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STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
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Geologic Map of the Bonanza Quadrangle, Klamath County, Oregon

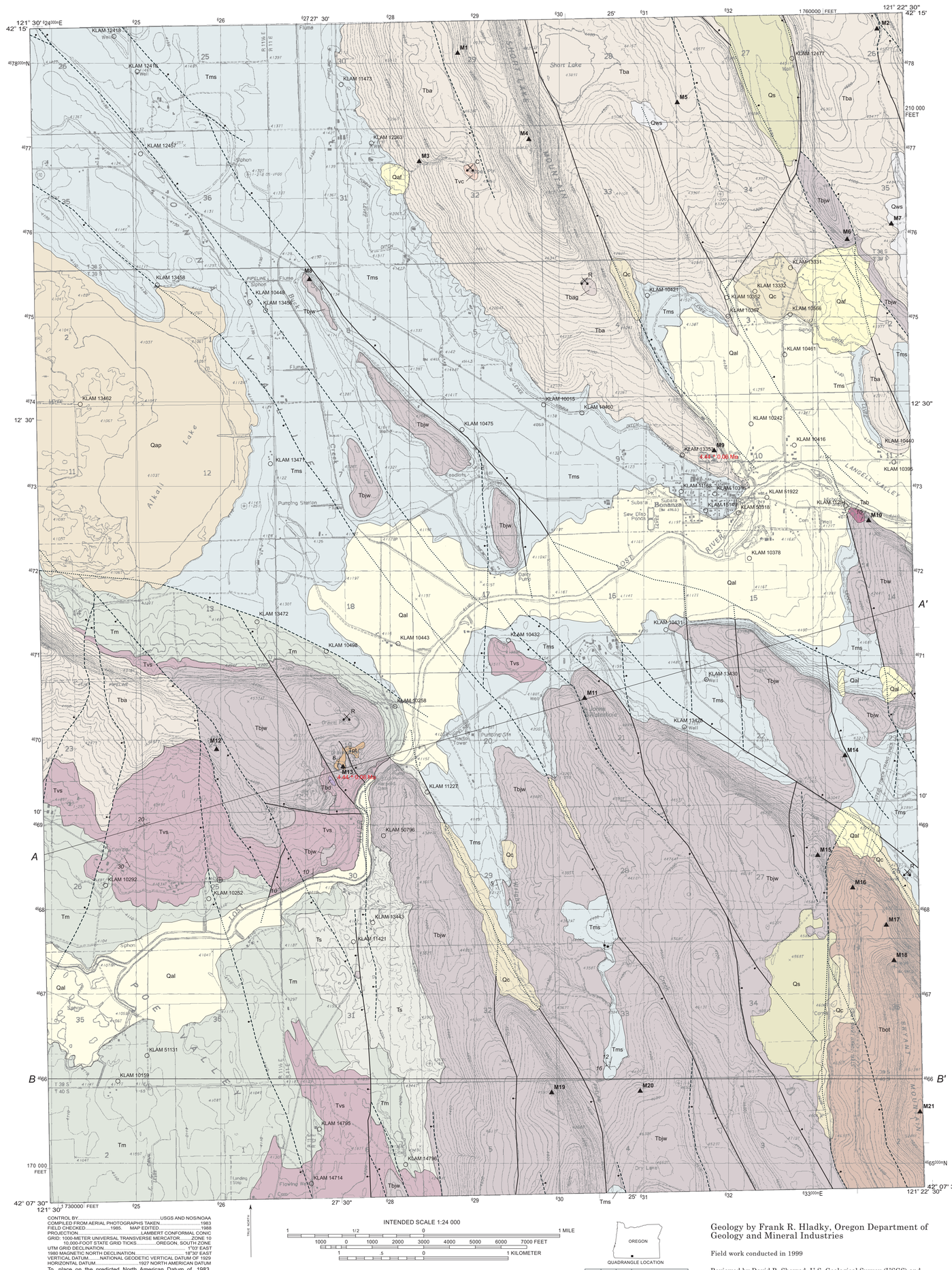
2003

GMS-116

Geologic Map of the Bonanza Quadrangle, Klamath County, Oregon

By Frank R. Hladky

Supported by the U.S. Geological Survey, National Cooperative Geologic Mapping Program under assistance award no. 99HQAG0036



CONTROL BY.....USGS AND NOS/NOAA
COMPILED FROM AERIAL PHOTOGRAPHS TAKEN.....1983
FIELD CHECKED.....1985. MAP EDITED.....1988
PROJECTION.....LAMBERT CONFORMAL CONIC
GRID: 1000-METER UNIVERSAL TRANSVERSE MERCATOR.....ZONE 10
10,000-FOOT STATE GRID TICKS.....OREGON, SOUTH ZONE
UTM GRID DECLINATION.....1°03' EAST
1980 MAGNETIC NORTH DECLINATION.....18°30' EAST
VERTICAL DATUM.....NATIONAL GEODETIC VERTICAL DATUM OF 1929
HORIZONTAL DATUM.....1927 NORTH AMERICAN DATUM

To place on the predicted North American Datum of 1983, move the projection lines as shown by dashed corner ticks (18 meters north and 92 meters east)
There my be private inholdings within the boundaries of any Federal and State Reservations shown on this map
No distinction made between houses, barns, and other buildings

CONTOUR INTERVAL 20 FEET
SUPPLEMENTARY CONTOUR INTERVAL 5 FEET
CONTROL ELEVATIONS SHOWN TO THE NEAREST 0.1 FOOT
OTHER ELEVATIONS SHOWN TO THE NEAREST FOOT
To convert meters to feet multiply by 3.2806
To convert feet to meters multiply by 0.3048

1	2	3	1 Swan Lake 2 Yonna 3 Yainax Butte 4 Dairy 5 Lorella 6 Merrell 7 Malin 8 Bryant Mtn
4		5	
6	7	8	

ADJOINING 7.5' QUADRANGLE NAMES

Geology by Frank R. Hladky, Oregon Department of Geology and Mineral Industries

Field work conducted in 1999

Reviewed by David R. Sherrod, U.S. Geological Survey (USGS) and Ian P. Madin, Oregon Department of Geology and Mineral Industries (DOGAMI)

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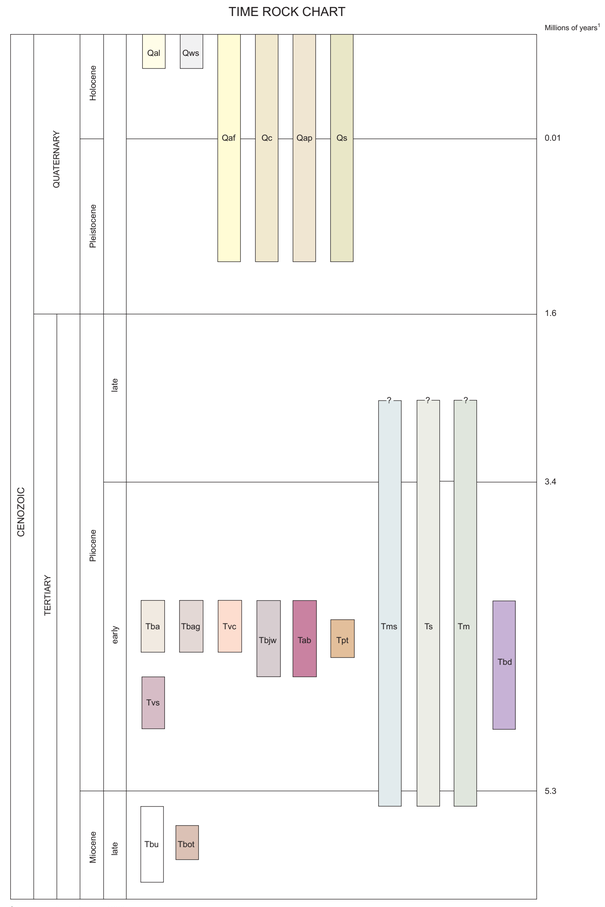
Cartography by Clark A. Niewendorp

TIME ROCK CHART



[1]Time scale from Palmer, 1983

EXPLANATION OF MAP UNITS

(see accompanying text for complete description of geologic units)

Surficial Units

- Qal — Alluvium (Holocene)
- Qws — Windblown sand (Holocene)
- Qaf — Alluvial fan deposits (Holocene and Pleistocene)
- Qc — Colluvium (Holocene and Pleistocene)
- Qap — Playa deposits (Holocene and Pleistocene)
- Qs — Lacustrine and paludal deposits (Holocene and Pleistocene)

Volcanic Units

- Tba — Tertiary basaltic andesite (Pliocene)
- Tbag — Tertiary basaltic andesite agglutinate (Pliocene)
- Tvc — Basaltic andesite cinder deposits (Pliocene)
- Tbjw — Basalt of Johns Waterhole (Pliocene)
- Tab — Altered basalt (Pliocene)
- Tpt — Palagonitic tuff (Pliocene)
- Tvs — Volcanic surge deposits (Pliocene)
- Tbu — Basaltic andesite (shown only in cross sections) (Miocene?)
- Tbot — Tholeiitic olivine basalt (Miocene)

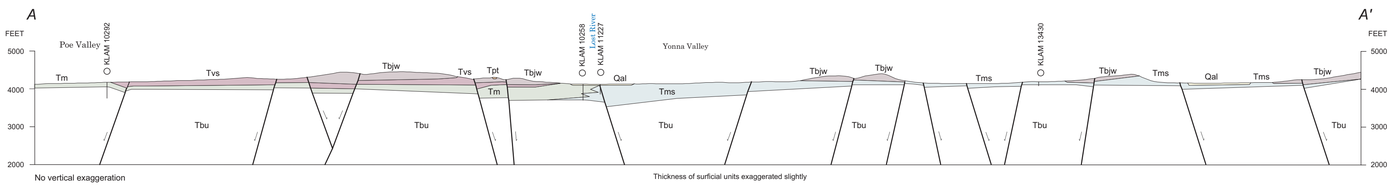
Sedimentary Units

- Tms — Undifferentiated mudstone, siltstone, and sandstone (Pliocene and Miocene)
- Ts — Sandstone (Pliocene and Miocene)
- Tm — Diatomaceous and tuffaceous mudstone (Pliocene and Miocene)

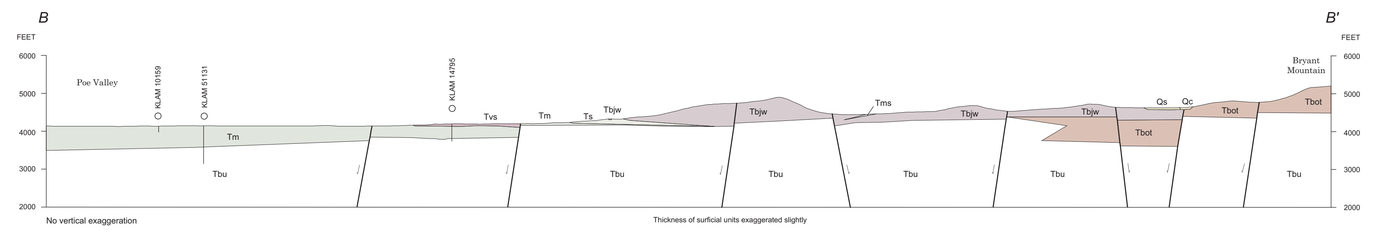
Intrusions

- Tbd — Basaltic andesite dikes (Pliocene)

GEOLOGIC CROSS SECTION A-A'



GEOLOGIC CROSS SECTION B-B'



MAP SYMBOLS

- **Contact**--Approximately located
- **Fault**--Solid where certain, dashed where approximately located, dotted where concealed: ball and bar on downthrown block
- **Inclined bedding**--Showing strike and direction of dip
- **Inclined bedding**--Showing approximate stike and direction of dip
- **Horizontal bedding**
- **Vertical or near vertical joint**
- KLAM 11421 — **Water well**--Type of use unspecified; wells designated with Oregon Water Resources Department's drill-log identification number--See Table 4.1. All of the well locations are derived from GPS-derived UTM coordinates provided by the OregonWater Resources Department. Wells hovering above cross sections have been projected and most are within 300 m of section line
- M2 — Geochemical and geochronology sample location with map number--See Tables 1.1 and 1.2 in accompanying text; whole-rock $^{40}Ar/^{39}Ar$ age determination: M9 = 4.44 ± 0.04 Ma, M13 = 4.38 ± 0.06 Ma
- Sand, Gravel; commodity type: R = crushed rock, C = cinder

This map is available from:

The Nature of the Northwest Information Center
800 NE Oregon Street #5
Portland, OR 97232
503/872-2750 www.naturenw.org
and the Baker City (541-523-3133) and Grants Pass (541-476-2496), Field Offices of the Oregon Department of Geology and Mineral Industries