 51.86 | 18.50 | 0.00 | 0.511 | 2.639 | 28.230 | 1.1 | 3.21 | 13.29 | 7.76 | |
| 1 | 2 | 50.93 | 18.51 | 0.01 | 0.511 | 2.640 | 28.260 | 1.2 | 3.10 | 13.28 | 7.76 | |
| 1 | 3 | 50.00 | 18.52 | 0.01 | 0.511 | 2.640 | 28.300 | 1.3 | 2.99 | 13.23 | 7.75 | |
| 1 | 4 | 49.08 | 18.52 | 0.00 | 0.511 | 2.640 | 28.330 | 1.4 | 2.89 | 13.11 | 7.75 | |
| 1 | 5 | 48.15 | 18.52 | 0.00 | 0.511 | 2.640 | 28.360 | 1.5 | 2.79 | 12.98 | 7.75 | |
| 1 | 6 | 47.23 | 18.52 | 0.00 | 0.511 | 2.640 | 28.390 | 1.6 | 2.69 | 12.86 | 7.74 | |
| 1 | 7 | 46.30 | 18.52 | 0.00 | 0.511 | 2.640 | 28.420 | 1.7 | 2.59 | 12.74 | 7.74 | |
| 1 | 8 | 45.37 | 18.52 | 0.00 | 0.511 | 2.640 | 28.450 | 1.8 | 2.50 | 12.62 | 7.73 | |
| 1 | 9 | 44.45 | 18.52 | 0.00 | 0.511 | 2.640 | 28.490 | 1.9 | 2.41 | 12.51 | 7.73 | |
| 1 | 10 | 43.52 | 18.52 | 0.00 | 0.511 | 2.640 | 28.520 | 1.10 | 2.32 | 12.41 | 7.72 | |
| 1 | 11 | 42.60 | 18.54 | 0.02 | 0.511 | 2.642 | 28.550 | 1.11 | 2.23 | 12.52 | 7.72 | |
| 1 | 12 | 41.67 | 18.54 | 0.00 | 0.511 | 2.642 | 28.580 | 1.12 | 2.15 | 12.44 | 7.72 | |
| 1 | 13 | 40.74 | 18.58 | 0.04 | 0.512 | 2.646 | 28.610 | 1.13 | 2.06 | 12.73 | 7.71 | |
| 1 | 14 | 39.82 | 18.59 | 0.01 | 0.512 | 2.647 | 28.640 | 1.14 | 1.98 | 12.70 | 7.71 | |
| 1 | 15 | 38.89 | 18.59 | 0.00 | 0.512 | 2.647 | 28.670 | 1.15 | 1.89 | 12.58 | 7.70 | |
| 1 | 16 | 37.97 | 18.59 | 0.00 | 0.512 | 2.647 | 28.700 | 1.16 | 1.81 | 12.46 | 7.70 | |
| 1 | 17 | 37.04 | 18.59 | 0.00 | 0.512 | 2.647 | 28.730 | 1.17 | 1.73 | 12.34 | 7.70 | |
| 1 | 18 | 36.11 | 17.79 | -0.80 | 0.505 | 2.577 | 28.760 | 1.18 | 1.66 | 12.24 | 7.69 | |
| 1 | 19 | 35.19 | 17.80 | 0.01 | 0.505 | 2.578 | 28.790 | 1.19 | 1.58 | 12.21 | 7.69 | |
| 2 | 1 | 34.26 | 17.80 | 0.00 | 0.438 | 1.780 | 28.830 | 2.1 | 1.48 | 12.08 | 7.68 | |
| 2 | 2 | 33.34 | 17.83 | 0.03 | 0.438 | 1.782 | 28.880 | 2.2 | 1.38 | 12.15 | 7.67 | |
| 2 | 3 | 32.41 | 17.84 | 0.01 | 0.438 | 1.782 | 28.930 | 2.3 | 1.27 | 12.09 | 7.67 | |
| 2 | 4 | 31.48 | 17.84 | 0.00 | 0.438 | 1.782 | 28.980 | 2.4 | 1.18 | 11.91 | 7.66 | |
| 2 | 5 | 30.56 | 17.84 | 0.00 | 0.438 | 1.782 | 29.030 | 2.5 | 1.08 | 11.73 | 7.65 | |
| 2 | 6 | 29.63 | 17.84 | 0.00 | 0.438 | 1.782 | 29.080 | 2.6 | 0.99 | 11.56 | 7.65 | |
| 2 | 7 | 28.71 | 17.84 | 0.00 | 0.438 | 1.782 | 29.130 | 2.7 | 0.91 | 11.40 | 7.64 | |
| 2 | 8 | 27.78 | 17.84 | 0.00 | 0.438 | 1.782 | 29.180 | 2.8 | 0.82 | 11.32 | 7.63 | |

| HYDRAULICS SUMMARY | | | | | | | | WATER QUALITY VARIABLES | | | |
|--------------------|-----|--------------|----------|-------|---------|---------|------------|-------------------------|------|-------|--------|
| RCH | ELE | BEGIN X-SECT | FLOW CMS | POINT | Vel MPS | Depth M | Temperatur | RCH | DO | BOD | DO Sat |
| 3 | 1 | 26.85 | 17.89 | 0.06 | 0.451 | 2.142 | 29.230 | 3.1 | 0.71 | 11.91 | 7.63 |
| 3 | 2 | 25.93 | 17.89 | 0.00 | 0.451 | 2.142 | 29.270 | 3.2 | 0.58 | 11.75 | 7.62 |
| 3 | 3 | 25.00 | 17.90 | 0.01 | 0.452 | 2.143 | 29.300 | 3.3 | 0.45 | 11.77 | 7.62 |
| 3 | 4 | 24.08 | 17.91 | 0.00 | 0.452 | 2.144 | 29.340 | 3.4 | 0.33 | 11.67 | 7.61 |
| 3 | 5 | 23.15 | 17.91 | 0.00 | 0.452 | 2.144 | 29.380 | 3.5 | 0.21 | 11.53 | 7.61 |
| 3 | 6 | 22.22 | 17.92 | 0.01 | 0.452 | 2.144 | 29.420 | 3.6 | 0.10 | 11.43 | 7.60 |
| 3 | 7 | 21.30 | 17.94 | 0.02 | 0.452 | 2.146 | 29.460 | 3.7 | 0.00 | 11.51 | 7.60 |
| 3 | 8 | 20.37 | 17.94 | 0.00 | 0.452 | 2.146 | 29.490 | 3.8 | 0.00 | 11.34 | 7.59 |
| 3 | 9 | 19.45 | 17.94 | 0.00 | 0.452 | 2.146 | 29.530 | 3.9 | 0.00 | 11.17 | 7.59 |
| 3 | 10 | 18.52 | 17.94 | 0.00 | 0.452 | 2.146 | 29.570 | 3.10 | 0.00 | 11.03 | 7.58 |
| 4 | 1 | 17.59 | 17.96 | 0.02 | 0.333 | 3.207 | 29.610 | 4.1 | 0.00 | 11.08 | 7.58 |
| 4 | 2 | 16.67 | 17.96 | 0.00 | 0.333 | 3.207 | 29.640 | 4.2 | 0.00 | 10.90 | 7.57 |
| 4 | 3 | 15.74 | 17.96 | 0.00 | 0.333 | 3.207 | 29.670 | 4.3 | 0.00 | 10.73 | 7.57 |
| 4 | 4 | 14.82 | 17.96 | 0.00 | 0.333 | 3.207 | 29.710 | 4.4 | 0.00 | 10.56 | 7.57 |
| 4 | 5 | 13.89 | 17.96 | 0.00 | 0.333 | 3.207 | 29.740 | 4.5 | 0.00 | 10.44 | 7.56 |
| 4 | 6 | 12.96 | 16.14 | -1.82 | 0.322 | 3.205 | 29.770 | 4.6 | 0.00 | 10.56 | 7.56 |
| 5 | 1 | 12.04 | 16.43 | 0.29 | 0.368 | 2.227 | 29.790 | 5.1 | 0.00 | 12.45 | 7.55 |
| 5 | 2 | 11.11 | 16.43 | 0.00 | 0.368 | 2.227 | 29.830 | 5.2 | 0.00 | 12.24 | 7.55 |
| 5 | 3 | 10.19 | 16.52 | 0.08 | 0.369 | 2.234 | 29.870 | 5.3 | 0.00 | 12.09 | 7.55 |
| 5 | 4 | 9.26 | 16.70 | 0.18 | 0.370 | 2.245 | 29.900 | 5.4 | 0.00 | 12.43 | 7.54 |
| 5 | 5 | 8.33 | 16.80 | 0.10 | 0.371 | 2.257 | 29.930 | 5.5 | 0.00 | 12.30 | 7.54 |
| 6 | 1 | 7.41 | 16.96 | 0.16 | 0.333 | 1.963 | 29.950 | 6.1 | 0.00 | 13.10 | 7.54 |
| 6 | 2 | 6.48 | 18.96 | 2.00 | 0.346 | 2.102 | 29.910 | 6.2 | 0.00 | 12.70 | 7.54 |
| 6 | 3 | 5.56 | 18.96 | 0.00 | 0.346 | 2.102 | 29.920 | 6.3 | 0.00 | 12.49 | 7.54 |
| 6 | 4 | 4.63 | 22.96 | 4.00 | 0.371 | 2.365 | 29.830 | 6.4 | 0.44 | 12.21 | 7.55 |
| 6 | 5 | 3.70 | 23.96 | 1.00 | 0.377 | 2.428 | 29.840 | 6.5 | 0.56 | 11.73 | 7.55 |
| 6 | 6 | 2.78 | 23.99 | 0.03 | 0.377 | 2.430 | 29.870 | 6.6 | 0.50 | 11.60 | 7.55 |
| 6 | 7 | 1.85 | 23.99 | 0.00 | 0.377 | 2.430 | 29.900 | 6.7 | 0.43 | 11.45 | 7.54 |
| 6 | 8 | 0.93 | 23.99 | 0.00 | 0.377 | 2.430 | 29.930 | 6.8 | 0.39 | 11.34 | 7.54 |

6. Lampiran 6 Skenario 4b

| HYDRAULICS SUMMARY | | | | | | | WATER QUALITY VARIABLES | | | | | |
|--------------------|-----|--------------|----------|-------|---------|---------|-------------------------|------|--------|------|-------|-----------|
| RCH | ELE | BEGIN X-SECT | FLOW CMS | POINT | Vel MPS | Depth M | Temperatur | RCH | TEMP | DO | BOD | OXYGEN DO |
| 1 | 1 | 51.86 | 18.50 | 0.00 | 0.511 | 2.639 | 28.230 | 1.1 | 28.230 | 3.21 | 13.29 | 7.76 |
| 1 | 2 | 50.93 | 18.51 | 0.01 | 0.511 | 2.640 | 28.260 | 1.2 | 28.260 | 3.10 | 13.28 | 7.76 |
| 1 | 3 | 50.00 | 18.52 | 0.01 | 0.511 | 2.640 | 28.300 | 1.3 | 28.300 | 2.99 | 13.23 | 7.75 |
| 1 | 4 | 49.08 | 18.52 | 0.00 | 0.511 | 2.640 | 28.330 | 1.4 | 28.330 | 2.89 | 13.11 | 7.75 |
| 1 | 5 | 48.15 | 18.52 | 0.00 | 0.511 | 2.640 | 28.360 | 1.5 | 28.360 | 2.79 | 12.98 | 7.75 |
| 1 | 6 | 47.23 | 18.52 | 0.00 | 0.511 | 2.640 | 28.390 | 1.6 | 28.390 | 2.69 | 12.86 | 7.74 |
| 1 | 7 | 46.30 | 18.52 | 0.00 | 0.511 | 2.640 | 28.420 | 1.7 | 28.420 | 2.59 | 12.74 | 7.74 |
| 1 | 8 | 45.37 | 18.52 | 0.00 | 0.511 | 2.640 | 28.450 | 1.8 | 28.450 | 2.50 | 12.62 | 7.73 |
| 1 | 9 | 44.45 | 18.52 | 0.00 | 0.511 | 2.640 | 28.490 | 1.9 | 28.490 | 2.41 | 12.51 | 7.73 |
| 1 | 10 | 43.52 | 18.52 | 0.00 | 0.511 | 2.640 | 28.520 | 1.10 | 28.520 | 2.32 | 12.41 | 7.72 |
| 1 | 11 | 42.60 | 18.54 | 0.02 | 0.511 | 2.642 | 28.550 | 1.11 | 28.550 | 2.23 | 12.52 | 7.72 |
| 1 | 12 | 41.67 | 18.54 | 0.00 | 0.511 | 2.642 | 28.580 | 1.12 | 28.580 | 2.15 | 12.44 | 7.72 |
| 1 | 13 | 40.74 | 18.58 | 0.04 | 0.512 | 2.646 | 28.610 | 1.13 | 28.610 | 2.06 | 12.73 | 7.71 |
| 1 | 14 | 39.82 | 18.59 | 0.01 | 0.512 | 2.647 | 28.640 | 1.14 | 28.640 | 1.98 | 12.70 | 7.71 |
| 1 | 15 | 38.89 | 18.59 | 0.00 | 0.512 | 2.647 | 28.670 | 1.15 | 28.670 | 1.89 | 12.58 | 7.70 |
| 1 | 16 | 37.97 | 18.59 | 0.00 | 0.512 | 2.647 | 28.700 | 1.16 | 28.700 | 1.81 | 12.46 | 7.70 |
| 1 | 17 | 37.04 | 18.59 | 0.00 | 0.512 | 2.647 | 28.730 | 1.17 | 28.730 | 1.73 | 12.34 | 7.70 |
| 1 | 18 | 36.11 | 17.79 | -0.80 | 0.505 | 2.577 | 28.760 | 1.18 | 28.760 | 1.66 | 12.24 | 7.69 |
| 1 | 19 | 35.19 | 17.80 | 0.01 | 0.505 | 2.578 | 28.790 | 1.19 | 28.790 | 1.58 | 12.21 | 7.69 |
| 2 | 1 | 34.26 | 17.80 | 0.00 | 0.438 | 1.780 | 28.830 | 2.1 | 28.830 | 1.48 | 12.08 | 7.68 |
| 2 | 2 | 33.34 | 17.83 | 0.03 | 0.438 | 1.782 | 28.880 | 2.2 | 28.880 | 1.38 | 12.15 | 7.67 |
| 2 | 3 | 32.41 | 17.84 | 0.01 | 0.438 | 1.782 | 28.930 | 2.3 | 28.930 | 1.27 | 12.08 | 7.67 |
| 2 | 4 | 31.48 | 17.84 | 0.00 | 0.438 | 1.782 | 28.980 | 2.4 | 28.980 | 1.18 | 11.91 | 7.66 |
| 2 | 5 | 30.56 | 17.84 | 0.00 | 0.438 | 1.782 | 29.030 | 2.5 | 29.030 | 1.08 | 11.73 | 7.65 |
| 2 | 6 | 29.63 | 17.84 | 0.00 | 0.438 | 1.782 | 29.080 | 2.6 | 29.080 | 0.99 | 11.56 | 7.65 |
| 2 | 7 | 28.71 | 17.84 | 0.00 | 0.438 | 1.782 | 29.130 | 2.7 | 29.130 | 0.91 | 11.40 | 7.64 |
| 2 | 8 | 27.78 | 17.84 | 0.00 | 0.438 | 1.782 | 29.180 | 2.8 | 29.180 | 0.83 | 11.32 | 7.63 |
| 3 | 1 | 26.85 | 17.89 | 0.06 | 0.451 | 2.142 | 29.230 | 3.1 | 29.230 | 0.71 | 11.89 | 7.63 |

| HYDRAULICS SUMMARY | | | | | | | WATER QUALITY VARIABLES | | | | | |
|--------------------|-----|--------------|----------|-------|---------|---------|-------------------------|------|--------|------|-------|-----------|
| RCH | ELE | BEGIN X-SECT | FLOW CMS | POINT | Vel MPS | Depth M | Temperatur | RCH | TEMP | DO | BOD | OXYGEN DO |
| 3 | 2 | 25.93 | 17.89 | 0.00 | 0.451 | 2.142 | 29.270 | 3.2 | 29.270 | 0.58 | 11.74 | 7.62 |
| 3 | 3 | 25.00 | 17.90 | 0.01 | 0.452 | 2.143 | 29.300 | 3.3 | 29.300 | 0.45 | 11.75 | 7.62 |
| 3 | 4 | 24.08 | 17.91 | 0.00 | 0.452 | 2.144 | 29.340 | 3.4 | 29.340 | 0.33 | 11.65 | 7.61 |
| 3 | 5 | 23.15 | 17.91 | 0.00 | 0.452 | 2.144 | 29.380 | 3.5 | 29.380 | 0.21 | 11.51 | 7.61 |
| 3 | 6 | 22.22 | 17.92 | 0.01 | 0.452 | 2.144 | 29.420 | 3.6 | 29.420 | 0.11 | 11.40 | 7.60 |
| 3 | 7 | 21.30 | 17.94 | 0.02 | 0.452 | 2.146 | 29.460 | 3.7 | 29.460 | 0.01 | 11.48 | 7.60 |
| 3 | 8 | 20.37 | 17.94 | 0.00 | 0.452 | 2.146 | 29.490 | 3.8 | 29.490 | 0.00 | 11.31 | 7.59 |
| 3 | 9 | 19.45 | 17.94 | 0.00 | 0.452 | 2.146 | 29.530 | 3.9 | 29.530 | 0.00 | 11.14 | 7.59 |
| 3 | 10 | 18.52 | 17.94 | 0.00 | 0.452 | 2.146 | 29.570 | 3.10 | 29.570 | 0.00 | 11.00 | 7.58 |
| 4 | 1 | 17.59 | 17.96 | 0.02 | 0.333 | 3.207 | 29.610 | 4.1 | 29.610 | 0.00 | 11.05 | 7.58 |
| 4 | 2 | 16.67 | 17.96 | 0.00 | 0.333 | 3.207 | 29.640 | 4.2 | 29.640 | 0.00 | 10.87 | 7.57 |
| 4 | 3 | 15.74 | 17.96 | 0.00 | 0.333 | 3.207 | 29.670 | 4.3 | 29.670 | 0.00 | 10.70 | 7.57 |
| 4 | 4 | 14.82 | 17.96 | 0.00 | 0.333 | 3.207 | 29.710 | 4.4 | 29.710 | 0.00 | 10.54 | 7.57 |
| 4 | 5 | 13.89 | 17.96 | 0.00 | 0.333 | 3.207 | 29.740 | 4.5 | 29.740 | 0.00 | 10.41 | 7.56 |
| 4 | 6 | 12.96 | 16.14 | -1.82 | 0.322 | 3.205 | 29.770 | 4.6 | 29.770 | 0.00 | 10.53 | 7.56 |
| 5 | 1 | 12.04 | 16.43 | 0.29 | 0.368 | 2.227 | 29.790 | 5.1 | 29.790 | 0.00 | 12.41 | 7.55 |
| 5 | 2 | 11.11 | 16.43 | 0.00 | 0.368 | 2.227 | 29.830 | 5.2 | 29.830 | 0.00 | 12.20 | 7.55 |
| 5 | 3 | 10.19 | 16.52 | 0.08 | 0.369 | 2.234 | 29.870 | 5.3 | 29.870 | 0.00 | 12.05 | 7.55 |
| 5 | 4 | 9.26 | 16.70 | 0.18 | 0.370 | 2.245 | 29.900 | 5.4 | 29.900 | 0.00 | 12.39 | 7.54 |
| 5 | 5 | 8.33 | 16.80 | 0.10 | 0.371 | 2.257 | 29.930 | 5.5 | 29.930 | 0.00 | 12.23 | 7.54 |
| 6 | 1 | 7.41 | 16.96 | 0.16 | 0.333 | 1.963 | 29.950 | 6.1 | 29.950 | 0.00 | 12.85 | 7.54 |
| 6 | 2 | 6.48 | 18.96 | 2.00 | 0.346 | 2.102 | 29.910 | 6.2 | 29.910 | 0.00 | 12.48 | 7.54 |
| 6 | 3 | 5.56 | 18.96 | 0.00 | 0.346 | 2.102 | 29.920 | 6.3 | 29.920 | 0.00 | 12.28 | 7.54 |
| 6 | 4 | 4.63 | 22.96 | 4.00 | 0.371 | 2.365 | 29.830 | 6.4 | 29.830 | 0.51 | 12.04 | 7.55 |
| 6 | 5 | 3.70 | 23.96 | 1.00 | 0.377 | 2.428 | 29.840 | 6.5 | 29.840 | 0.62 | 11.57 | 7.55 |
| 6 | 6 | 2.78 | 23.99 | 0.03 | 0.377 | 2.430 | 29.870 | 6.6 | 29.870 | 0.56 | 11.44 | 7.55 |
| 6 | 7 | 1.85 | 23.99 | 0.00 | 0.377 | 2.430 | 29.900 | 6.7 | 29.900 | 0.50 | 11.30 | 7.54 |
| 6 | 8 | 0.93 | 23.99 | 0.00 | 0.377 | 2.430 | 29.930 | 6.8 | 29.930 | 0.46 | 11.19 | 7.54 |

7. Lampiran 7 Skenario 5a

| HYDRAULICS SUMMARY | | | | | | | | WATER QUALITY VARIABLES | | | |
|--------------------|-----|--------------|----------|-------|---------|---------|------------|-------------------------|------|-------|-----------|
| RCH | ELE | BEGIN X-SECT | FLOW CMS | POINT | Vel MPS | Depth M | Temperatur | RCH | DO | BOD | OXYGEN DO |
| 1 | 1 | 51.86 | 18.50 | 0.00 | 0.511 | 2.639 | 28.230 | 1.1 | 2.94 | 9.93 | 7.76 |
| 1 | 2 | 50.93 | 18.51 | 0.01 | 0.511 | 2.640 | 28.260 | 1.2 | 2.87 | 10.02 | 7.76 |
| 1 | 3 | 50.00 | 18.52 | 0.01 | 0.511 | 2.640 | 28.300 | 1.3 | 2.81 | 10.03 | 7.75 |
| 1 | 4 | 49.08 | 18.52 | 0.00 | 0.511 | 2.640 | 28.330 | 1.4 | 2.74 | 9.94 | 7.75 |
| 1 | 5 | 48.15 | 18.52 | 0.00 | 0.511 | 2.640 | 28.360 | 1.5 | 2.68 | 9.85 | 7.75 |
| 1 | 6 | 47.23 | 18.52 | 0.00 | 0.511 | 2.640 | 28.390 | 1.6 | 2.63 | 9.75 | 7.74 |
| 1 | 7 | 46.30 | 18.52 | 0.00 | 0.511 | 2.640 | 28.420 | 1.7 | 2.57 | 9.66 | 7.74 |
| 1 | 8 | 45.37 | 18.52 | 0.00 | 0.511 | 2.640 | 28.450 | 1.8 | 2.51 | 9.57 | 7.73 |
| 1 | 9 | 44.45 | 18.52 | 0.00 | 0.511 | 2.640 | 28.490 | 1.9 | 2.46 | 9.49 | 7.73 |
| 1 | 10 | 43.52 | 18.52 | 0.00 | 0.511 | 2.640 | 28.520 | 1.10 | 2.41 | 9.43 | 7.72 |
| 1 | 11 | 42.60 | 18.54 | 0.02 | 0.511 | 2.642 | 28.550 | 1.11 | 2.36 | 9.69 | 7.72 |
| 1 | 12 | 41.67 | 18.54 | 0.00 | 0.511 | 2.642 | 28.580 | 1.12 | 2.30 | 9.66 | 7.72 |
| 1 | 13 | 40.74 | 18.58 | 0.04 | 0.512 | 2.646 | 28.610 | 1.13 | 2.25 | 10.21 | 7.71 |
| 1 | 14 | 39.82 | 18.59 | 0.01 | 0.512 | 2.647 | 28.640 | 1.14 | 2.19 | 10.26 | 7.71 |
| 1 | 15 | 38.89 | 18.59 | 0.00 | 0.512 | 2.647 | 28.670 | 1.15 | 2.13 | 10.16 | 7.70 |
| 1 | 16 | 37.97 | 18.59 | 0.00 | 0.512 | 2.647 | 28.700 | 1.16 | 2.08 | 10.06 | 7.70 |
| 1 | 17 | 37.04 | 18.59 | 0.00 | 0.512 | 2.647 | 28.730 | 1.17 | 2.02 | 9.97 | 7.70 |
| 1 | 18 | 36.11 | 17.79 | -0.80 | 0.505 | 2.577 | 28.760 | 1.18 | 1.97 | 9.89 | 7.69 |
| 1 | 19 | 35.19 | 17.80 | 0.01 | 0.505 | 2.578 | 28.790 | 1.19 | 1.92 | 9.94 | 7.69 |
| 2 | 1 | 34.26 | 17.80 | 0.00 | 0.438 | 1.780 | 28.830 | 2.1 | 1.85 | 9.86 | 7.68 |
| 2 | 2 | 33.34 | 17.83 | 0.03 | 0.438 | 1.782 | 28.880 | 2.2 | 1.77 | 10.11 | 7.67 |
| 2 | 3 | 32.41 | 17.84 | 0.01 | 0.438 | 1.782 | 28.930 | 2.3 | 1.70 | 10.13 | 7.67 |
| 2 | 4 | 31.48 | 17.84 | 0.00 | 0.438 | 1.782 | 28.980 | 2.4 | 1.63 | 9.98 | 7.66 |
| 2 | 5 | 30.56 | 17.84 | 0.00 | 0.438 | 1.782 | 29.030 | 2.5 | 1.56 | 9.84 | 7.65 |
| 2 | 6 | 29.63 | 17.84 | 0.00 | 0.438 | 1.782 | 29.080 | 2.6 | 1.50 | 9.69 | 7.65 |
| 2 | 7 | 28.71 | 17.84 | 0.00 | 0.438 | 1.782 | 29.130 | 2.7 | 1.44 | 9.56 | 7.64 |
| 2 | 8 | 27.78 | 17.84 | 0.00 | 0.438 | 1.782 | 29.180 | 2.8 | 1.37 | 9.51 | 7.63 |
| 3 | 1 | 26.85 | 17.89 | 0.06 | 0.451 | 2.142 | 29.230 | 3.1 | 1.28 | 10.13 | 7.63 |

| HYDRAULICS SUMMARY | | | | | | | | WATER QUALITY VARIABLES | | | |
|--------------------|-----|--------------|----------|-------|---------|---------|------------|-------------------------|------|-------|-----------|
| RCH | ELE | BEGIN X-SECT | FLOW CMS | POINT | Vel MPS | Depth M | Temperatur | RCH | DO | BOD | OXYGEN DO |
| 3 | 2 | 25.93 | 17.89 | 0.00 | 0.451 | 2.142 | 29.270 | 3.2 | 1.17 | 10.00 | 7.62 |
| 3 | 3 | 25.00 | 17.90 | 0.01 | 0.452 | 2.143 | 29.300 | 3.3 | 1.07 | 10.04 | 7.62 |
| 3 | 4 | 24.08 | 17.91 | 0.00 | 0.452 | 2.144 | 29.340 | 3.4 | 0.97 | 9.97 | 7.61 |
| 3 | 5 | 23.15 | 17.91 | 0.00 | 0.452 | 2.144 | 29.380 | 3.5 | 0.87 | 9.86 | 7.61 |
| 3 | 6 | 22.22 | 17.92 | 0.01 | 0.452 | 2.144 | 29.420 | 3.6 | 0.78 | 9.79 | 7.60 |
| 3 | 7 | 21.30 | 17.94 | 0.02 | 0.452 | 2.146 | 29.460 | 3.7 | 0.69 | 9.89 | 7.60 |
| 3 | 8 | 20.37 | 17.94 | 0.00 | 0.452 | 2.146 | 29.490 | 3.8 | 0.60 | 9.74 | 7.59 |
| 3 | 9 | 19.45 | 17.94 | 0.00 | 0.452 | 2.146 | 29.530 | 3.9 | 0.51 | 9.60 | 7.59 |
| 3 | 10 | 18.52 | 17.94 | 0.00 | 0.452 | 2.146 | 29.570 | 3.10 | 0.43 | 9.48 | 7.58 |
| 4 | 1 | 17.59 | 17.96 | 0.02 | 0.333 | 3.207 | 29.610 | 4.1 | 0.33 | 9.55 | 7.58 |
| 4 | 2 | 16.67 | 17.96 | 0.00 | 0.333 | 3.207 | 29.640 | 4.2 | 0.21 | 9.40 | 7.57 |
| 4 | 3 | 15.74 | 17.96 | 0.00 | 0.333 | 3.207 | 29.670 | 4.3 | 0.10 | 9.25 | 7.57 |
| 4 | 4 | 14.82 | 17.96 | 0.00 | 0.333 | 3.207 | 29.710 | 4.4 | 0.01 | 9.11 | 7.57 |
| 4 | 5 | 13.89 | 17.96 | 0.00 | 0.333 | 3.207 | 29.740 | 4.5 | 0.00 | 9.01 | 7.56 |
| 4 | 6 | 12.96 | 16.14 | -1.82 | 0.322 | 3.205 | 29.770 | 4.6 | 0.00 | 9.16 | 7.56 |
| 5 | 1 | 12.04 | 16.43 | 0.29 | 0.368 | 2.227 | 29.790 | 5.1 | 0.00 | 11.09 | 7.55 |
| 5 | 2 | 11.11 | 16.43 | 0.00 | 0.368 | 2.227 | 29.830 | 5.2 | 0.00 | 10.91 | 7.55 |
| 5 | 3 | 10.19 | 16.52 | 0.08 | 0.369 | 2.234 | 29.870 | 5.3 | 0.00 | 10.79 | 7.55 |
| 5 | 4 | 9.26 | 16.70 | 0.18 | 0.370 | 2.245 | 29.900 | 5.4 | 0.00 | 11.16 | 7.54 |
| 5 | 5 | 8.33 | 16.80 | 0.10 | 0.371 | 2.257 | 29.930 | 5.5 | 0.00 | 11.07 | 7.54 |
| 6 | 1 | 7.41 | 16.96 | 0.16 | 0.333 | 1.963 | 29.950 | 6.1 | 0.00 | 11.91 | 7.54 |
| 6 | 2 | 6.48 | 18.96 | 2.00 | 0.346 | 2.102 | 29.910 | 6.2 | 0.14 | 11.64 | 7.54 |
| 6 | 3 | 5.56 | 18.96 | 0.00 | 0.346 | 2.102 | 29.920 | 6.3 | 0.25 | 11.47 | 7.54 |
| 6 | 4 | 4.63 | 22.96 | 4.00 | 0.371 | 2.365 | 29.830 | 6.4 | 1.07 | 11.36 | 7.55 |
| 6 | 5 | 3.70 | 23.96 | 1.00 | 0.377 | 2.428 | 29.840 | 6.5 | 1.17 | 10.92 | 7.55 |
| 6 | 6 | 2.78 | 23.99 | 0.03 | 0.377 | 2.430 | 29.870 | 6.6 | 1.10 | 10.80 | 7.55 |
| 6 | 7 | 1.85 | 23.99 | 0.00 | 0.377 | 2.430 | 29.900 | 6.7 | 1.04 | 10.66 | 7.54 |
| 6 | 8 | 0.93 | 23.99 | 0.00 | 0.377 | 2.430 | 29.930 | 6.8 | 1.00 | 10.56 | 7.54 |

8. Lampiran 8 Skenario 5b

| HYDRAULICS SUMMARY | | | | | | | | WATER QUALITY VARIABLES | | |
|--------------------|-----|--------------|----------|-------|---------|---------|------------|-------------------------|------|-------|
| RCH | ELE | BEGIN X-SECT | FLOW CMS | POINT | Vel MPS | Depth M | Temperatur | RCH | DO | BOD |
| 1 | 1 | 51.86 | 18.50 | 0.00 | 0.511 | 2.639 | 28.230 | 1.1 | 2.94 | 9.93 |
| 1 | 2 | 50.93 | 18.51 | 0.01 | 0.511 | 2.640 | 28.260 | 1.2 | 2.87 | 10.02 |
| 1 | 3 | 50.00 | 18.52 | 0.01 | 0.511 | 2.640 | 28.300 | 1.3 | 2.81 | 10.03 |
| 1 | 4 | 49.08 | 18.52 | 0.00 | 0.511 | 2.640 | 28.330 | 1.4 | 2.74 | 9.94 |
| 1 | 5 | 48.15 | 18.52 | 0.00 | 0.511 | 2.640 | 28.360 | 1.5 | 2.68 | 9.85 |
| 1 | 6 | 47.23 | 18.52 | 0.00 | 0.511 | 2.640 | 28.390 | 1.6 | 2.63 | 9.75 |
| 1 | 7 | 46.30 | 18.52 | 0.00 | 0.511 | 2.640 | 28.420 | 1.7 | 2.57 | 9.66 |
| 1 | 8 | 45.37 | 18.52 | 0.00 | 0.511 | 2.640 | 28.450 | 1.8 | 2.51 | 9.57 |
| 1 | 9 | 44.45 | 18.52 | 0.00 | 0.511 | 2.640 | 28.490 | 1.9 | 2.46 | 9.49 |
| 1 | 10 | 43.52 | 18.52 | 0.00 | 0.511 | 2.640 | 28.520 | 1.10 | 2.41 | 9.43 |
| 1 | 11 | 42.60 | 18.54 | 0.02 | 0.511 | 2.642 | 28.550 | 1.11 | 2.36 | 9.69 |
| 1 | 12 | 41.67 | 18.54 | 0.00 | 0.511 | 2.642 | 28.580 | 1.12 | 2.30 | 9.66 |
| 1 | 13 | 40.74 | 18.58 | 0.04 | 0.512 | 2.646 | 28.610 | 1.13 | 2.25 | 10.21 |
| 1 | 14 | 39.82 | 18.59 | 0.01 | 0.512 | 2.647 | 28.640 | 1.14 | 2.19 | 10.25 |
| 1 | 15 | 38.89 | 18.59 | 0.00 | 0.512 | 2.647 | 28.670 | 1.15 | 2.13 | 10.16 |
| 1 | 16 | 37.97 | 18.59 | 0.00 | 0.512 | 2.647 | 28.700 | 1.16 | 2.08 | 10.06 |
| 1 | 17 | 37.04 | 18.59 | 0.00 | 0.512 | 2.647 | 28.730 | 1.17 | 2.02 | 9.97 |
| 1 | 18 | 36.11 | 17.79 | -0.80 | 0.505 | 2.577 | 28.760 | 1.18 | 1.97 | 9.89 |
| 1 | 19 | 35.19 | 17.80 | 0.01 | 0.505 | 2.578 | 28.790 | 1.19 | 1.92 | 9.94 |
| 2 | 1 | 34.26 | 17.80 | 0.00 | 0.438 | 1.780 | 28.830 | 2.1 | 1.85 | 9.86 |
| 2 | 2 | 33.34 | 17.83 | 0.03 | 0.438 | 1.782 | 28.880 | 2.2 | 1.77 | 10.10 |
| 2 | 3 | 32.41 | 17.84 | 0.01 | 0.438 | 1.782 | 28.930 | 2.3 | 1.70 | 10.13 |
| 2 | 4 | 31.48 | 17.84 | 0.00 | 0.438 | 1.782 | 28.980 | 2.4 | 1.63 | 9.98 |
| 2 | 5 | 30.56 | 17.84 | 0.00 | 0.438 | 1.782 | 29.030 | 2.5 | 1.56 | 9.84 |
| 2 | 6 | 29.63 | 17.84 | 0.00 | 0.438 | 1.782 | 29.080 | 2.6 | 1.50 | 9.69 |
| 2 | 7 | 28.71 | 17.84 | 0.00 | 0.438 | 1.782 | 29.130 | 2.7 | 1.44 | 9.56 |
| 2 | 8 | 27.78 | 17.84 | 0.00 | 0.438 | 1.782 | 29.180 | 2.8 | 1.37 | 9.51 |

| HYDRAULICS SUMMARY | | | | | | | | WATER QUALITY VARIABLES | | |
|--------------------|----|-------|-------|-------|-------|-------|--------|-------------------------|------|-------|
| 3 | 1 | 26.85 | 17.89 | 0.06 | 0.451 | 2.142 | 29.230 | 3.1 | 1.28 | 10.11 |
| 3 | 2 | 25.93 | 17.89 | 0.00 | 0.451 | 2.142 | 29.270 | 3.2 | 1.17 | 9.99 |
| 3 | 3 | 25.00 | 17.90 | 0.01 | 0.452 | 2.143 | 29.300 | 3.3 | 1.07 | 10.04 |
| 3 | 4 | 24.08 | 17.91 | 0.00 | 0.452 | 2.144 | 29.340 | 3.4 | 0.97 | 9.97 |
| 3 | 5 | 23.15 | 17.91 | 0.00 | 0.452 | 2.144 | 29.380 | 3.5 | 0.88 | 9.84 |
| 3 | 6 | 22.22 | 17.92 | 0.01 | 0.452 | 2.144 | 29.420 | 3.6 | 0.79 | 9.76 |
| 3 | 7 | 21.30 | 17.94 | 0.02 | 0.452 | 2.146 | 29.460 | 3.7 | 0.70 | 9.86 |
| 3 | 8 | 20.37 | 17.94 | 0.00 | 0.452 | 2.146 | 29.490 | 3.8 | 0.61 | 9.71 |
| 3 | 9 | 19.45 | 17.94 | 0.00 | 0.452 | 2.146 | 29.530 | 3.9 | 0.52 | 9.57 |
| 3 | 10 | 18.52 | 17.94 | 0.00 | 0.452 | 2.146 | 29.570 | 3.10 | 0.44 | 9.46 |
| 4 | 1 | 17.59 | 17.96 | 0.02 | 0.333 | 3.207 | 29.610 | 4.1 | 0.34 | 9.53 |
| 4 | 2 | 16.67 | 17.96 | 0.00 | 0.333 | 3.207 | 29.640 | 4.2 | 0.22 | 9.38 |
| 4 | 3 | 15.74 | 17.96 | 0.00 | 0.333 | 3.207 | 29.670 | 4.3 | 0.11 | 9.23 |
| 4 | 4 | 14.82 | 17.96 | 0.00 | 0.333 | 3.207 | 29.710 | 4.4 | 0.02 | 9.09 |
| 4 | 5 | 13.89 | 17.96 | 0.00 | 0.333 | 3.207 | 29.740 | 4.5 | 0.00 | 8.99 |
| 4 | 6 | 12.96 | 16.14 | -1.82 | 0.322 | 3.205 | 29.770 | 4.6 | 0.00 | 9.13 |
| 5 | 1 | 12.04 | 16.43 | 0.29 | 0.368 | 2.227 | 29.790 | 5.1 | 0.00 | 11.06 |
| 5 | 2 | 11.11 | 16.43 | 0.00 | 0.368 | 2.227 | 29.830 | 5.2 | 0.00 | 10.88 |
| 5 | 3 | 10.19 | 16.52 | 0.08 | 0.369 | 2.234 | 29.870 | 5.3 | 0.00 | 10.76 |
| 5 | 4 | 9.26 | 16.70 | 0.18 | 0.370 | 2.245 | 29.900 | 5.4 | 0.00 | 11.13 |
| 5 | 5 | 8.33 | 16.80 | 0.10 | 0.371 | 2.257 | 29.930 | 5.5 | 0.00 | 11.03 |
| 6 | 1 | 7.41 | 16.96 | 0.16 | 0.333 | 1.963 | 29.950 | 6.1 | 0.00 | 11.87 |
| 6 | 2 | 6.48 | 18.96 | 2.00 | 0.346 | 2.102 | 29.910 | 6.2 | 0.17 | 11.60 |
| 6 | 3 | 5.56 | 18.96 | 0.00 | 0.346 | 2.102 | 29.920 | 6.3 | 0.28 | 11.43 |
| 6 | 4 | 4.63 | 22.96 | 4.00 | 0.371 | 2.365 | 29.830 | 6.4 | 1.09 | 11.32 |
| 6 | 5 | 3.70 | 23.96 | 1.00 | 0.377 | 2.428 | 29.840 | 6.5 | 1.18 | 10.89 |
| 6 | 6 | 2.78 | 23.99 | 0.03 | 0.377 | 2.430 | 29.870 | 6.6 | 1.12 | 10.77 |
| 6 | 7 | 1.85 | 23.99 | 0.00 | 0.377 | 2.430 | 29.900 | 6.7 | 1.06 | 10.63 |
| 6 | 8 | 0.93 | 23.99 | 0.00 | 0.377 | 2.430 | 29.930 | 6.8 | 1.01 | 10.53 |

9. Lampiran 9 Skenario 4 c dan 5c

| RCH | ELE | Pengaturan Titik Discharge skenario 4c | | Pengaturan Titik Discharge skenario 5c | |
|-----|-----|--|-------|--|-------|
| | | DO | BOD | DO | BOD |
| 1 | 1 | 3.21 | 13.28 | 2.94 | 9.91 |
| 1 | 2 | 3.10 | 13.15 | 2.87 | 9.82 |
| 1 | 3 | 3.00 | 13.03 | 2.81 | 9.72 |
| 1 | 4 | 2.89 | 12.91 | 2.75 | 9.63 |
| 1 | 5 | 2.79 | 12.79 | 2.7 | 9.54 |
| 1 | 6 | 2.70 | 12.67 | 2.64 | 9.45 |
| 1 | 7 | 2.60 | 12.55 | 2.59 | 9.37 |
| 1 | 8 | 2.51 | 12.43 | 2.54 | 9.28 |
| 1 | 9 | 2.42 | 12.32 | 2.49 | 9.19 |
| 1 | 10 | 2.34 | 12.20 | 2.44 | 9.11 |
| 1 | 11 | 2.26 | 12.10 | 2.39 | 9.03 |
| 1 | 12 | 2.17 | 12.06 | 2.35 | 9.08 |
| 1 | 13 | 2.09 | 12.74 | 2.29 | 10.23 |
| 1 | 14 | 2.01 | 12.62 | 2.23 | 10.13 |
| 1 | 15 | 1.92 | 12.50 | 2.18 | 10.04 |
| 1 | 16 | 1.84 | 12.39 | 2.12 | 9.94 |
| 1 | 17 | 1.76 | 12.27 | 2.07 | 9.85 |
| 1 | 18 | 1.69 | 12.15 | 2.02 | 9.76 |
| 1 | 19 | 1.61 | 12.03 | 1.97 | 9.66 |
| 2 | 1 | 1.51 | 11.89 | 1.9 | 9.55 |
| 2 | 2 | 1.41 | 11.78 | 1.84 | 9.51 |
| 2 | 3 | 1.32 | 12.13 | 1.76 | 10.21 |
| 2 | 4 | 1.22 | 11.96 | 1.69 | 10.06 |
| 2 | 5 | 1.12 | 11.78 | 1.62 | 9.91 |
| 2 | 6 | 1.03 | 11.61 | 1.55 | 9.76 |
| 2 | 7 | 0.94 | 11.45 | 1.49 | 9.63 |
| 2 | 8 | 0.86 | 11.37 | 1.42 | 9.58 |
| 3 | 1 | 0.74 | 11.93 | 1.33 | 10.18 |

| RCH | ELE | Pengaturan Titik Discharge skenario 4c | | Pengaturan Titik Discharge skenario 5c | |
|-----|-----|--|-------|--|-------|
| | | DO | BOD | DO | BOD |
| 3 | 2 | 0.61 | 11.75 | 1.22 | 10.03 |
| 3 | 3 | 0.49 | 11.58 | 1.12 | 9.88 |
| 3 | 4 | 0.37 | 11.41 | 1.02 | 9.74 |
| 3 | 5 | 0.25 | 11.29 | 0.93 | 9.64 |
| 3 | 6 | 0.15 | 11.46 | 0.84 | 9.84 |
| 3 | 7 | 0.05 | 11.53 | 0.75 | 9.94 |
| 3 | 8 | 0.00 | 11.36 | 0.66 | 9.79 |
| 3 | 9 | 0.00 | 11.19 | 0.57 | 9.64 |
| 3 | 10 | 0.00 | 11.05 | 0.48 | 9.53 |
| 4 | 1 | 0.00 | 11.10 | 0.38 | 9.6 |
| 4 | 2 | 0.00 | 10.92 | 0.26 | 9.45 |
| 4 | 3 | 0.00 | 10.75 | 0.15 | 9.3 |
| 4 | 4 | 0.00 | 10.58 | 0.04 | 9.16 |
| 4 | 5 | 0.00 | 10.46 | 0.00 | 9.05 |
| 4 | 6 | 0.00 | 10.58 | 0.00 | 9.2 |
| 5 | 1 | 0.00 | 12.45 | 0.00 | 11.12 |
| 5 | 2 | 0.00 | 12.25 | 0.00 | 10.94 |
| 5 | 3 | 0.00 | 12.11 | 0.00 | 10.82 |
| 5 | 4 | 0.00 | 12.43 | 0.00 | 11.18 |
| 5 | 5 | 0.00 | 12.26 | 0.00 | 11.05 |
| 6 | 1 | 0.00 | 12.89 | 0.00 | 11.74 |
| 6 | 2 | 0.00 | 12.51 | 0.26 | 11.48 |
| 6 | 3 | 0.00 | 12.31 | 0.36 | 11.32 |
| 6 | 4 | 0.52 | 12.06 | 1.15 | 11.23 |
| 6 | 5 | 0.63 | 11.60 | 1.24 | 10.81 |
| 6 | 6 | 0.57 | 11.47 | 1.18 | 10.69 |
| 6 | 7 | 0.51 | 11.32 | 1.11 | 10.55 |
| 6 | 8 | 0.46 | 11.21 | 1.07 | 10.45 |