GEOLOGIC MAP OF THE MOAB AND EASTERN PART OF THE SAN RAFAEL DESERT 30' X 60' QUADRANGLES, GRAND AND EMERY COUNTIES, UTAH, AND MESA COUNTY, COLORADO

by

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ABSTRACT

This map on compact disc is a digital version of the 1:100,000-scale *Geologic map of the Moab and eastern part of the San Rafael Desert 30' x 60' quadrangles, Grand and Emery Counties, Utah, and Mesa County, Colorado,* by Hellmut H. Doelling and published by the Utah Geological Survey in 2001. The Portable Document Format (PDF) version of the digital map is identical to the printed geologic map. The spatial data files provided can be used to display the geologic map with other spatial-based information.

The spatial data files are provided in both ArcInfo coverage and ArcView GIS shapefiles as well as ArcInfo export files. The files are organized in several folders and subfolders. In addition to the spatial data files, software, PDF, text, database, and image files are included to help the user view, evaluate, and utilize the spatial data. The metadata for each coverage or theme are in the respective subfolder that contains the spatial data. The projection of the geospatial data included on this compact disc is UTM zone 12, North American Datum 1927, and spheroid Clarke 1866. The units are in meters. The spatial data files can only be displayed using Geographic Information System (GIS) software. Similarly, the PDF files can be viewed using Adobe Acrobat or Acrobat Reader or other software capable of reading a PDF file. ArcExplorer 2.0 and Acrobat Reader 5.0 are included on the compact disc for your convenience and must be installed if GIS software and Acrobat, Acrobat Reader, or other capable software are not already installed on your computer or computer network.

METHODS

This digital geologic map was produced from the 1:100,000-scale *Geologic map of the Moab and eastern part of the San Rafael Desert 30' x 60' quadrangles, Grand and Emery Counties, Utah, and Mesa County, Colorado,* by Hellmut H. Doelling, published by the Utah Geological Survey (Doelling, 2001). To produce this version of the map, the UGS scanned the original mylar-based geologic map. The resulting raster image was

geographically referenced, vectorized, and edited for errors that were created during vectorization. The newly created spatial data were formatted and attributed in ArcInfo. Existing 1:100,000-scale and 1:500,000-scale geographic data obtained from the Utah Automated Geographic Reference Center (AGRC), Utah Division of Water Rights (DWR), Bureau of Land Management (BLM), and Sprinkel (1999) were added to complete the spatial data set for the Moab map.

Next, the UGS carefully reviewed color plots of the digital map to search for errors and unattributed polygons. The UGS made several rounds of reviews and corrections to the digital map to make it match the printed version. The UGS then prepared the spatial data files, explanatory materials and files, and supporting documents for public release.

COMPACT DISC CONTENTS AND ACCESSING THE FILES

This digital map product was developed with the experienced GIS user in mind; however, the compact disc (CD) includes a menu system that allows novice users to navigate, display, and plot the geologic map and supporting information. The menu system should automatically initiate soon after the CD is inserted into the computer's CD-ROM reader. If it does not or if you prematurely exit, the menu can be restarted by clicking on START from the Windows task bar, select RUN, type in your computer's CD-ROM drive letter and the file "autorun.exe" (for example, d:\autorun.exe), and click OK. Below is a brief description of the CD contents for the experienced and the courageous less experienced user.

This CD contains several spatial data files (ArcInfo coverage files and ArcView GIS shapefiles) that comprise the geologic map of the Moab 30' x 60' quadrangle, including map units, faults, folds, structure-contour lines, and map symbols. Also included on the CD are Acrobat Portable Document Format files (*.PDF) that depict the geologic map (plate 1), map explanation (plate 2), and cross sections (plate 3). Basic geographic spatial data are also included so the user can display the geologic resource themes or layers with

familiar geographic themes such as county boundaries, 1:24,000-scale quadrangle map indexes, township and range grid, latitude and longitude grid, and roads using GIS software. Most all of the geographic spatial data were obtained from the Utah Automated Geographic Reference Center (AGRC). Updates of the included spatial data, as well as additional data, are available from AGRC's web site at http://agrc.utah.gov/.

The geologic resources were extracted from Sprinkel (1999), the Utah Division of Water Rights web site at http://nrwrt1.nr.state.ut.us/, and the BLM web site at http://www-a.blm.gov/utah/minerals/fluids.htm. More than 250 megabytes of data are included on this CD. In addition to the spatial data and image files, supporting documents and software are included. Several program, PDF, text, and database files are included to help the user view and better understand the type and quality of the spatial data the UGS is providing. The spatial data, associated metadata, and PDF files, software, and other supporting files are organized into six folders: (1) coverage, (2) docs, (3) e00, (4) images, (5) shapes, and (6) software. The coverage and shape folders are further organized into subfolders where the spatial data reside. The available metadata files (*.met or *.txt) of the themes (or coverage) are in the subfolders that contain their respective spatial data. Folders and files are briefly described below.

Two programs located in the software folder can be installed on your computer to extract and display the spatial data and PDF files. ArcExplorer 2.0 (ae2setup.exe) lets users—who do not already have access to ArcInfo, ArcView GIS, ArcExplorer, or other GIS software— display ArcInfo coverage and ArcView GIS shapefiles. The ae2setup.exe file is a self-extracting installation file. ArcExplorer 2 will only run on computers with Microsoft Windows 98/NT/ME/2000/XP operating systems. If your computer uses Windows 95, you must use ArcExplorer 1.1, available free at http://www.esri.com/. The ArcExplorer user guide (arcexplorer.pdf) contains information on how to use the software once it is installed. Additional information and help on using ArcExplorer 2 may be obtained from the Environmental Systems Research Institute, Inc. (ESRI) web site. Adobe Acrobat Reader 5.0 for Windows 95/98/NT/2000/XP (ar500enu.exe) is also included on this CD in the software folder, and is needed to view PDF documents. Users need to install Acrobat Reader on their computers before it can be used. Users with an

operating system other than Windows can download the appropriate version of the reader from Adobe's web site at http://www.adobe.com/.

The UGS is providing ArcExplorer and Acrobat Reader as a convenience; this does not imply product endorsement. In addition, the UGS does not provide any support for this software. Please contact the software companies for help or additional information regarding their products. Supporting documents such as this document (map182dm.pdf), the ArcExplorer user guide (arcexplorer.pdf), and the Acrobat help file (miniread.pdf) reside in the docs folder.

DESCRIPTION OF DIGITAL FILES

Below is a description of the spatial data files. A summary of the selected files are shown in tables 1 through 5. Metadata files (*.met or *.txt) are included for most of the spatial datasets and are in the subfolders that contain their respective coverage or theme. Most of the basic geographic spatial data files were obtained from the AGRC and updates of these files may be downloaded from their web site at http://agrc.utah.gov/. The Internet addresses to check for updates are also provided in the tables. The projection of the geospatial data included on this compact disc is UTM zone 12, North American Datum 1927, and spheroid Clarke 1866. Units are in meters.

The **coverage** folder contains 15 subfolders (table 1). These folders contain the coverages, or geodatabases, for the geologic map. Each coverage is in ArcInfo format. ArcView GIS and ArcExplorer can read these coverages.

The **docs** folder contains the help files for ArcExplorer and Acrobat Reader, metadata, references used to compile the geologic map, and projection information (table 2). The help files are in a PDF file format and the other files are simple text files that can be opened using a text editor.

The **e00** folder contains ArcInfo export files that comprise the ArcInfo coverages of the geologic map (table 3). Export files are mainly included for UNIX ArcInfo users who want to import the data into their systems. Other software applications exist that can read .e00 files

The **images** folder contains graphic and PDF files (table 4). The graphic files include logos and a georeferenced raster image of the topographic map of the Moab 30' x 60' quadrangle and eastern part of the San Rafael Desert 30' x 60' quadrangle. The PDF files include plates 1, 2, and 3 of the geologic map.

The **shapes** folder contains additional subfolders and all of the shapefiles needed to display the geologic map using GIS software (table 5). The shapefiles are organized by geographic, geologic, and georesources themes. The metadata files also contain information that is helpful to users and are in the subfolders that contain their respective coverage or theme.

The **software** folder contains the free software to view the spatial data and PDF files as mentioned earlier in this document.

The **menudata** folder contains control files required by the CD menu system. These files are not spatial data.

ACKNOWLEDGMENTS

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disc, and created the menu system. ArcInfo, ArcView GIS, and ArcExplorer are all registered products of Environmental Systems Research Institute, Inc. (ESRI). Acrobat and Acrobat Reader are registered products of Adobe Systems Incorporated. Windows 95/98/NT/ME/2000/XP are registered products of Microsoft Corporation.

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REFERENCES

Doelling, H.H., 1993, Interim geologic map of the Moab 30’x 60’ quadrangle, Grand County, Utah: Utah Geological Survey Open-File Report 287, scale 1:100,000, 16 p. 1 plate.

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Sprinkel, D.A., compiler, 1999, Digital geologic resources atlas of Utah: Utah Geological Survey Bulletin 129DF, scale 1:500,000, 1 CD-ROM.