

CORRELATION OF MAP UNITS

SEDIMENTARY						QUATERNARY	CRETACEOUS
Q _{alc}	Q _a	Q _{sa}	Q _{st}	Q _{sl}	Q _{sc}		
Q _{alc}	Q _a	Q _{sa}	Q _{st}	Q _{sl}	Q _{sc}		

DESCRIPTION OF MAP UNITS

- Q_{alc} Lake deposits (Holocene) — Lake (wet plays) deposit
- Q_a Conglomerate and sandstone (Holocene) — Alluvium: shingly and detrital sediments (gravel and sand with less abundant silt and clay)
- Q_{sa} Conglomerate and sandstone (Holocene and late Pleistocene) — Alluvium: shingly and detrital sediments (gravel and sand with less abundant silt and clay)
- Q_{st} Eolian deposits (Holocene and late Pleistocene) — Sand
- Q_{sl} Fan alluvium and colluvium (Holocene and late Pleistocene) — Fan alluvium and colluvium: shingly and detrital sediments (gravel, sand, and clay)
- Q_{sc} Conglomerate and sandstone (late Pleistocene) — Alluvium: shingly and detrital sediments (gravel and sand with less abundant silt and clay)
- Q_{sa} Conglomerate and sandstone (middle Pleistocene) — Alluvium: shingly and detrital sediments (gravel and sand with less abundant silt and clay)
- K_{apt} Limestone and sandstone (Early Cretaceous (Albian and Aptian)) — Limestone, marl, sandstone, and less abundant conglomerate
- K_{bar} Limestone and sandstone (Early Cretaceous (Aptian and Barremian)) — Limestone, marl, sandstone, and less abundant conglomerate
- K_{val} Sandstone and siltstone (Early Cretaceous (Hauterivian and Valanginian)) — Sandstone, siltstone, and less abundant limestone and marl

EXPLANATION OF MAP SYMBOLS

- Contact
- Fault — Dashed where approximately located; dotted where concealed
- Intermittent lake

DATA SUMMARY

This map was produced from several larger digital datasets. Topography was derived from Shuttle Radar Topography Mission (SRTM) 85-meter digital data. Gaps in the original dataset were filled with data digitized from contours on 1:200,000-scale Soviet General Staff Sheets (1978–1997). Contours were generated by cubic convolution averaged over four pixels using TINmap's surface modeling capabilities. Cultural data were extracted from files downloaded from the Afghanistan Information Management Service (AIMS) Web site (<http://www.aims.org.af>). The AIMS files were originally derived from maps produced by the Afghanistan Geodesy and Cartography Head Office (AGCHO). Geologic data and the international boundary of Afghanistan were taken directly from Abdullah and Chmyriov (1977).

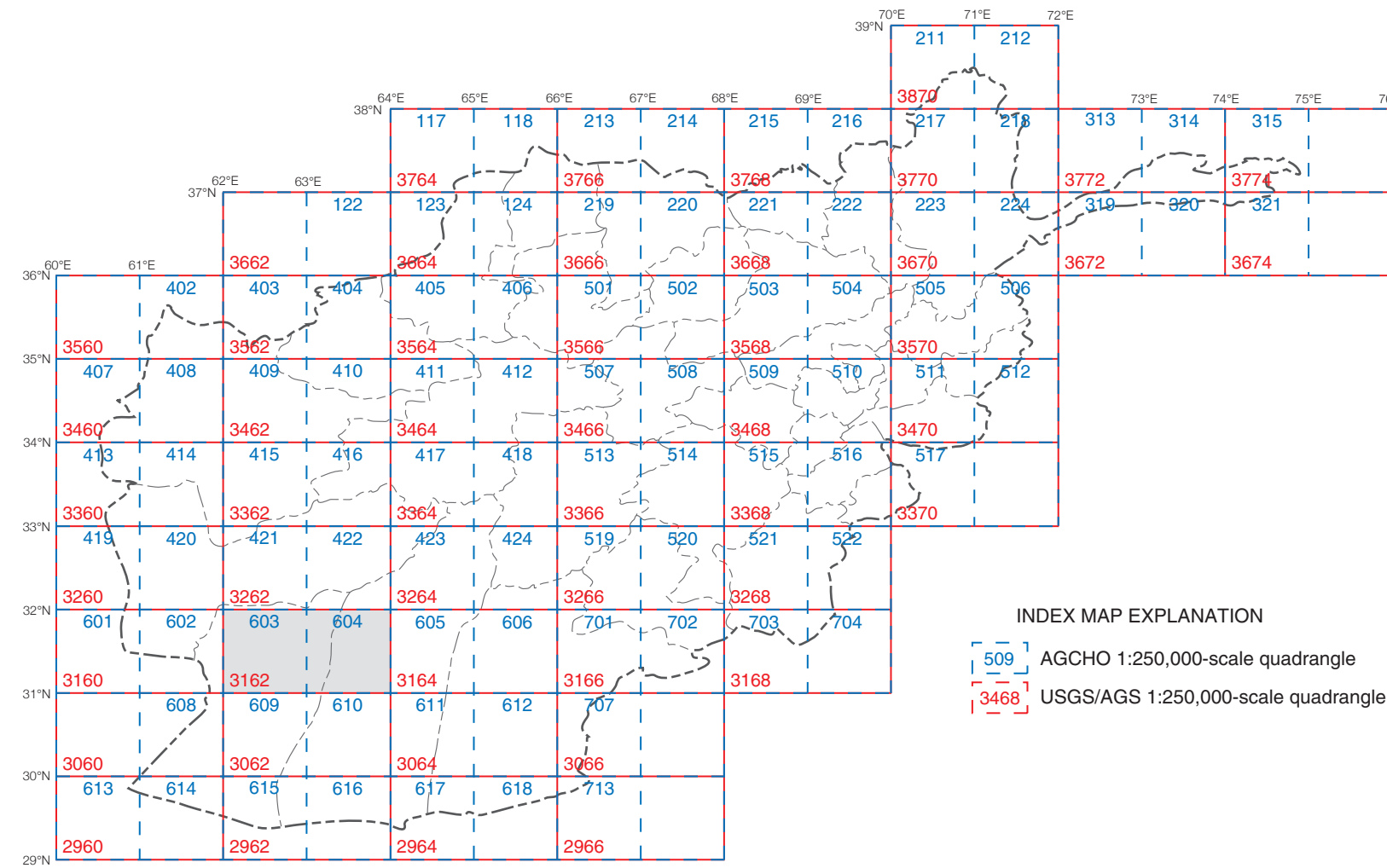
It is the primary intent of the U.S. Geological Survey (USGS) to present the geologic data in a useful format while making them publicly available. These data represent the state of geologic mapping in Afghanistan as of 2005, although the original map was released in the late 1970s (Abdullah and Chmyriov, 1977). The USGS has made no attempt to modify original geologic map-unit boundaries and faults; however, modifications to map-unit symbology, and minor modifications to map-unit descriptions, have been made to clarify lithostratigraphy and to modernize terminology. The generation of a Correlation of Map Units (CMU) diagram required interpretation of the original data, because no CMU diagram was presented by Abdullah and Chmyriov (1977).

This map is part of a series that includes a geologic map, a topographic map, a Landsat natural-color image map, and a Landsat false-color image map for the USGS/AGS (Afghan Geological Survey) quadrangles shown on the index map. The maps for any given quadrangle have the same open-file number but a different letter suffix, namely, -A, -B, -C, and -D for the geologic, topographic, Landsat natural color, and Landsat false-color maps, respectively. The present map series is to be followed by a second series, in which the geology is reinterpreted on the basis of analysis of remote-sensing data, limited fieldwork, and library research. The second series is to be produced by the USGS in cooperation with the AGS and AGCHO.

REFERENCE CITED

Abdullah, Sh., and Chmyriov, V.M., eds., 1977, Map of mineral resources of Afghanistan: Kabul, Ministry of Mines and Industries of the Democratic Republic of Afghanistan, Department of Geological and Mineral Survey, V/O "Technoport" USSR, scale 1:500,000.

Geospatial analysis software developed by Microfitting, Inc., Lincoln, NE 68506-2010.



INDEX MAP EXPLANATION

- AGCHO 1:250,000-scale quadrangle
- USGS/AGS 1:250,000-scale quadrangle

GEOLOGIC MAP OF QUADRANGLE 3162, CHAKHANSUR (603) AND KOTALAK (604) QUADRANGLES, AFGHANISTAN

Compiled by
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2005



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