Energy Environmental Reclamation Assist

With the new push in the US to retrieve domestic sources of energy, innovative gas recovery methods are bringing extensive new drilling back to the Wyoming high plains, and once the big drilling rigs have departed, federally-mandated environmental reclamation of the disturbed 2-to 4-acre work sites begins. KC Harvey is using GIS technology to help monitor reclamation of more than 2,000 sites in Wyoming, and that number will increase in 2009.

Reclamation monitoring of soil erosion and vegetation in this, semi-arid landscape is limited to a three-month window of opportunity, usually late May through early August, when plant growth is active. As the company deploys multiple field crews within a very short timeframe, a device that is both easy-to-learn and easy-to-use is needed. The MobileMapper 6 is suited, facilitating to load each MobileMapper 6 with aerial photographs and topographic maps of the areas in which the monitors will be working. The MobileMapper's integrated camera permits photo points to be recorded and tagged with the locations and included as point description data in the ArcGIS database."

The company has been using recreational-grade GPS units for mapping features associated with monitoring, but with an increased need to capture more types of spatial data; polygons, lines, and points using multiple data dictionaries and of course more attribute information, they had to find a more comprehensive GPS/GIS solution. The hand-held Magellan MobileMapper 6 is rugged, waterproof and with its integrated camera, ArcPad application software and low cost it was fit for this job.

About the Monitoring

Monitoring crews record vegetation density and species composition, areas of weed infestations, and rare species occurrence (both on and adjacent to the disturbed site). These data can be point or polygon data, vegetation transects, which is a linear sampling path, roads, erosion features, storm water runoff, as well as a variety of miscellaneous features. The data is collected in a series of .shp files, each of which may have three to ten attribute fields. The files are merged into an ArcGIS geodatabase.