

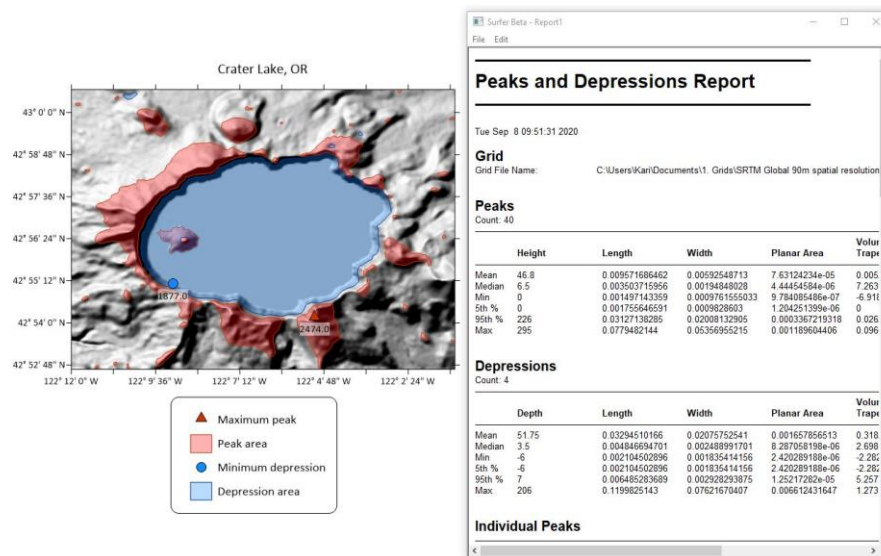
What's New in Surfer 20

For the Surfer 20 release, we focused on adding functions to automation, optimizing existing tools for batch processing, and we included some exciting new features as well. The top new features are listed below.

Mapping improvements

1. Create Peaks and Depressions maps

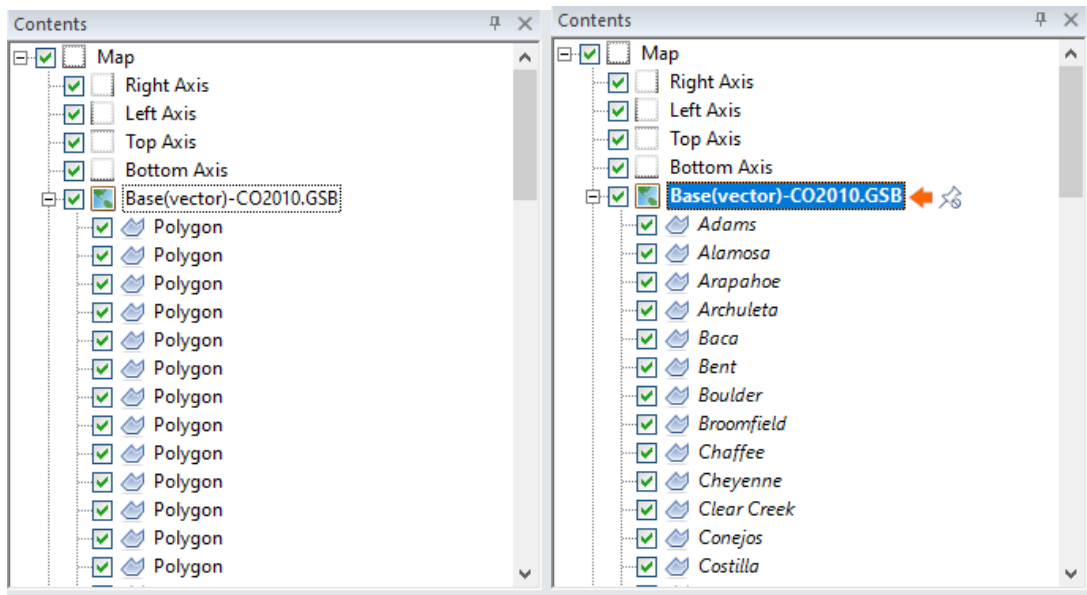
You can now create maps showing peaks and depressions with this new feature in Surfer! Highlight zones in which drainage flows away from (peaks) or into (depressions) closed contours. Useful for those working in water resources and geohazard identification, this new feature allows quick terrain evaluation and the ability to quickly spot sinkholes or other important karst morphology, fracture zones, lineaments and ridgelines. This new layer type is created from a grid file and it identifies the peaks and depressions in the grid by drawing a polygon around these areas. Color peaks and depressions separately, add directional hachures, label the maxima and minima, and work on a local or map-wide scale. Generate statistical reports for your peaks and depressions that calculates area, volume, orientation, and more.



Create a map of Peaks & Depressions, and generate statistical reports

2. Use a field from the Attribute Table for the Object Name

You can now name the vector objects in a Base(vector) layer using an attribute column in the associated Attribute Table. This means that you no longer need to manually rename each object, or have them all default to the names of Polygon, Polyline, Point and so on. Label county boundary polygons with their name or FIPS code, or name your boreholes by their Well-ID. Finding the right object in your long list just became a whole lot easier.



Easily turn the object naming on the left into the one on the right - much more useful!

Workflow improvements

3. Calculate individual grid volumes within a collection of polygons

If you have a Base(vector) layer or vector file containing multiple polygons, you can now calculate volumes from a grid within each polygon individually, all in one step. Calculate either the combined volumes for every polygon, or split the report into volumetric data for each individual polygon. Combining this with the new naming objects by attribute feature above, and have each polygon identified clearly by name in the Grid Volume report. This is a big time saver, and no need to use scripting!

Surfer Beta - GridVolumeReport-Colorado

File Edit

Polygon Boundaries

File Name: C:\Program Files\Golden Software\Surfer\Samples\CO2010.GSB
 Number of Polygons: 64
 Volume: Inside

Individual Polygon Volumes

Z Scale Factor: 1

Polygon ID	Total Volumes Trapezoidal Rule	Total Volumes Simpson's Rule	Total Volumes Simpson's 3/8 Rule
Adams	1373.914675	1439.5236333333	1394.3117671875
Alamosa	693.4382	720.10236666667	689.52951210938
Arapahoe	958.03085	896.65208888889	935.20561640625
Archuleta	1215.6734625	1220.1100722222	1227.139003125
Baca	3095.997625	3042.3261555556	3059.120225
Bent	1985.3477	1950.2871111111	1998.0779765625
Boulder	774.580975	767.5626777778	756.48898828125
Broomfield	32.0901	30.930433333333	36.098778515625
Chaffee	806.79725	806.2040777778	808.7095078125
Cheyenne	2196.220425	2196.3656555556	2184.473277344
Clear Creek	293.273575	282.41476666667	290.799534375
Conejos	1118.2590125	1128.0948777778	1122.9694628906
Costilla	1042.6997875	1044.0285722222	1043.7622453125
Crowley	965.2555	966.72045555556	968.47303710938
Custer	622.3392	610.58954444444	621.57554648438
Delta	1198.4175	1160.0592111111	1172.9671488281
Denver	182.0644	197.48143333333	183.75401953125
Dolores	878.362575	915.88921666667	892.82568867188
Douglas	909.857725	945.9548	913.21056914063
Eagle	1522.661525	1507.8797222222	1525.5971226563
Elbert	2189.000925	2183.3131444444	2188.62174375

Get volumetric data within each of your county polygons in a single Base(vector) layer

4. Calculate individual grid statistics within a collection of polygons

Similar to the new functionality above, statistics generated via Grid Info can now also be calculated for individual polygons in a multi-polygon Base(vector) layer or vector file.

Surfer Beta - GridInfoReport-Colorado

File Edit

Sum: 511167
 Sum Absolute: 511167
 Sum Squares: 682635591
 Mean Square: 1777696.85156

Clear Creek Z

Count: 84

1%-tile: 2316
 5%-tile: 2438
 10%-tile: 2581
 25%-tile: 2765
 50%-tile: 3163
 75%-tile: 3418
 90%-tile: 3739
 95%-tile: 3803
 99%-tile: 3929

Minimum: 2316
 Maximum: 4181

Mean: 3149.91666667
 Median: 3165.5
 Geometric Mean: 3119.46040948
 Harmonic Mean: 3088.99851429
 Root Mean Square: 3180.1124587

Get grid statistics reports within each individual polygon in a single Base(vector) layer

3D View improvements

5. Add Color Scales to the 3D View

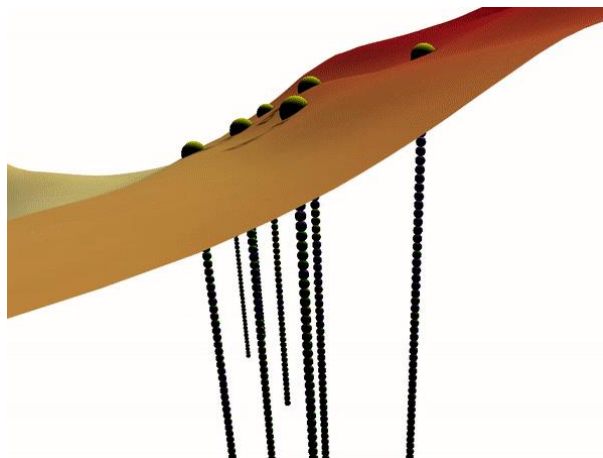
It is now possible to display one or more color scales in the 3D View for your points, surfaces and contours. Display a different color scale for each object in the 3D View that uses a colormap. You can have as many as you need. Export your model with colormaps for use in your next stakeholder report.

6. Export to VRML (.WRL) format

Export your 3D models from the 3D View to VRML format. This 3D Vector model data format is great for working in CAD, and can be manipulated directly in 3D printing software. 3D print some surface models from the VRML format for your next in-person presentation! You can also use this file format in a variety of different 3D modelling software programs such as Cortana, MeshLab, 3DMax, and more.

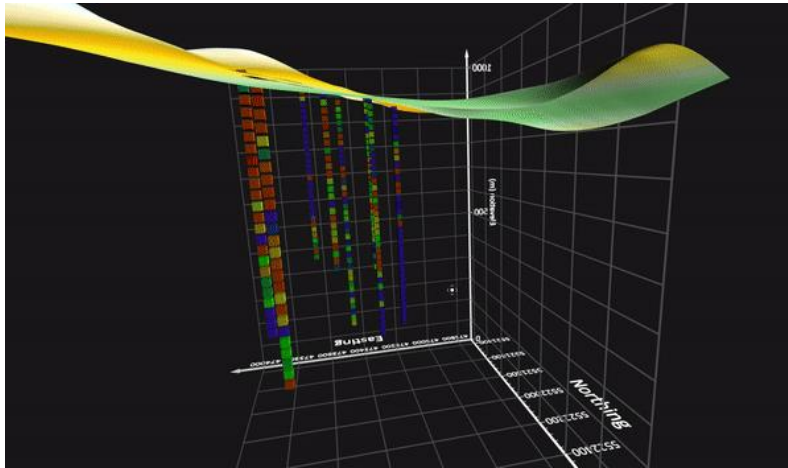
7. Light point objects using the Environment Lighting

You can now opt to have 3D point objects (cubes and spheres) use the same Environment lighting that applies to your surfaces. Create a consistent source-lit scene that looks great in reports and presentations.



8. Antialiasing

Graphics in the 3D View are now much smoother with the addition of antialiasing. Visual artifacts such as jagged edges, missing parts of lines, and more patterns are now smoothed out for users with modern graphics cards. This smoothing is also maintained during export to image functions and when copying to the clipboard.



Smooth grid lines, text and points with antialiasing

Automation improvements

9. New functions available via automation

We've now added a lot of the newer functionality in Surfer to the automation model. The following Surfer processes are now available to automate:

- Create Base from Data map layers via automation
- Use Base Symbology for Base layers via automation
- Use Grid Z Limits when gridding data via automation
- Use a Z Transform when gridding data via automation
- Save and load the Grid Data settings file (*.SRFGDS) via automation
- Set the Map Frame scaling ratio via automation
- Modify the map scale bar options via automation
- Add top-level Legend objects via automation
- Specify and call new Local Coordinate System via automation