

*** DRAFT – NOT FOR FILING ***

3745-511-20

Hydrostatic uplift analysis and reporting.

(A) The hydrostatic uplift analysis of the liner system shall demonstrate that the facility is designed to have a factor of safety of at least 1.4 against failure of any engineered component due to hydrostatic uplift at the surfaces described in paragraphs (B)(1) to (B)(3) of this rule and upon the structures described in paragraph (B)(4) of this rule. The factor of safety shall not be based on any influence or depression of the phreatic surface or peizometric surface caused by the operation or use of temporary or mechanical ground water control structures.

(B) Analysis for the hydrostatic uplift shall address the following:

(1) Critical locations along the surface where the liner system recompacted soil liner is to be placed.

(2) If no liner system recompacted soil liner will be used, the critical locations along the surface where the leachate collection system drainage layer will be placed.

(3) If no liner system recompacted soil liner and no leachate collection system drainage layer will be used, the critical locations located two feet below the basal elevations of the disposal limits.

(4) Underground structures at the facility.

(C) The geotechnical and stability analyses of the liner system shall not rely on any of the tensile qualities of any of the geosynthetic engineered components included in the design other than those engineered components used primarily for tensile reinforcement.

(D) The geotechnical and stability analyses report identified in rule 3745-511-10 of the Administrative Code shall contain a section titled "Hydrostatic Uplift Analysis" which shall include the following information:

(1) The scope, extent, and findings from the site investigation bearing on hydrostatic uplift.

(2) A description of the rationale used for the selection of the analysis input parameters.

(3) A description of the method used to calculate hydrostatic uplift.

(4) A description of the assessed conditions.

(5) A description of the rationale used for the selection of the critical cross section that, at a minimum, shall consider the worst case interaction of the highest

***** DRAFT – NOT FOR FILING *****

critical hydrostatic surface with the surfaces and structures identified in paragraphs (B)(1) to (B)(4) of this rule.

- (6) An isopach map showing the differences between the highest critical hydrostatic surface and the top of the surfaces and basal elevations of the structures identified in paragraphs (B)(1) to (B)(4) of this rule.
- (7) An isopach map of the thickness of material between the top of the surface identified in paragraphs (B)(1) to (B)(3) of this rule and the top of the zone of saturation.
- (8) A drawing of each critical cross section that shows the details of the input information for the analysis model including the following:

 - (a) The material boundaries.
 - (b) The applicable dimensions, including the difference between the top of the highest critical hydrostatic surface and the top of the zone of saturation and the difference between the top of the surfaces identified in paragraphs (B)(1) to (B)(3) of this rule and the height, width, length, and diameter of the structures identified in paragraph (B)(4) of this rule.
 - (c) The material types.
 - (d) The in situ unit weights and saturated unit weights of the materials.
- (9) All inputs, outputs, and calculations used for the hydrostatic uplift analysis. If a computer was used for any calculations, the computer inputs and outputs shall also be included.