How to create, draw and export geological surfaces in Aarhus Workbench

Contents

Introduction

This guide will explain how to create, draw, grid and export geological surfaces in Aarhus Workbench. Surfaces can be exported as shape file or a xyz data file.

The geological surfaces are drawn on profiles, and it is possible to break a surface. The icons used for drawing are:

New Surface	- Create new surface
	- Draw on profile
	- Move point
	- Delete points
	- Default select tool – only used to select other things than geological surfaces
	- Select points
	- Break surface
	- Show/hide error bars
Uncertainty [m] 5 ▼ Update	- Change uncertainty

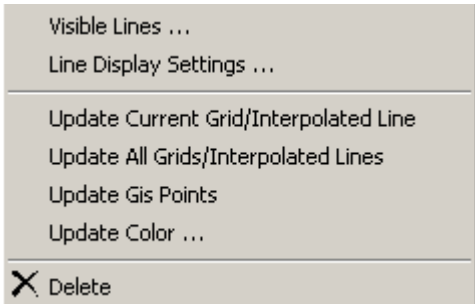The user has also gridding and display options when right-clicking on a geological surface:

Visible Lines ...	- Show drawn geological surfaces and grids from other profiles
Line Display Settings ...	- Change display of plotted surfaces and grids.
Update Current Grid/Interpolated Line	- Update all/current grid with changes made. Grid options appears when grid has not been made from drawn surfaces.
Update All Grids/Interpolated Lines	
Update Gis Points	- Update GIS points on GIS interface.
Update Color ...	- Change color of geological surface
✕ Delete	- Delete surface.

Create geological surface

1. Open a profile in Aarhus Workbench.

2. Press "New Surface" and give the surface a name.

3. Press the draw icon and start drawing the surface. Drawn points are saved on the go.

4. The created surfaces are listed on every profile and the user can continue on the same surface on different profiles to create a 3D grid.

5. Surfaces can't be broken between profiles.

Move point

1. Select the move point icon . Click and hold mouse button on the selected point and move the point.

Delete points

1. Use the select points icon and select either a single point or draw a square to select several points.

2. Click the delete points icon to delete selected points.

Break surfaces

1. Use the select points icon and select a single point. Several points can't be selected at the same time when breaking a surface.

2. Click the break surface icon to delete the point and break the surface.

3. If you want to draw where the surface has been broken, a dialog will ask if you want to unbreak the surface, or add point to the left or right of the break.

4. It is not possible to unbreak a surface at the edges of the profile where a point does not have to neighboring points. Instead use the delete points icon.
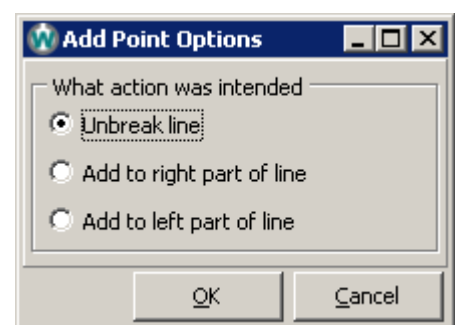
Change uncertainty

1. Use the select points icon and select either a single point or draw a square to select several points.
2. Choose an uncertainty at the dropdown and press update.

Create grid

1. Right click a geological surface and click "update current grid/interpolated grid" or "update all grids/interpolated grids".

2. Choose grid options and press ok.

3. The grid will be drawn as a dashed line and stops at the search radius. This means that is possible to see if the grid is not covering between points.

4. If a surface has been breached, the search radius will stop where the break is. This is only visual and the grid file will still have the search radius covering the break.

Update grids

1. When changes have been made to the geological surfaces, and the user want to add the changes to the grids made, right click on the selected surface and choose "update current grid/interpolated grid" or "update all grids/interpolated grids".

Display options

1. Colors of surfaces can be changes either by clicking the color box or right click at a surface and choose "update color".

2. Change of surface points can be updated on the GIS interface by right click and choose "Update GIS points".

3. A user can add drawn surfaces and grids to display on other profiles. A total of 4 surfaces and 4 grids can be displayed for each geological surface. Right click on the selected surface and choose "Visible lines".
   Here there is the option of choosing surfaces and grids from current, previous and next profile. Also a user selection is available to select another profile.

4. Change the whiteness, style and width for each display surface and grid by right click on selected surface and choose "Line display settings".

Export Geological surface

1. Close all profile windows.

2. Select a geological surface in the workspace explorer.

3. Go to File → Export and select either GIS layer or XYZ file.

Export Grid

1. Close all profile windows.

2. Select a grid from a geological surface in the workspace explorer.

3. Go to File → Export and select Grid file.

1. Appendix A: Xyz file example

/HEADER:

/MAP

/MyMap

/GEOSURFACE

/fdff

/EXPORT DATE

/31-05-2016 13:11:31

/COORDINATE SYSTEM

/WGS84 Zone 35N

/EXPORTED FROM

/Aarhus Workbench 5.0.4.0

/EXPORT USER

/Toke

/ UTMX	UTMY	ELEV	PROF_DIST	PROFILE	GROUP	STD
772795.3	3394479	-30.69	96.68	p3	0	5
772852.8	3394508.3	27.95	161.22	p3	0	5
772981.8	3394574	-23.26	306	p3	0	5
773191.6	3394681	-59.6	541.48	p3	1	5
773701.3	3394941	-90.16	1113.62	p3	1	5
774829.4	3395516.3	-54.64	2380	p3	1	5
774074.4	3396179.7	-3.86	-55.89	p2	0	5
773948.1	3396117.1	-2.37	84.98	p2	0	5
773770.8	3396029.3	-4.6	282.93	p2	0	5
773432.6	3395861.7	-17.97	660.31	p2	0	5
772929.2	3395612.3	-22.43	1222.08	p2	0	5