problematic cases

| | case | | Characteristics | Results |
|---|---|---|---|---|
| | **example** | | Location | dominant variables (for individual WL) |
| | gamma_char = | 1.11 | Geology | sensitivity SF to WL |
| | beta = | 5.55 | data source | Uplift and at which WL |
| | | | Misc | Slip plane variation |
| | | | **Characteristics** | **Results** |
| 1 | **Pannerden_newkernel** | | Nederrijn | uncertainty dominated by Su ratio (mostly "Klei antropogeen") and to a lesser extend model uncertainty |
| | gamma_char = | 1.29 | mainly sand dike core on top of (antropogenic) clay | SF_char chages from 1.36 to 1.31 with WL varying from +12.8m to crest +16m, sharp lowering in SF above WL |
| | beta = | 4.05 | based on default values due to absense reliable lab data | maybe strength reduction, sigma'v > 0 |
| | | | drained behaviour dike body, modelled clay on clay | slip plane mainly through "klei antropogeen" layer, smal slip plane slightly increasing (towards the crest) with WL |
| 2 | **Lekdijk1_West** | | Along the Lek (west), around Streefkerk (other side of the river) | Uncertainty dominated by the model factor and some Su layers (e.g. "klei van tiel", "keli van gorkum") |
| | gamma_char = | 0.78 | Clay dike on clay, with thick layer of clay from Tiel, over Hollandve | SF_char chages from 0.82 to 0.73 with WL varying from +1.2m to crest +5m |
| | beta = | 0.84 | based on default values due to absense reliable lab data | no uplift |
| | | | | deep and long slip plane, barely changes with WL and goes until the bottom of the blanket (Gorkum) |
| 3 | **Lekdijk2_Streefkerk** | | Along the Lek, on the west | uncertainty dominated by the dike body (OB, OA=sand) and the model unc. |
| | gamma_char = | 1.34 | Clay on clay, with a thick peat layer in the middle of the thick clay- | SF_char chages from 1.32 to 1.15 with WL varying from +2.5m to crest +6m |
| | beta = | 5.51 | based on local measurements and some default (however, these | no uplift |
| | | | | shallow slip plane for WL below +3m and deep slip plane for higher WL |
| 4 | **Lekdijk3_East** | | Along the Lek, mid way circa Lopik | uncertainty dominated by the model unc. and Su of layers "dijkmaterial", "klei_boven_veen" and "klei_onder_ve |
| | gamma_char = | 1.72 | Clay on clay, with thick peat/clay layer (~12m), small sand layer ur | SF_char chages from 2.2 to 1.6 with WL varying from +2.5m to crest +6.5m |
| | beta = | 6.01 | parameters from Arcadis report (regional) except POP and Cov of | no uplift |
| | | | drained dike material and merged layers | deep slip plane ? |
| 5 | **Lekdijk4_Eastcs3** | | Along the Lek, on the west, circa the Honswijk fort | Uncertainty dominated by the model unc. and friction of layer "dijkmateriaal". Other relatively relevant Su layers: |
| | gamma_char = | 1.51 | Clay on clay, with thick intercalated peat/clay/sand layers (~9m) | SF_char chages from 2.4 to 1.5 with WL varying from +4.2m to crest +8.2m |
| | beta = | 5.70 | parameters from Arcadis report (regional) except POP and Cov of | no uplift |
| | | | | deep slip plane for WL below ~ +6m and shallow slip plane for higher WL |
| 6 | **Gowa 1** | | along the Waal, upstream of Biesbosch (Gorinchem) | uncertainty dominated by Su of layers "Venige Klei", also "oud dijksmat", "Klei 14-16" and to some extend the m |
| | gamma_char = | 1.20 | Clay on clay dike, with big portion of Venige klei and some clay un | SF_char constant from WL +2.5m to +5.5m, drops from 1.31 to 1.18 with WL varying from +5.5m to crest +8.7m |
| | beta = | 5.64 | parameters from regional report, except POP, cov of the m value, | no uplift |
| | | | | deep slip plane barely changes, it gets slightly longer with higher WL |
| 7 | **Gowa2** | | along the Waal, upstream of Biesbosch (Gorinchem) | uncertainty dominated by Su of layers "Venige Klei", also "oud dijksmat", "Klei 14-16" and to some extend the m |
| | gamma_char = | 1.49 | Clay on clay dike, with big portion of Venige klei and some clay un | SF_char constant from WL +2.2m to +3.5m, drops from 1.73 to 1.50 with WL varying from +3.5m to crest +6.7m |
| | beta = | 6.18 | parameters from regional report, except POP, cov of the m value, | no uplift |
| | | | | deep slip plane barely changes, it gets slightly longer (towards the crest) with higher WL |
| 8 | **Gowa3_TG355** | | along the Waal, upstream of Biesbosch (Brakel) | uncertainty dominated by Su ratio (especially layers "Venige klei" and "oude dijkmateriaal" ) and model factor; to |
| | gamma_char = | 1.01 | clay on clay, Non-tidal Rhine, layers of "klei', "venige klei" and larg | SF changes from 1.16 to 1 with WL varying from +3.5m to crest +7.7m; SF based on mean values much higher |
| | beta = | 4.02 | Based on regional GOWA triaxial and DSS for S; defaults for POP | no uplift |
| | | | case computed also with one berm | Slip plane hardly changes with WL, is relatively shallow and mainly goes throug dike body and upper clay layer |
| 8a | **GoWa3_berm_4** | | same as before | uncertainty dominated by Su ratio (especially layers "Venige klei" and "oude dijkmateriaal" ) and model factor; to |
| | gamma_char = | 1.17 | 4 meter berm | SF changes from 1.41 to 1.17 with WL varying from +3.5m to crest +7.7m |
| | beta = | 5.45 | | no uplift |
| | | | | Slip plane hardly changes with WL, it becomes longer with the WL, is relatively shallow and mainly goes throug |
| 9 | **Gowa4_TG401** | | along the Waal, upstream of Biesbosch (Gorinchem) | dominant variables are friction angle, model and Su (mainly sand from dike core and two other layers) |
| | gamma_char = | 1.30 | Non-tidal Rhine, sand core in dike body, modelled clay on clay an | High SF_char, even higher for mean values of the strength parameters (1.72 to 1.47, with WL changing from |
| | beta = | 7.21 | Based on regional GOWA triaxial and DSS for S; defaults for POP | no uplift |
| | | | case computed also with one berm | Slip plane through sand core |

| | | | | |
|---|---|---|---|---|
| 10 | **Franeker_loc** | | Waddenzeedijk, north of Leeuwarden | uncertainty dominated by Su of Klei.cal, followed by model unc. And also, to some extend, the friction angle of th |
| | gamma_char = | 0.95 | Sand dike on clay with thick cover layer (~7m) | SF_char changes from 1.02 to 0.82 with WL varying from +1.5m to crest +8.2m; becomes steeper after +7.1m |
| | beta = | 2.85 | Local data (CPT for POP and lab for Su), except for m values | uplift for high WL ? |
| | | | | Slip plane hardly changes with WL, is relatively shallow and mainly goes throug dike body and upper clay layer |
| 10a | **Franeker_berm** | | same as before | uncertainty dominated by Su of Klei.cal, followed by model unc. And also, to some extend, the friction angle of th |
| | gamma_char = | 1.04 | 10 meter berm | SF_char changes from 1.12 to 0.88 with WL varying from +1.5m to crest +8.2m; becomes steeper after +7.1m |
| | beta = | 4.23 | | uplift for high WL ? |
| | | | | Slip plane hardly changes with WL, is a deep plane (to the bottom of the blanket layer) |
| 11 | **Ijsselmeerdijk** | | northern part of the Lake IJssel, west of Friesland | Su from the soil, model factor, leakage length becomes important with high WL |
| | gamma_char = | 0.84 | simple schematization of a dike body of antropogene klei on top o | SF_char changes from 0.85 to 0.59 with WL varying from +0.2m to crest +4.2m; becomes steeper after +3.1m |
| | beta = | 1.83 | based on default values | uplift |
| | | | | Slip plane gets slightly longer (along the interface of blanket and aquifer) with higher WL |
| 11a | **Ijsselmeerdijk_berm** | | same as before | Su from the soil, model factor, leakage length becomes important with high WL |
| | gamma_char = | 0.99 | 15 meter berm (big hole filled) | SF_char changes from 1.0 to 0.62 with WL varying from +0.2m to crest +4.2m; becomes steeper after +2.5m |
| | beta = | 3.56 | | uplift/reduction |
| | | | | Slip plane gets slightly longer (along the interface of blanket and aquifer) with higher WL |
| 12 | **Zuiderzeedijk** | | in the Katelmeer, north side | uncertainties dominated by the Su from the humeous clay, the model unc. And the friction of the sand core |
| | gamma_char = | 1.09 | Sand dike on clay, blanket of 4m of clay and humeus clay | SF_char changes from 1.25 to 0.82 with WL varying from -0.25m to crest +4.2m |
| | beta = | 3.67 | based on default values | strength reduction |
| | | | | Slip does not change with WL |
| 12a | **Zuiderzeedijk_berm_20** | | same as before | uncertainties dominated by the Su from the humeous clay, the model unc. and the yield stress point 387 |
| | gamma_char = | 1.18 | 20 meter berm | SF_char changes from 1.47 to 1.07 with WL varying from -0.25m to crest +4.2m |
| | beta = | 6.33 | | strength reduction |
| | | | | Slip does not change with WL |
| 13 | **41_M_401** | | Along the Maas, downstream of Appeltern | uncertainties dominated by the Su from the clay layers, the model unc. and the to some extend the yield stress p |
| | gamma_char = | 0.99 | simple schematization of a dike body and blaknket layer of clay (4 | SF_char changes from 1.12 to 0.4 with WL varying from +6.25m to crest +8.7m; becomes steeper after +7.9m |
| | beta = | 4.45 | based on default values | strength reduction |
| | | | | Slip does not change with WL |
| 13a | **41_M_401_berm_10** | | same as before | uncertainties dominated by the Su from the clay layers, the model unc. and the to some extend the yield stress p |
| | gamma_char = | 1.17 | 10 meter berm | SF_char changes from 1.23 to 1.11 with WL varying from +6.25m to crest +8.7m |
| | beta = | 5.12 | | strength reduction |
| | | | | Slip does not change with WL |
| 14 | **Bergambacht** | | Along the Lek (west), around Streefkerk (other side of the river) | uncertainty dominated by Su of dijkmaterial, model unc. and also Su of hollandveen and Gorkum licht onder dijk |
| | gamma_char = | 0.90 | Clay on clay, with a thick peat layer in the middle of the thick clay- | SF_char constant (0.91) from +1.5m to +3.0m, changes from 0.91 to 0.88 with WL varying from +3m to crest +5 |
| | beta = | 3.13 | Based on report on local data, except exponent m | no uplift |
| | | | | medium deep slip does not change with WL |
| 14a | **Bergambacht_berm** | | same as before | uncertainty dominated by Su of dijkmaterial, model unc. and also Su of hollandveen and Rand geul zandige klei |
| | gamma_char = | 1.03 | 15 meter berm | SF_char constant (1.04) from +1.5m to +3.0m, changes from 1.04 to 0.99 with WL varying from +3m to crest +5 |
| | beta = | 4.65 | | no uplift |
| | | | | deep slip does not change with WL |
| 15 | **Uitdam** | | In the west of the Markermeer | xxx |
| | gamma_char = | 0.83 | Clay on clay with a 12 m blanket of mainly clay (body), humeus cl | SF_char changes from 0.83 to 0.78 with WL varying from +0m to crest +3.1m |
| | beta = | 2.79 | Based on report of regional data | no uplift |
| | | | | relatively shallow sleep plane for low WL and deep for high WL |
| 15a | **Uitdam_berm** | | same as before | xxx |
| | gamma_char = | 1.08 | 13 meter berm | SF_char changes from 1.08 to 1.03 with WL varying from +0m to crest +3.1m |
| | beta = | 5.39 | | no uplift |
| | | | | deep slip plane changes slightly with the WL, it goes deeper (until the edge of het blanket/aquifer) |

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|---|---|---|---|---|
| 16 | **Afsluitdijk** | | In between the Wanden sea and the Ijsselmeer | model factor, Su of Klei_sand and klei_humeus_sand and some yield stress points |
| | gamma_char = | 1.04 | simple schematization of a sand dike body and blaknket layer of c | SF_char changes from 1.22 to 0.90 with WL varying from +1.0m to crest +10m |
| | beta = | 4.87 | based on default values | no uplift |
| | | | | deep slip does not change with WL |
| 17 | **Livedike** | | along the Eems (delta), south of Eemshaven | xxx |
| | gamma_char = | 1.32 | sand dike body and blaknket layer of clay (12 m) | xxx |
| | beta = | 8.45 | Su based on regional data, rest based on default values | no uplift |
| | | | | deep slip slightly changes with WL, becoming longer, towards the crest |
| 18 | **41_M_28** | | Near Nijmegen, along the Maas | uncertainty dominated by Su ratio (especially layer "Ks-dijklichaam", but also th rest of the clay layers), LL becor |
| | gamma_char = | 0.86 | Non-tidal Maas, clay on clay dike, type of clay 'Ks', with a blanket | SF_char chages from 1.03 to 0.85 with WL varying from +10m to crest +13.2m, there is an incresed sensitivity f |
| | beta = | 4.19 | Based on default data from the schematization guidelines of STBI | there is uplift for WL>12 m+NAP |
| | | | case computed also with one berm | Slip plane does not change with WL, it goes until the bottom of the (relatively thin) blanket |
| 18a | **41_M_28_berm_5** | | same as before | uncertainty dominated by Su ratio (especially layer "Ks-dijklichaam", but also th rest of the clay layers), model ur |
| | gamma_char = | 1.09 | 5 meter berm | SF_char chages from 1.55 to 1.15 with WL varying from +10m to crest +13.2m, there is an incresed sensitivity f |
| | beta = | 5.28 | | there is uplift for WL>11.5 m+NAP |
| | | | | Slip plane does not change with WL, it goes until the bottom of the (relatively thin) blanket |
| 19 | **41_W_237_lte_1** | | Between Tiel and Nijmegen, along the Waal | uncertainty dominated by Su ratio (especially layer "dijklichaam", but also the rest of the clay layers) |
| | gamma_char = | 1.00 | Non-tidal Rhine, clay on clay dike, type of clay 'Ks', covered with a | SF_char chages from 1.15 to 1.05 with WL varying from +6m to crest +13.2m, there is an incresed sensitivity fo |
| | beta = | 4.16 | Based on default data from the schematization guidelines of STBI | there is uplift/reduction for WL>10.5m+NAP |
| | | | case computed also with one berm | Slip plane barely changes with the WL, it goes until the bottom of the (relatively thin) blanket |
| 19a | **41_W_237_lte_4** | | same as before | uncertainty dominated by Su ratio (especially layer "dijklichaam", but also the rest of the clay layers) |
| | gamma_char = | 1.08 | 2.5 meter berm | SF_char chages from 1.32 to 1.07 with WL varying from +6m to crest +13.2m, there is an incresed sensitivity fo |
| | beta = | 4.44 | | there seems to be uplift/reduction for WL>10m+NAP |
| | | | | Slip plane changes with the WL, due to uplift, it goes until the bottom of the (relatively thin) blanket and becomes |
| 20 | **41_W_270_0** | | Between Tiel and Nijmegen, along the Waal | uncertainty dominated by Su ratio (especially layer "onder dijk", "dijkmateriaal", but also th rest of the clay layers |
| | gamma_char = | 0.94 | Non-tidal Rhine, clay on clay dike, dike body from clay, and prese | SF_char chages from 1.10 to 0.93 with WL varying from +4.5m to crest +12.5m |
| | beta = | 2.72 | Based on default data from the schematization guidelines of STBI | reduction of strength, but no uplift ? |
| | | | case computed also with one berm | Slip plane slightly changes with the WL, it goes until aquifer border, and longer for higher WL |
| 20a | **41_W_270_25** | | same as before | uncertainty dominated by Su ratio (especially layer "onder dijk", "dijkmateriaal", but also th rest of the clay layers |
| | gamma_char = | 1.24 | 25 meter berm | SF_char chages from 1.47 to 1.22 with WL varying from +4.5m to crest +12.5m |
| | beta = | 4.53 | | reduction of strength, but no uplift ? |
| | | | | Slip plane barely changes with the WL, it goes until "klei onder dijk" for lower WL, and deeper and longer for hig |
| 21 | **43001007_0** | | Along the river Waal, upstream of Vuren (near Gorkum) | uncertainty dominated by Su ratio (especially layer "dijklichaam", but also some other clay layers) **and model** |
| | gamma_char = | 0.91 | Non-tidal Rhine, clay on clay dike, dike body from clay, and prese | SF_char chages from 0.96 to 0.89 with WL varying from +2.7m to crest +7.5m |
| | beta = | 2.94 | Based on default data from the schematization guidelines of STBI | no uplift |
| | | | case computed also with two berms | Slip plane barely changes with WL, it goes in the bottom part of the blanket |
| 21a | **43001007_15** | | same as before | uncertainty dominated by Su ratio (especially layer "H_Ro_k&z onder", but also "dijklichaam") **and model** |
| | gamma_char = | 1.11 | 15 meters berm | SF_char chages from 1.24 to 1.08 with WL varying from +2.7m to crest +7.5m |
| | beta = | 5.54 | | no uplift |
| | | | | Slip plane barely changes with WL, it goes in the bottom part of the blanket |
| 21b | **43001007_25** | | same as before | uncertainty dominated by Su ratio (especially layer "H_Ro_k&z onder", but also "dijklichaam") **and model** |
| | gamma_char = | 1.28 | 30 meters berm | SF_char chages from 1.51 to 1.20 with WL varying from +2.7m to crest +7.5m |
| | beta = | 7.54 | | no uplift |
| | | | | Slip plane barely changes with WL, it goes in the bottom part of the blanket |
| 22 | **Dp_5_521_lte_steeper_1** | | Along the river Ijssel, upstream of Veessen (between Deventer an | uncertainty dominated by Su ratio (especially layer "Klei dijk b") |
| | gamma_char = | 0.84 | Non-tidal Rhine, clay on clay dike, dike body from clay, and prese | SF_char chages from 0.93 to 0.84 with WL varying from +2.5m to crest +7m |
| | beta = | 1.92 | Based on default data from the schematization guidelines of STBI | uplift potential & reduction |

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|---|---|---|---|---|
| | | | | Slip plane barely changes with WL, it goes in the bottom part of the blanket |
| 22a | **Dp_5_521_noberm** | | same as before | uncertainty dominated by Su ratio (especially layer "Klei dijk b") |
| | gamma_char = | 1.02 | original talude | SF_char chages from 1.19 to 1.06 with WL varying from +2.5m to crest +4.7m |
| | beta = | 3.49 | | uplift potential & reduction |
| | | | | Slip plane barely changes with WL, it goes in the bottom part of the blanket and then into the aquifer! |
| 23 | **dp_190+000_basissom_0** | | Along the Lek, on the west, downstream of Streefkerk | uncertainty dominated by Su ratio (especially layer "dijksmateriaal oud") |
| | gamma_char = | 0.55 | Tidal Rhine, clay on clay, multi layer cross section, mainly compos | SF_char chages from 0.65 to 0.55 with WL varying from +1m to crest +4.5m |
| | beta = | -2.22 | Based on default data from the schematization guidelines of STBI | Uplift for high water levels |
| | | | case computed also with one berm | Slip plane does not change with WL, it goes until the bottom of the blanket (deep and long) |
| 23a | **dp_190+000m_basissom_30** | | same as before | uncertainty dominated by Su ratio (especially layer "gorkum zwaar" (bottom of the blanket)) |
| | gamma_char = | 0.88 | 30 meters berm | SF_char chages from 0.94 to 0.88 with WL varying from +1m to crest +4.5m |
| | beta = | 3.00 | | Uplift for high water levels |
| | | | | Slip plane does not change with WL, it goes until the bottom of the blanket (deep and long) |
| 24 | **DP92_0** | | Along the river Ijssel, upstream of Zutphen | uncertainty dominated by Su ratio (especially layer "klei dijk" and "klei zandig") |
| | gamma_char = | 0.82 | Non-tidal Rhine, clay on clay dike, dike body from clay, and presei | SF_char chages from 1.03 to 0.84 with WL varying from +8.2m to crest +11.3m |
| | beta = | 2.27 | Based on default data from the schematization guidelines of STBI | uplift/reduction for WL>10.2m+NAP |
| | | | case computed also with one berm | Slip plane does not change with WL |
| 24a | **Dp92_5** | | same as before | uncertainty dominated by Su ratio (especially layer "klei dijk" and "klei zandig") |
| | gamma_char = | 1.04 | 5 meters berm | SF_char chages from 1.18 to 1.04 with WL varying from +8.2m to crest +11.3m |
| | beta = | 4.21 | | uplift/reduction for WL>10.2m+NAP |
| | | | | Slip plane does not change with WL |
| 25 | **DV13_0** | | In the west of the Ijsselmeer, south of Den Oever | uncertainty dominated by Su ratio (especially layer "klei cal" and "klei dyk") **and model** |
| | gamma_char = | 1.22 | Ijssel lake area, clay dike on clay, old dike in clay, hightened with a | SF_char chages from 1.22 to 1.02 with WL varying from +1.75m to crest +3.7m (constant from -0.6 to 1.75) |
| | beta = | 5.08 | Based on default data from the schematization guidelines of STBI | no uplift |
| | | | case computed also with one berm | Slip plane barely changes with WL, goes to the bottom of "KLEI_cal" |
| 25a | **DV13_3** | | same as before | uncertainty dominated by Su ratio (especially layer "klei cal" and "klei dyk") **and model** |
| | gamma_char = | 1.55 | 15 meters berm | SF_char chages from 1.55 to 1.36 with WL varying from -0.6m to crest +3.7m (constant from -0.6 to 1.75) |
| | beta = | 7.24 | | no uplift |
| | | | | Slip plane barely changes with WL, goes to the bottom of "KLEI_cal" |
| 26 | **dwp0_lte_0** | | Along the Oude Maas, south of Rotterdam, near Barendrecht | uncertainty dominated by model factor and slightly Su ratio of the layer "Gorkum licht" |
| | gamma_char = | 0.96 | Tidal Rhine, clay on clay, mix of Hollandveen and Gotkum licht un | SF_char chages from 1.08 to 0.96 with WL varying from +3.1m to crest +4.4m (constant from 1.8 to 3.1) |
| | beta = | 4.97 | Based on default data from the schematization guidelines of STBI | no uplift |
| | | | | Slip plane does not change with WL |
| 27 | **wsno_0161_0** | | Western Scheldt near Kruidinigen, east of Goes | uncertainty dominated by Su ratio (especially layer "Calais Klei") and model |
| | gamma_char = | 1.07 | Western Scheldt area, sand on clay, blanket ~ 6m of Duinkerke kl | SF_char chages from 1.15 to 0.85 with WL varying from +2.9m to crest +9m |
| | beta = | 4.19 | Based on default data from the schematization guidelines of STBI | no uplift |
| | | | case computed also with one berm | Slip plane barely changes with WL, goes to the bottom of "Calais klei" (blanket) |
| 27a | **wsno_0161_20** | | same as before | uncertainty dominated by Su ratio (especially layer "Calais Klei") and model. after meta model the uncertainty is |
| | gamma_char = | 1.11 | 20 meters berm | SF_char chages from 1.33 to 0.95 with WL varying from +2.9m to crest +9m |
| | beta = | 5.74 | | no uplift |
| | | | | Slip plane barely changes with WL, goes to the bottom of "Calais klei" (blanket) |

*beta = reliability index*
*Fp = fragility curve point*
*WL = Water Level*
*FC = Fragility curve (beta vs WL)*

| Check level 1 | Comments on check level 1 |
|---|---|
| I miss the dsx at various WL | See 2nd computation (beta 1st = 4.05, beta 2nd = 3.93) |
| FC not always decreasing | |
| SF_char does zig-zag | very sensitive to grid settings, in the end the beta curve is decreasing (iterations converge to the correct slip plane) |
| I miss the dsx at various WL | |
| The toe location should be moved to make the PL1 more reali | recalculation |
| I miss the dsx at various WL | |
| I miss the dsx for design point | |
| design point of the WL higher than the crest | |
| MHW and norm do not match | corrected for SF |
| MHW and norm do not match | corrected for SF |
| design point of the WL higher than the crest | |
| MHW and norm do not match | corrected for SF |
| MHW and norm do not match | corrected for SF |
| MHW and norm do not match | corrected for SF |
| Design point water level higher than crest; high influence water | level and high beta explain this |

ne sand and Su of other clay layers

ne sand and Su of other clay layers

slip plane going trhough the sand for high water levels!!

slip plane going trhough the sand for high water levels!!

.2m

(deeper and under the dike)

.2m

parameters not correct (wrong standard deviation)

parameters not correct (wrong standard deviation)

| | | |
|---|---|---|
| seems to be giving quite high beta!! check norm beta | | |
| parameters under review!! | | |
| nes slightly important after 12 m +NAP<br>or WL > 12m+NAP | curve corrected, checked with auto calculation for 13 water levels | |
| ıc. And to some extend the yield stress points<br>or WL > 11.5m+NAP | | |
| sudden fall ?<br>check other intermediate files saved? | sudden fall is caused by uplift for fragility points 4 and 5<br>looks all OK, the SF in all the intermediate files are almost equal.<br>the slip plane also changes from the point that uplift occurs: from shallow to deep | |
| sudden fall ?<br>SF last WL = 1001 | sudden fall is not caused by multiplication factor for uplift for fragility points 4 and 5<br>the long slip circle does look strange<br>Additionally, there is a horizontal split in the layers below and next to the dike, so<br>the bottom of hydrostatic zone is wrongly place. Needs recalculation | Tried all these optimizations, but did not succeed to get a prope<br>Result is unreliable.<br>--> schematisering behoeft mogelijk nog aanpassing |
| s longer | | |
| Su dijkmaterial is not consistent with other cases, 0.25 instead | Su dijkmaterial is not consistent with other cases, 0.25 instead of 0.31<br>A large part of the slip circle is actually through this material. The beta could be higher | |
| ) | Su dijkmaterial is not consistent with other cases, 0.25 instead of 0.31<br>A large part of the slip circle is actually through this material. The beta could be higher | |
| her WL | | |
| | check slip circle: SF in design point is 1.03. Equals the model factor so should be OK<br>curve corrected: 2nd point is lower than the rest. 3rd, 4th, 5th have each a lower slip circle.<br>The first iteration in the inner loop for the 2nd water level resulted beta 2.95 so OK to delete | |
| dsx file of the design point gives a slip plane through the berm | This was due to bad grid settings. The minimum safety curve is at a different position and has SF equal to the model factor<br>Moreover, all fragility points are calculated with the slip circle through the crest | |

| | | |
|---|---|---|
| zig-zag > corrected curve, check if it is good choice or if it nee | SF-wl-curve (mean and char) shows exactly the same behaviour with decreasing and increasing curve<br>1st and 2nd water level shallow slip circle, 3rd 4th 5th deep slip circles + increasing beta<br>Needs review and recalculation | Tried all these optimizations, but did not succeed to get a prope<br>Result is unreliable. |
| zig-zag > corrected curve, check<br>last design point CRASHES!<br>so, possibly it is a good thing to remove the last point from the | Highest water level can not be calculated, because PL1 exceeds geometry.<br>Deleting is the best solution, since the design point is at a lower water level.<br>curve! | |
| corrected curve, check | It looks like bad convergence for the FORM iteration of the 4th water level, since the Leakage length outwards<br>is very important in that specific calculation and the SF is not equal to the model factor design point m 1.04 vs SF 1.05.<br>It looks like deleting is the best solution, rather than recalculating with with more FORM iterations | |
| corrected curve, check | The prob calculation for the 4th water level did not converge in the inner loop. It resulted an endless loop.<br>Deleting is the best solution, since the design point is at a lower water level. | |
| needs recomputation MM with 4 Fp to aquire final beta<br>corrected curve, check | It is not clear which of the fragility points has to be deleted. Anyway it does not (yet) influence the final resu<br>advised to check the case with an automatic calculation for more water levels and a refined grid<br>Additionally: the soils below and next to the dike should be separate materials to prevent averageing. | Tried all these optimizations, but did not succeed to get a prope<br>Result is unreliable. |
| strange value @ SF_char (dip)<br>used recalculated SF | The strange dip for the 2nd waterlevel in the SF-wl for characteristic values is caused by an error in the kernel which is<br>probably fixed now. For the calib, use the recalculated SF (1.55) | |
| sophia, check + note<br>multiplication factor is present!!!!!<br>2aquifers?<br>GHW missing!! | Calculation of the case should be redone with the following amendments<br>multiplication should not be input<br>just a sandy layer, no 2 aquifers<br>GHW should be input | Curve goes a bit up first, but then decreases. Deleted the 1st a |
| WNC parameters<br>multiplication factor is present!!!!! | Calculation of the case should be redone with the following amendments<br>No multiplication factor, no traffic load, WNC PL1 defaults, Ringtoets WTI, Sand dike on clay | Case finished and approved, |
| sophia, check + note<br>WNC ok! | Not enough tangent lines used.<br>The SF in the designpoint (1.08) is not equal to the model factor in the design point (1.12) | recalculating on wcp0003 |