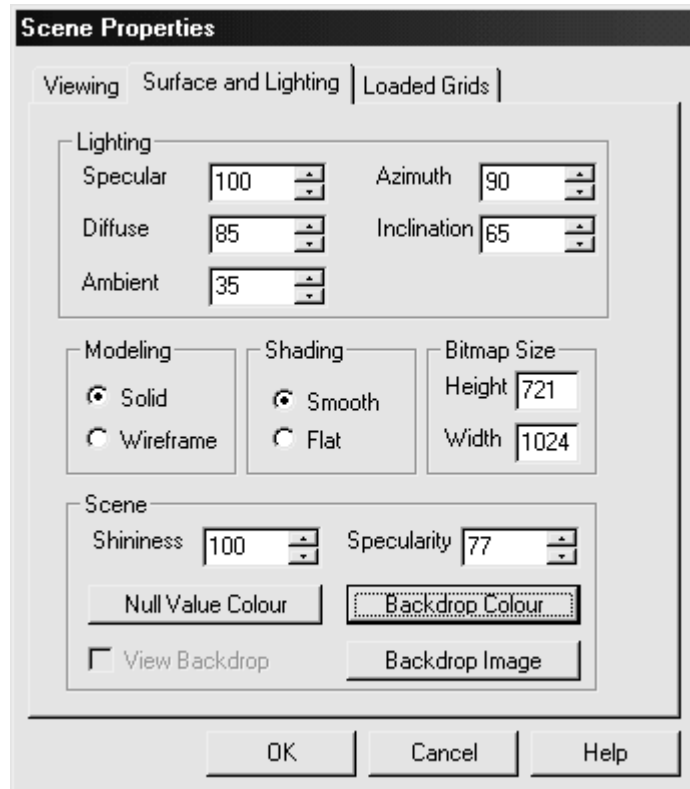


The Surface and Lighting Tab

The *Surface and Lighting* Tab contains settings that affect the visual characteristics of the rendered scene. Properties in this window will affect all grids listed in the *Grid Layer Control*.



- 1 **Lighting** settings refer to the three types of lighting implemented in a *GridView* scene. Each type is generated from a different source and each is user-controlled. Some light comes from a particular direction or position, and some light is scattered about the scene.
 - a) **Specular** refers to light coming from a particular direction, and tends to bounce off the surface in a preferred direction. A shiny surface such as metal has a high specular component, while a surface such as carpet has almost none. Increasing the percentage of specular light will result in strong shadow effects and more pronounced “shiny” or glare spots.
 - b) **Diffuse** refers to light coming from a particular direction and is brighter if aimed directly down on a surface. When diffuse light hits the surface, however, it is scattered uniformly in all directions, so it appears equally bright no matter where the eye is located. Increasing diffuse light will intensify shadow effects.
 - c) **Ambient** refers to light coming from a source that has been scattered so evenly by the environment that its direction is impossible to determine. Increasing the ambient light will brighten the scene without casting shadows.
 - d) **Azimuth** is the angle in the X, Y plane at which specular or diffuse light from the source position shines onto the grid. A value of 180 degrees indicates that the light is shining directly north in terms of the coordinate system of the grid file (i.e., directly along the X-axis of the coordinate system). This *Azimuth* setting operates in the same nature as the viewing *Azimuth* setting illustrated in Figure 14.3.
 - e) **Inclination** is the angle at which the light shines down towards the midpoint of the surface from the source position, measured from the horizontal plane.

- 1 **Modeling** specifies two ways of representing the rendered surface: **Solid** and **Wireframe**. **Solid** renders the scene with a continuous colour and **Wireframe** renders the scene with a wireframe mesh. See Figures 14.7 and 14.8.

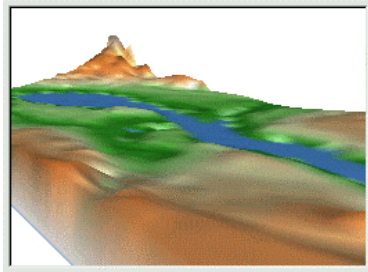


Figure 14.7. **Solid** – continuous colour surface

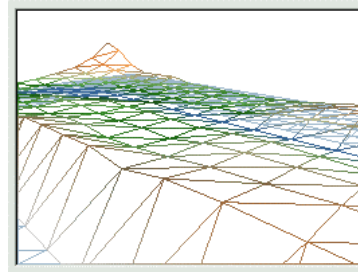


Figure 14.8. **Wireframe** – wireframe mesh

- 1.
- 2 **Shading** refers to the manner in which colours are applied to individual grid cells during the rendering process.
 - a) **Smooth** renders a colour gradient between each grid cell when rendering a scene. This can greatly improve the appearance of low resolution grids (see Figure 14.9).
 - b) **Flat** assigns one colour to each grid cell during the rendering process (see Figure 14.10).

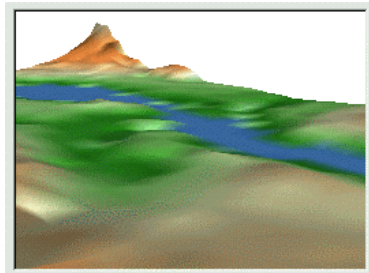


Figure 14.9. **Smooth** renders a colour gradient.

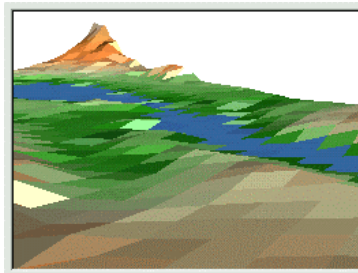


Figure 14.10. **Flat** assigns one colour to each cell.

- 1 **Bitmap Size** refers to the resolution of the rendered image. The **Height** and **Width** settings are measured in pixels, which can increase or decrease the resolution or quality of the rendered image. High resolution images can be panned but not zoomed in *GridView*. Use MapInfo or any raster/paint program to zoom images saved with the *Export to .bmp & .tab* option found on the *File* menu.
1. **Material Properties** refers to settings that affect the visual characteristics of the rendered scene.
 - a) **Shininess** is a relative property. Increasing the “shininess” value of a surface will increase its overall gleam; decreasing the *Shininess* value will produce a duller, waxier appearing surface.
 - b) **Specular Reflectance** can be increased to produce more highlights on the surface.
- 1 **Null Value Colour** is the colour applied to areas of a grid where there are null values. A null value is an arbitrary numeric value given to those grid cells that did not obtain a calculated value at the time of interpolation or that have been trimmed away at a later time. This colour can be generally seen in three different locations: the grid base, the grid apron and the inside holes within

the grid area (see Figure 14.11). When this setting is chosen a standard Windows Colour dialogue appears.

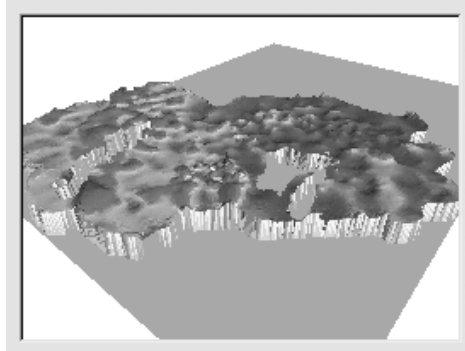


Figure 14.11. Areas that are effected by *the Null Value Colour* setting are easily identified.

2 ***Backdrop Colour*** is the colour applied to the backdrop or background of the rendered scene. When this setting is chosen a standard Windows Colour dialogue appears.

3 ***Backdrop Image*** is a .BMP image that is applied to the background of the scene (see Figure 14.12). Six images are supplied in the VM2/Backdrop directory.

