

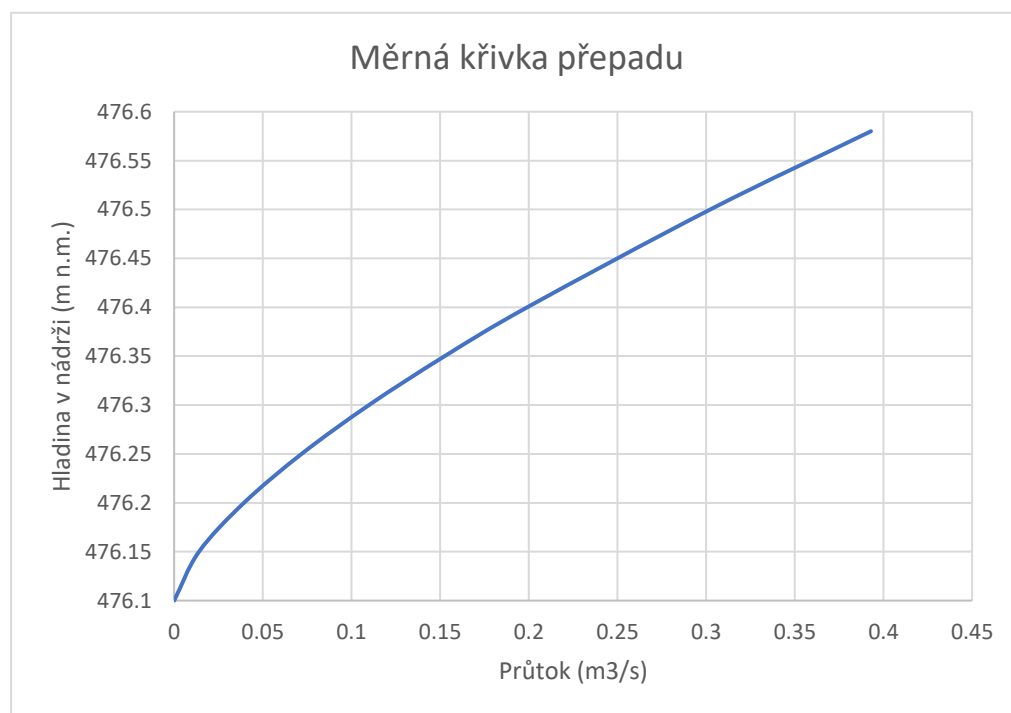
D.7. HYDROTECHNICKÉ VÝPOČTY

VODNÍ NÁDRŽ VN 1

a) Přepad přes dluže požeráku

Šířka dluží: 0,75 m

| H (m n.m.) | h (m) | m | | | b (m) | bo (m) | Q (m3/s) |
|-------------|-------|------|----------|------------|-------|--------|----------|
| 479.1 | 0 | 0.38 | 4.429447 | 0 | 0.75 | 0.75 | 0 |
| 479.15 | 0.05 | 0.38 | 4.429447 | 0.01118034 | 0.75 | 0.745 | 0.014 |
| 479.2 | 0.1 | 0.38 | 4.429447 | 0.03162278 | 0.75 | 0.74 | 0.039 |
| 479.25 | 0.15 | 0.38 | 4.429447 | 0.05809475 | 0.75 | 0.735 | 0.072 |
| 479.3 | 0.2 | 0.38 | 4.429447 | 0.08944272 | 0.75 | 0.73 | 0.110 |
| 479.35 | 0.25 | 0.38 | 4.429447 | 0.125 | 0.75 | 0.725 | 0.153 |
| 479.4 | 0.3 | 0.38 | 4.429447 | 0.16431677 | 0.75 | 0.72 | 0.20 |
| 479.5 | 0.4 | 0.38 | 4.429447 | 0.25298221 | 0.75 | 0.71 | 0.30 |
| 479.58 | 0.48 | 0.38 | 4.429447 | 0.33255376 | 0.75 | 0.702 | 0.39 |



Kapacita potrubí DN 500:

r 0.25 m
 pí 3.141593
 r 0.0625
 S 0.19635
 sklon 0.02

Výpočet

D8/3 i 1/2 Q

0.157490131 0.141421

0.535

DN 500 – kapacita 0,535 m³/s

Přepad dluže: 0,39 m³/s VYHOVUJE

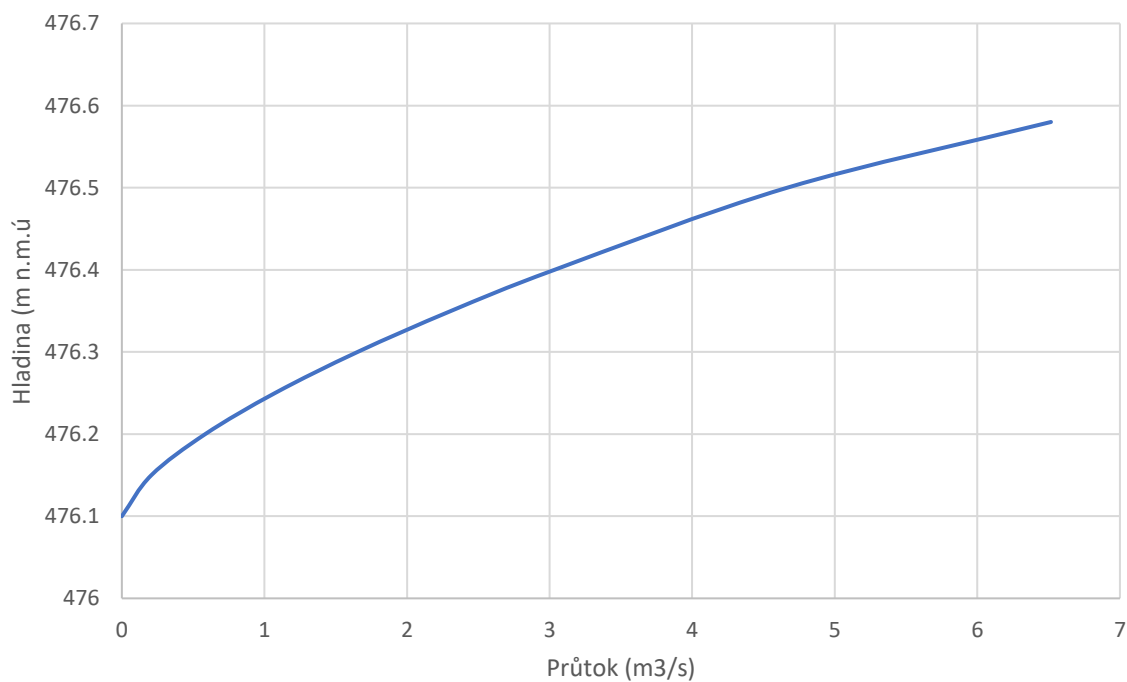
b) Přepad přes bezpečnostní přeliv

Délka přelivné hrany: 11 m

Návrhový průtok: 6,1 m³/s

| H (m n.m.) | h (m) | m | | | b (m) | bo (m) | Q (m ³ /s) |
|-------------|-------|------|------------|----------|-------|--------|-----------------------|
| 479.1 | 0 | 0.38 | 4.42944692 | 0 | 11 | 11 | 0 |
| 479.15 | 0.05 | 0.38 | 4.42944692 | 0.01118 | 11 | 10.995 | 0.207 |
| 479.2 | 0.1 | 0.38 | 4.42944692 | 0.031623 | 11 | 10.99 | 0.58 |
| 479.25 | 0.15 | 0.38 | 4.42944692 | 0.058095 | 11 | 10.985 | 1.07 |
| 479.3 | 0.2 | 0.38 | 4.42944692 | 0.089443 | 11 | 10.98 | 1.65 |
| 479.35 | 0.25 | 0.38 | 4.42944692 | 0.125 | 11 | 10.975 | 2.31 |
| 479.4 | 0.3 | 0.38 | 4.42944692 | 0.164317 | 11 | 10.97 | 3.03 |
| 479.5 | 0.4 | 0.38 | 4.42944692 | 0.252982 | 11 | 10.96 | 4.67 |
| 479.58 | 0.5 | 0.38 | 4.42944692 | 0.353553 | 11 | 10.95 | 6.52 |

Měrná křivka přepadu - bezpečnostní přeliv



c) Odpadní potrubí DN 800

Potrubí spodní výpusti

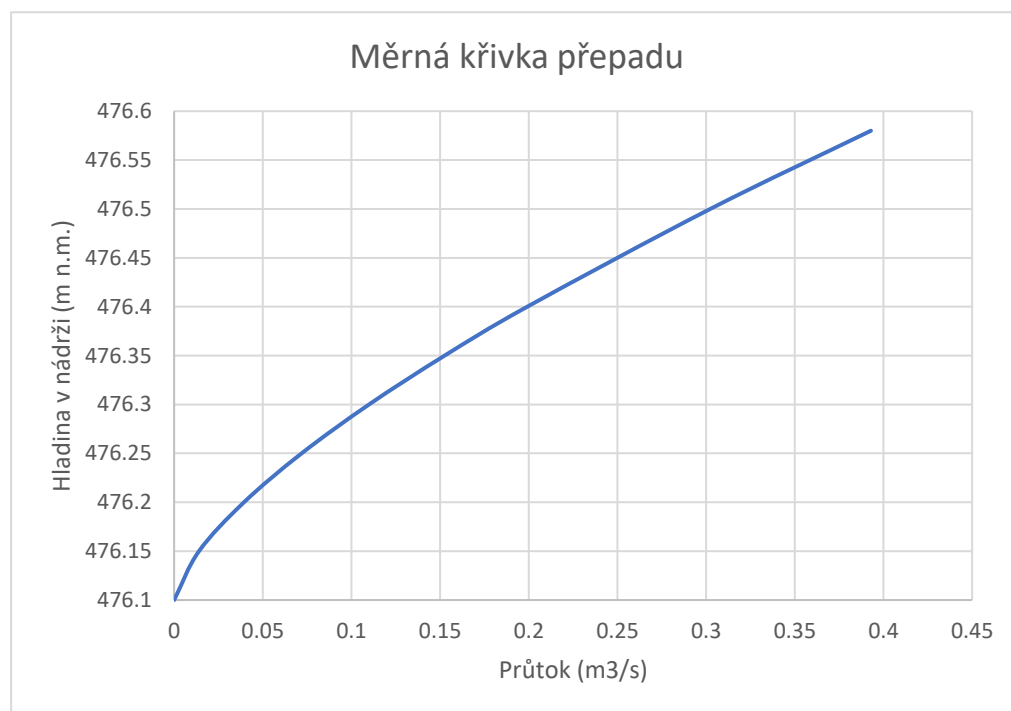
| r | 0,4 | potrubí DN 800 | | | | |
|-------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| n | 0,012 | | | | | |
| i | 0,147 | | | | | |
| y | S | O | R | C | v | Q |
| 0,02 | 0,00334784 | 0,254044 | 0,013178 | 42,26149 | 1,860079 | 0,006227 |
| 0,04 | 0,00939664 | 0,360828 | 0,026042 | 47,3421 | 2,929155 | 0,027524 |
| 0,06 | 0,01712704 | 0,443852 | 0,038587 | 50,54864 | 3,807065 | 0,065204 |
| 0,08 | 0,02616016 | 0,514796 | 0,050817 | 52,92201 | 4,574016 | 0,119657 |
| 0,1 | 0,0362648 | 0,578188 | 0,062721 | 54,81148 | 5,26306 | 0,190864 |
| 0,12 | 0,04727968 | 0,63632 | 0,074302 | 56,38133 | 5,892417 | 0,278592 |
| 0,16 | 0,0715672 | 0,741832 | 0,096474 | 58,88937 | 7,012935 | 0,501896 |
| 0,2 | 0,09826928 | 0,83776 | 0,1173 | 60,83944 | 7,989009 | 0,785074 |
| 0,24 | 0,12682688 | 0,92742 | 0,136752 | 62,41533 | 8,849473 | 1,122351 |
| 0,28 | 0,15678672 | 1,01288 | 0,154793 | 63,71779 | 9,611585 | 1,506969 |
| 0,32 | 0,18775648 | 1,095548 | 0,171381 | 64,80812 | 10,28655 | 1,931367 |
| 0,36 | 0,21938128 | 1,176504 | 0,186469 | 65,7259 | 10,88174 | 2,38725 |
| 0,4 | 0,25132736 | 1,256636 | 0,2 | 66,49779 | 11,402 | 2,865634 |
| 0,44 | 0,28327344 | 1,336768 | 0,211909 | 67,14193 | 11,85025 | 3,35686 |
| 0,48 | 0,31489824 | 1,417724 | 0,222115 | 67,67038 | 12,22775 | 3,850497 |
| 0,52 | 0,345868 | 1,500392 | 0,230518 | 68,09049 | 12,53424 | 4,335192 |
| 0,56 | 0,37582784 | 1,585852 | 0,236988 | 68,40532 | 12,76767 | 4,798446 |
| 0,6 | 0,40438544 | 1,675512 | 0,24135 | 68,61359 | 12,92388 | 5,226228 |
| 0,64 | 0,43108752 | 1,77144 | 0,243354 | 68,70821 | 12,99532 | 5,602118 |
| 0,68 | 0,45537504 | 1,876952 | 0,242614 | 68,67334 | 12,96895 | 5,905737 |
| 0,7 | 0,46638992 | 1,935084 | 0,241018 | 68,59783 | 12,91201 | 6,022029 |
| 0,72 | 0,47649456 | 1,998476 | 0,238429 | 68,47447 | 12,81937 | 6,108362 |
| 0,74 | 0,48552768 | 2,06942 | 0,23462 | 68,29093 | 12,68249 | 6,157698 |
| 0,76 | 0,49325808 | 2,152444 | 0,229162 | 68,02354 | 12,48501 | 6,158334 |
| 0,78 | 0,49930688 | 2,259228 | 0,221008 | 67,61402 | 12,18707 | 6,085086 |
| 0,8 | 0,50265472 | 2,513272 | 0,2 | 66,49779 | 11,402 | 5,731269 |

VODNÍ NÁDRŽ VN 2

d) Přepad přes dluže požeráku

Šířka dluží: 0,75 m

| H (m n.m.) | h (m) | m | | | b (m) | bo (m) | Q (m3/s) |
|-------------|-------|------|----------|------------|-------|--------|----------|
| 467.1 | 0 | 0.38 | 4.429447 | 0 | 0.75 | 0.75 | 0 |
| 467.15 | 0.05 | 0.38 | 4.429447 | 0.01118034 | 0.75 | 0.745 | 0.014 |
| 467.2 | 0.1 | 0.38 | 4.429447 | 0.03162278 | 0.75 | 0.74 | 0.039 |
| 467.25 | 0.15 | 0.38 | 4.429447 | 0.05809475 | 0.75 | 0.735 | 0.072 |
| 467.3 | 0.2 | 0.38 | 4.429447 | 0.08944272 | 0.75 | 0.73 | 0.110 |
| 467.35 | 0.25 | 0.38 | 4.429447 | 0.125 | 0.75 | 0.725 | 0.153 |
| 467.4 | 0.3 | 0.38 | 4.429447 | 0.16431677 | 0.75 | 0.72 | 0.20 |
| 467.5 | 0.4 | 0.38 | 4.429447 | 0.25298221 | 0.75 | 0.71 | 0.30 |
| 467.58 | 0.48 | 0.38 | 4.429447 | 0.33255376 | 0.75 | 0.702 | 0.39 |



Kapacita potrubí DN 500:

r 0.25 m
 pí 3.141593
 r 0.0625
 S 0.19635
 sklon 0.02

Výpočet

D8/3 i 1/2 Q

0.157490131 0.141421 0.535

DN 500 – kapacita 0,535 m³/s

Přepad dluže: 0,39 m³/s VYHOVUJE

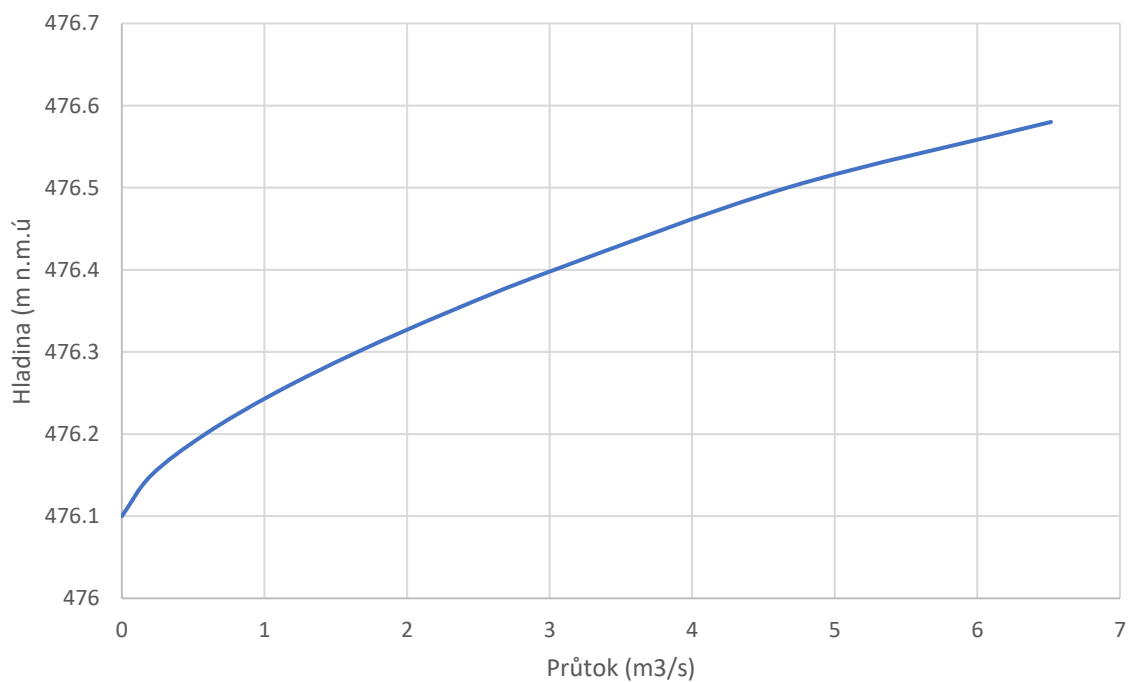
e) Přepad přes bezpečnostní přeliv

Délka přelivné hrany: 11 m

Návrhový průtok: 6,1 m³/s

| H (m n.m.) | h (m) | m | | | b (m) | bo (m) | Q (m ³ /s) |
|-------------|-------|------|------------|----------|-------|--------|-----------------------|
| 467.1 | 0 | 0.38 | 4.42944692 | 0 | 11 | 11 | 0 |
| 467.15 | 0.05 | 0.38 | 4.42944692 | 0.01118 | 11 | 10.995 | 0.207 |
| 467.2 | 0.1 | 0.38 | 4.42944692 | 0.031623 | 11 | 10.99 | 0.58 |
| 467.25 | 0.15 | 0.38 | 4.42944692 | 0.058095 | 11 | 10.985 | 1.07 |
| 467.3 | 0.2 | 0.38 | 4.42944692 | 0.089443 | 11 | 10.98 | 1.65 |
| 467.35 | 0.25 | 0.38 | 4.42944692 | 0.125 | 11 | 10.975 | 2.31 |
| 467.4 | 0.3 | 0.38 | 4.42944692 | 0.164317 | 11 | 10.97 | 3.03 |
| 467.5 | 0.4 | 0.38 | 4.42944692 | 0.252982 | 11 | 10.96 | 4.67 |
| 467.58 | 0.5 | 0.38 | 4.42944692 | 0.353553 | 11 | 10.95 | 6.52 |

Měrná křivka přepadu - bezpečnostní přeliv



f) Odpadní potrubí DN 1000

Potrubí spodní vypusti

| r | 0,5 | potrubí DN 1000 | | | | |
|-------------|-------------------|-----------------|-----------------|-----------------|-----------------|----------------|
| n | 0,014 | | | | | |
| i | 0,109 | | | | | |
| y | S | O | R | C | v | Q |
| 0,025 | 0,005231 | 0,317555 | 0,016473 | 36,03017 | 1,526731 | 0,007986 |
| 0,05 | 0,01468225 | 0,451035 | 0,032552 | 40,36166 | 2,404216 | 0,035299 |
| 0,075 | 0,026761 | 0,554815 | 0,048234 | 43,09541 | 3,124793 | 0,083623 |
| 0,1 | 0,04087525 | 0,643495 | 0,063521 | 45,11883 | 3,754298 | 0,153458 |
| 0,125 | 0,05666375 | 0,722735 | 0,078402 | 46,7297 | 4,319857 | 0,244779 |
| 0,15 | 0,0738745 | 0,7954 | 0,092877 | 48,06808 | 4,836426 | 0,357289 |
| 0,2 | 0,11182375 | 0,92729 | 0,120592 | 50,20632 | 5,756134 | 0,643672 |
| 0,25 | 0,15354575 | 1,0472 | 0,146625 | 51,86885 | 6,557284 | 1,006843 |
| 0,3 | 0,198167 | 1,159275 | 0,17094 | 53,21239 | 7,263542 | 1,439394 |
| 0,35 | 0,24497925 | 1,2661 | 0,193491 | 54,3228 | 7,889075 | 1,93266 |
| 0,4 | 0,2933695 | 1,369435 | 0,214227 | 55,25237 | 8,44308 | 2,476942 |
| 0,45 | 0,34278325 | 1,47063 | 0,233086 | 56,03482 | 8,931601 | 3,061603 |
| 0,5 | 0,392699 | 1,570795 | 0,25 | 56,6929 | 9,358626 | 3,675123 |
| 0,55 | 0,44261475 | 1,67096 | 0,264887 | 57,24206 | 9,726541 | 4,305111 |
| 0,6 | 0,4920285 | 1,772155 | 0,277644 | 57,69259 | 10,03639 | 4,938191 |
| 0,65 | 0,54041875 | 1,87549 | 0,288148 | 58,05076 | 10,28795 | 5,559803 |
| 0,7 | 0,587231 | 1,982315 | 0,296235 | 58,31917 | 10,47955 | 6,153918 |
| 0,75 | 0,63185225 | 2,09439 | 0,301688 | 58,49674 | 10,60776 | 6,70254 |
| 0,8 | 0,67357425 | 2,2143 | 0,304193 | 58,57741 | 10,6664 | 7,184613 |
| 0,85 | 0,7115235 | 2,34619 | 0,303268 | 58,54767 | 10,64476 | 7,573998 |
| 0,875 | 0,72873425 | 2,418855 | 0,301272 | 58,4833 | 10,59802 | 7,723141 |
| 0,9 | 0,74452275 | 2,498095 | 0,298036 | 58,37812 | 10,52199 | 7,833861 |
| 0,925 | 0,758637 | 2,586775 | 0,293275 | 58,22165 | 10,40963 | 7,897133 |
| 0,95 | 0,77071575 | 2,690555 | 0,286452 | 57,99368 | 10,24755 | 7,89795 |
| 0,975 | 0,780167 | 2,824035 | 0,27626 | 57,64454 | 10,003 | 7,80401 |
| 1 | 0,785398 | 3,14159 | 0,25 | 56,6929 | 9,358626 | 7,350246 |