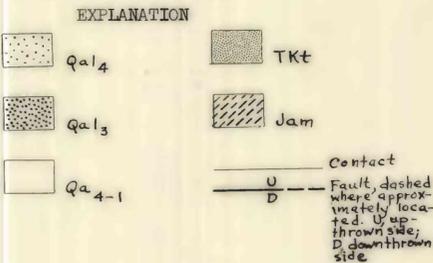
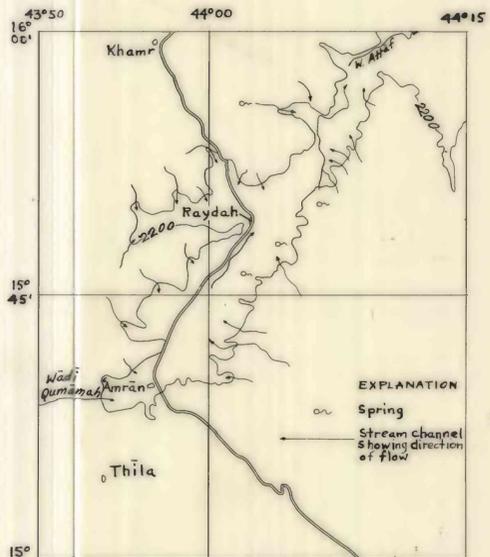


Modified from Geologic Map of the Yemen Arab Republic (Sen '81), U.S. Geological Survey, 1978, Scale 1:500 000

A-Index map of geology and structure of the Amran Valley



For geologic explanation, refer to Plate 1



Topography and drainage from Sheet 4, Hudeyda, and 5, San '81, printed by the United Kingdom, 1974, Scale 1:250 000

B-Index map of the 2200 meter topographic contour around the Amran Valley

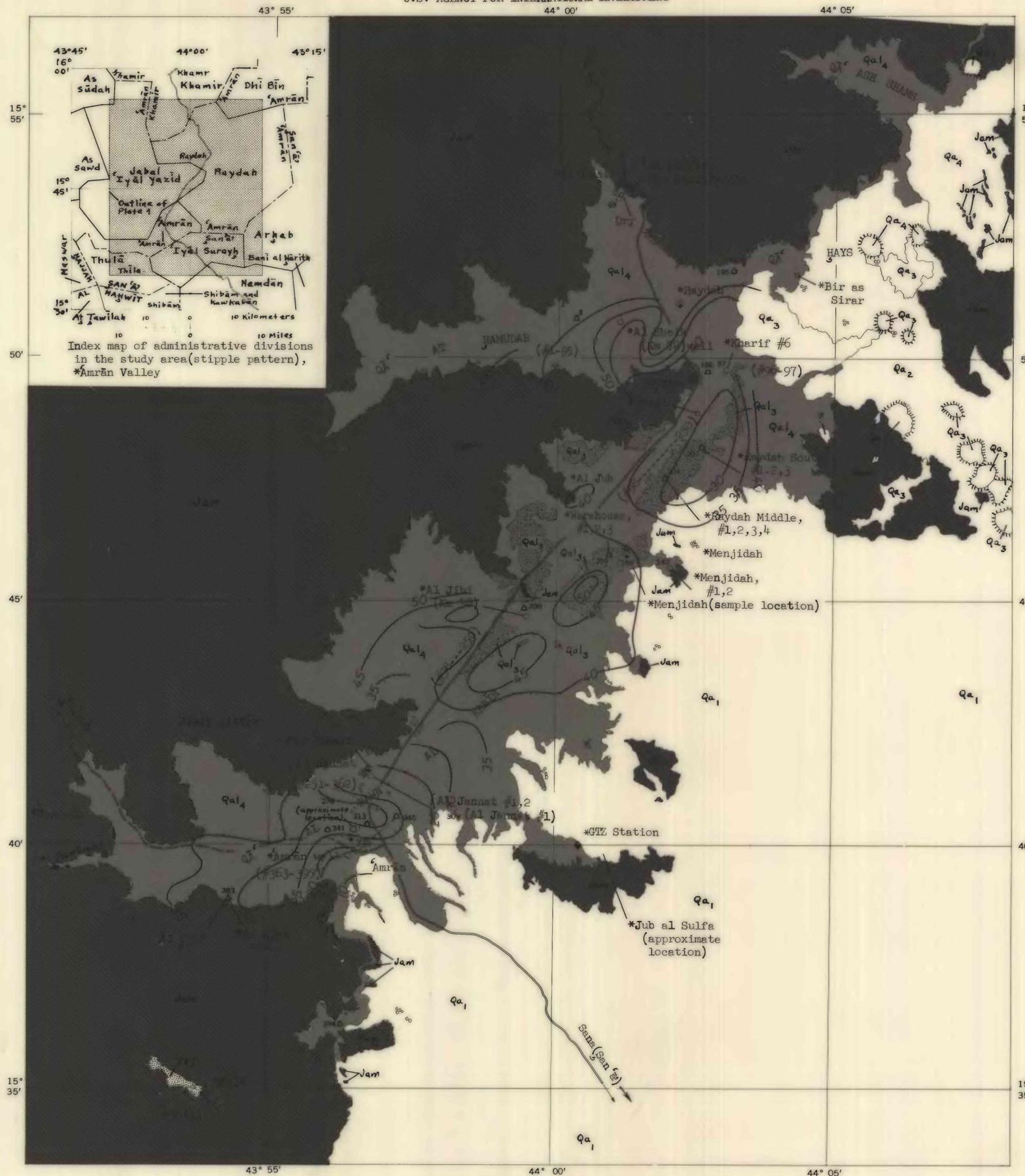
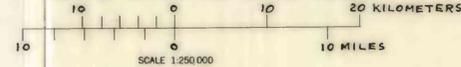


PLATE 1--MAP SHOWING WELL LOCATIONS, GROUND WATER CONTOURS, AND GEOLOGY IN THE AMRAN BASIN, YEMEN ARAB REPUBLIC.



EXPLANATION*

- Alluvial gravel, silts, clays, loess, deposits, may include colluvium, cultivated
- Alluvial gravel, very sandy, possibly older than Qa4, not cultivated
- Basalt flows and dikes; numerous scattered cones and craters; at places covered with tuff and volcanic bombs. Divided regionally into four sub-units
 - Qa4, very dark basaltic lobate flows, extruded in historical times
 - Qa3, dark basaltic flows
 - Qa2, thin basalt flows, discontinuous over older rocks; appear lighter-grey
 - Qa1, basalt flows forming a continuous mantle over older rocks
- Contact uncertain between Qa2 and Qa1 in the area of 15°46'-44°08'
- Tawilah Group and Med-jir Series, undivided--Continental type coarse crossbedded sandstone with lenses of conglomerate and gravel; interbedded shale and sandstone in lower parts; overlies rocks of Jurassic age
- Amran Series--Limestone, marl, and shale; lower part locally includes detrital beds. The series is overlain by a less wide Upper Jurassic transition zone of gypsum, clay, marl, shale, sandstone and some limestone of Callovian and Kimmeridgian age
- Geologic contact
- *Menjidah, #1,2 Well with name and number. *Menjidah #1,2- well name, or name with number, inventoried for the Al Baun Project 142- well identification number referred to in well tables
- *Menjidah, #1,2 Water sample, with number of sample. Number referred to in well tables
- 60 Depth to water, in meters(m). Contours generalized. Contour interval 5m
- (#1-95) Approximate locations of well inventory. Number referred to in well tables
- *Menjidah 198 Rain gage, with name and number (well identification number). Number referred to in well tables
- Volcanic cone
- Raydah Populated area, village, with name
- Road, all weather, hard surface
- Road, all weather, loose surface
- *Geologic explanation adapted from "Preliminary geologic map of North Yemen," Grolier and Overstreet, U.S.G.S. Open File Report 76-741
- Names preceded with asterisk(*) are not verified names of the U.S. Board on Geographic Names

QUATERNARY

TERTIARY AND CRETACEOUS

JURASSIC