STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
VICKI S. McCONNELL, STATE GEOLOGIST

OFR O-04-13

Geologic Map of Josephine County, Oregon

Len Ramp, and Norman V. Peterson
2004

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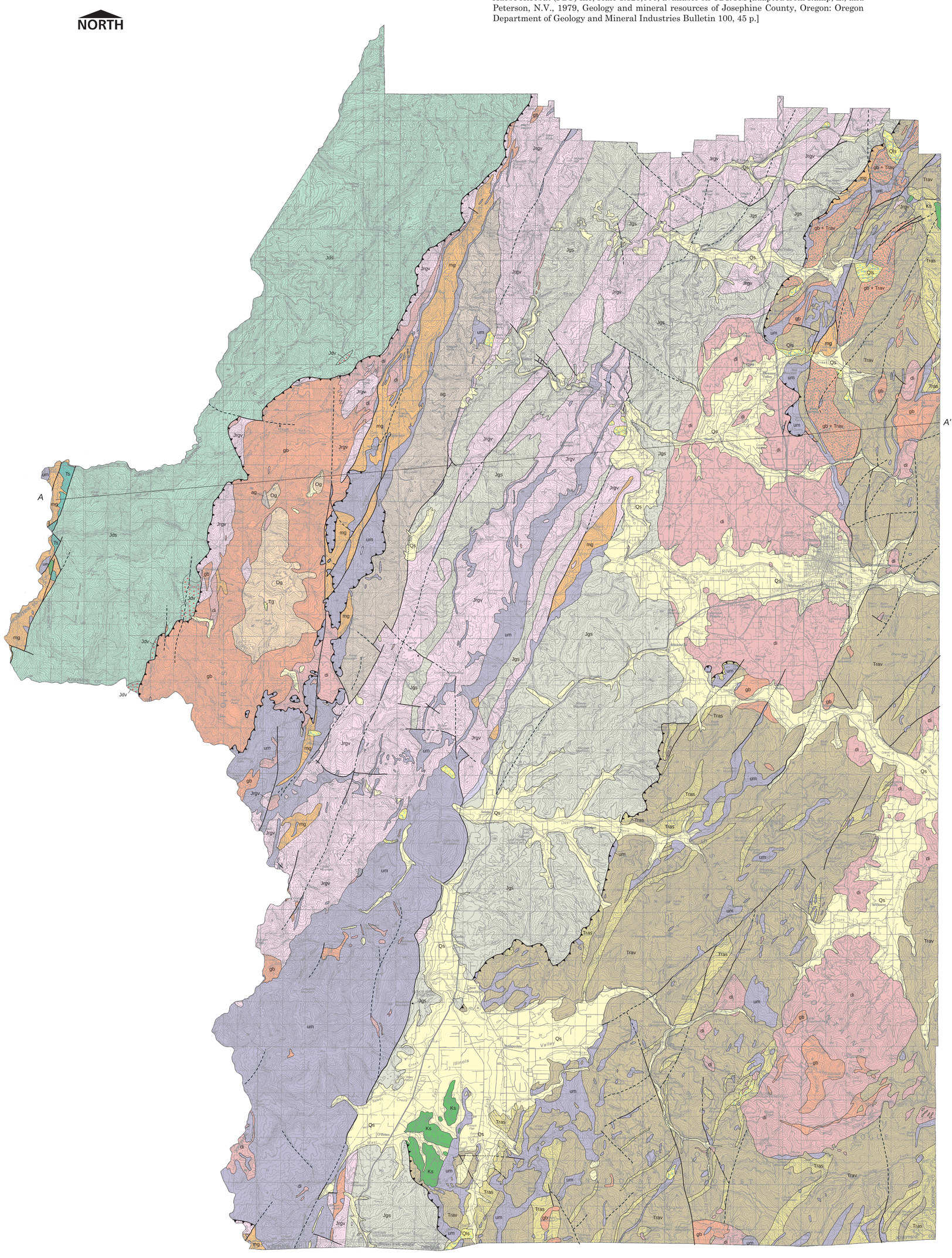
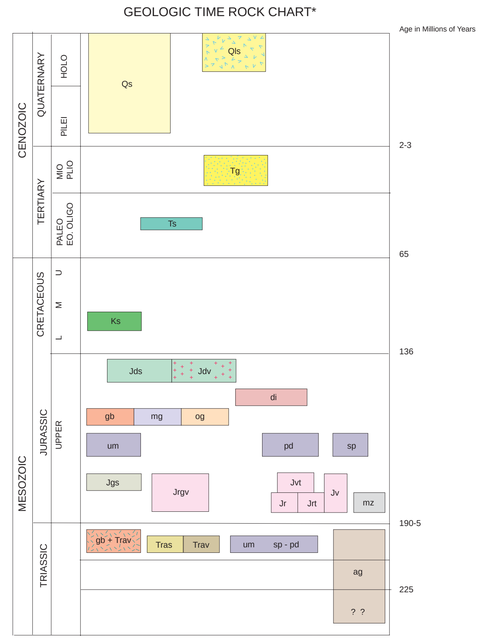
Ramp, L., and Peterson, N.V., 2004, Geologic Map of Josephine County, Oregon, adapted from Ramp, and Peterson, N.V., 1979 map: Geologic Map of Josephine County, Oregon, Plate 1, one Adobe Acrobat (PDF) file, scale 1:125,000, available on CDROM [adapted from Ramp, L., and Peterson, N.V., 1979, Geology and mineral resources of Josephine County, Oregon: Oregon Department of Geology and Mineral Industries Bulletin 100, 45 p.]

NORTH



GEOLOGIC TIME ROCK CHART*



EXPLANATION

(Boundaries are approximate; statements are general; site evaluations require onsite investigation)

SEDIMENTARY, VOLCANIC, AND METAMORPHIC ROCK UNITS

Qs — **Quaternary sediment:** Stream-deposited sand, silt, and gravel; bench gravel deposits; glacial moraine; outwash and fan deposits (not always shown where thin). Source of sand and gravel where conveniently located. Some areas still contain important deposits of placer gold and minor platinum

Qls — **Landslide deposit:** Mass-wasted rock and soil debris with wide range of size and composition. Only a few of the larger and more recent landslide areas have been mapped. Ancient landsides in ultramafic rocks may contribute to reserves of nickel-bearing laterite. Colluvium (pattern) composed of loose rock and soil derived from underlying bedrock

Tg — **Tertiary gravel:** Old stream gravels above 4,000 ft elevation near York Butte. No known mineral potential, but these deposits probably contributed some placer gold where carried by erosion into streams such as Red Dog Creek

Ts — **Umpqua Group:** Marine sedimentary rocks including conglomerate, sandstone, and siltstone exposed near west edge of County along Illinois River. No known mineral potential

Ks — **Marine sedimentary rock:** Marine, beach, and nearshore deposits of conglomerate, sandstone, and siltstone; includes Lower Cretaceous "Grove Creek Strata" of Page and other (1977) and Jones (1960); formerly Hornbrook Formation of Peck and others (1956) in Grave Creek drainage, and Lower Cretaceous rocks (Horsetown Formation) of Wells and others (1949) in southern Illinois Valley (Imlay and others, 1959). Forms bed rock for gold placer mines in Illinois Valley. Conglomerate layers may have contributed some gold

Jdv / Jds — **Dothan Formation:** Marine sandstone, siltstone, chert, and conglomerate (Jds). Pillow basalt and tuffs (Jdv). No known metallic minerals; locally used as source of road-building material

Jgs — **Metasedimentary rock:** Slaty siltstone, sandstone, and shale. Galice Formation of Diller and Kay (1924), Wells and others (1940, 1949), and Wells and Walker (1953). Gold mineralization in quartz veins and shear zones occurs locally. This unit is bed rock for numerous gold placer mines. Where deeply weathered, rocks form clay suitable for common brick and tile

Jrgv — **Metavolcanic rock:** Rogue and Galice Formations, including siliceous to basic tuffs, andesite to basaltic flow rock, pillow lavas, breccias, and agglomerates; also contains minor interbedded tuffaceous sedimentary rocks including chert, greywacke, and mudstone. Diabasic dike swarms occur locally. Most favorable unit for locating massive sulfide deposits and gold-bearing quartz veins. Many productive mines occur in metavolcanic rocks with gabbro-serpentininte associations

Tras / Trav — **Applegate Group:** Metasedimentary rocks include slaty siltstone, argillite, quartzite, phyllite, schist, chert, conglomerate, and lenses of limestone (largely marble) (Tras). Metavolcanic rocks include pillow lavas, tuffs, breccias, agglomerates, and, locally, numerous gabbro and diabase dikes (Trav). Metallic minerals are found mainly with metavolcanic rocks and include volcanogenic base metal sulfide deposits near Takilma and numerous gold-bearing quartz vein, Lenses of high-purity limestone (marble) and pods of rhodonite are associated with Metasedimentary rocks

ag — **Briggs Creek amphibolite:** Gneissic amphibolite rich in quartz, green amphibole, and plagioclase; locally includes quartzite and garnet-rich layers; may be equivalent to the Applegate Group or May Creek Schist of Diller and Kay (1924). Contains gold-bearing quartz veins, narrow zones of base metal sulfides, and mineral lenses of rhodonite and manganese oxide

INTRUSIVE ROCK UNITS

di — **Quartz diorite and related rock:** Includes hornblende diorite, granodiorite, and a few dacite and diabase dikes. Where decomposed is source of common fill. Pegmatite veins contain high-purity quartz and feldspar. Minor gold, copper, and molybdenite mineralization occurs near contact with older rocks

gb + Trav — **Dike rock:** Areas of abundant gabbro and diabase dike swarms in older volcanic rocks (gb + Trav). Gold-bearing quartz veins are concentrated in these rocks primarily in Greenback area

gb / mg / Og — **Gabbro (gb), metagabbro (mg), and olivine gabbro (og):** Includes massive and layered gabbroic rocks with cumulate textures. Pyroxenes of metagabbros are generally altered to amphiboles, and rocks resemble gneissic amphibolites. Olivine gabbro locally contains minor disseminated copper sulfides; gabbros locally have concentrations of up to 10 percent magnetite

um — **Ultramafic rock:** Largely serpentinite with some residual peridotite including harzburgite, dunite, and pyroxenite. Narrow serpentinite bodies are highly sheared and occupy zones of major faulting. Contains deposit of podiform and disseminated chromite, nickel in laterites, and minor copper and gold. Platinum of placer deposits also originates in these ultramafic rocks

Modified after Diller and Kay (1924); Godchaux (1969); Page and others (1978); Shenon (1933a): Vail (1977); Wells and others (1940); Wells and others (1949); Wells and Peck (1961); and Wells and Walker (1953).

Note: Units Qoc and Qal (not shown on map or in the Time Rock Chart) are included in unit Qs; units Jgv (not shown on map or in the Time Rock Chart), Jvt, Jr, Jrt, and Jv included in unit Jrgv; pd (peridotite), sp (serpentinite), and sp-pd (serpentinized peridotite) equivalent to unit um; and unit mz is a mineralized zone in unit Jrt.

*Time Rock Chart Modified

GEOLOGIC SYMBOLS

Fault—Certain, dashed where approximately located, dotted where concealed: ball and bar on downthrown block; some faults may have been channelways for ascending metal-bearing solutions that resulted in deposits of gold, silver, copper, and mother minerals; however, some faults are post-mineralization and displace ore-bearing units

Thrust—Certain, dashed where approximately located, and dotted where concealed; sawteeth on upper plate; some important gold mineralization may be associated with thrust fault marking east edge of Dothan Formation, (Jds, Jdv) e.g., Benton Mine and Red Elephant and Blue Bell prospects. Direct association, however, is obscure

17½° EAST OF TRUE NORTH
APPROXIMATE MEAN DECLINATION, 1999

SCALE 1: 125 000
2 0 2 4 6 8 10 MILES
2 0 2 4 6 8 10 KILOMETERS

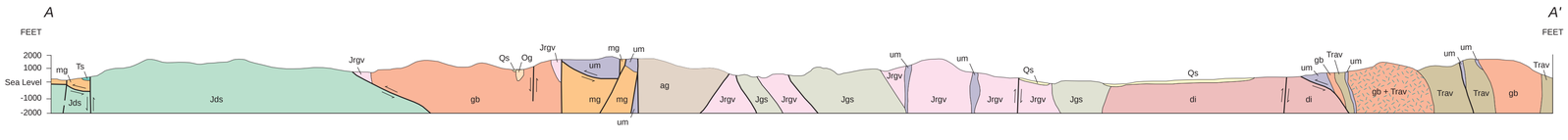
OREGON
COUNTY LOCATION

Base map modified from 1:100 000 scale topographic map series
and scaled to original map representation
Universal Transverse Mercator projection
NAD 1927, NAVD 29

Len Ramp and Norman V. Peterson, 2004, Plate 1

Original cartography by C. A. Schumacher, 1979
Digital cartography by Clark Niewendorp, 2004

GEOLOGIC CROSS SECTION A-A'
(modified)



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