

U.S. DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

Digital Geologic Map of the Altiplano and Cordillera Occidental, Bolivia

by

Sherman P. Marsh¹, Donald H. Richter², Steve Ludington²,
Eduardo Soria-Escalante³, and Angel Escobar-Diaz³

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This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with North American Stratigraphic Code. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

¹USGS Denver, CO 80225, ²USGS Menlo Park, CA 94025, ³Servicio Geológico de Bolivia

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This database consists of 19 files described as follows:

altidis.new.e00	ARC/INFO export file of the geologic map
labels.e00	ARC/INFO export file of labels for geologic map
struct.all.e00	ARC/INFO export file of the structural geology map
volmajor.e00	ARC/INFO export file of major volcanoes
volminor.e00	ARC/INFO export file of minor volcanoes
*.aml	A series of 13 ARC aml files for plotting and viewing the data at various scales
bolmap.shadekey	color file for geologic units

The database has been approved for release and publication by the Director of the USGS. Although this database has been subjected to rigorous review and is substantially complete, the USGS reserves the right to revise the data pursuant to further analysis and review. Furthermore, it is released on condition that neither the USGS nor the United States Government may be held liable for any damages resulting from its authorized or unauthorized use.

The database can be downloaded via 'anonymous ftp' from a USGS system named [greenwood.cr.usgs.gov](ftp://greenwood.cr.usgs.gov) (136.177.48.5). The files are located in a directory named [/pub/open-file-reports/ofr-95-0494](ftp://pub/open-file-reports/ofr-95-0494).

The database manager is:

Sherman P. Marsh
(303) 236-5521
smarsh@helios.cr.usgs.gov
U.S. Geological Survey
P.O. Box 25046, Mail Stop 973
Denver Federal Center
Denver, CO 80225
USA

The geologic map of the Altiplano/Cordillera Occidental was produced digitally from fifteen, 1:250,000 scale, field compilation maps. These paper maps were made by Servicio Geológico de Bolivia (GEOBOL) geologists over the last decade. After examination of the field maps it was determined that the best method for capturing the geologic data digitally was by means of an optic scanner. Because of the condition of the maps and the fact that they had been hand colored the geology was transferred to mylar stable-base overlays at 1:250,000 scale using a fine (.35 mm) ink pen prior to scanning. The overlays were then scanned into ARC/INFO using a Tectronics 4991 digital drum scanner. The 15 scanned

images were converted into ARC/INFO coverages and edited in ARCEDIT using all 137 geologic units derived from the original field compilation maps. The resulting 15 digital maps at 1:250,000 scale were plotted in color on an electrostatic plotter and then reviewed and edited by USGS and GEOBOL geologists using new geologic information from field studies conducted during the spring and fall of 1990.

The 137 geologic units on the fifteen, 1:250,000-scale geologic maps were simplified to 15 geologic units. This simplification was based on geologic environments favorable for mineralization, on combining similar geologic terrain for plotting at the publication scale of 1:500,000, and on grouping Paleozoic sedimentary units that were mapped mostly outside the study area. The 15 simplified geologic maps were generated in ARC/INFO and then appended together. A simplified structural map was generated in ARC/INFO using the same techniques and combined with the geologic map. During this study 108 major and 263 minor volcanic

centers were identified; these were digitized into a separate digital map and then combined with the geologic map. The resulting combined geologic map was published at 1:500,000 scale in 1992 as part of U.S. Geological Survey Bulletin 1975; Geology and Mineral Resources of the Altiplano and Cordillera Occidental, Bolivia.