

U. S. DEPARTMENT OF THE INTERIOR

U. S. GEOLOGICAL SURVEY

Preliminary Geologic Map of the Canoga Park 7.5' Quadrangle,

Southern California

Compiled by

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Open-File Report 93-206

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## INTRODUCTION

This map is a preliminary product of the Southern California Digital 1:100,000 Geologic Map Series (Morton and Kennedy, 1989). The 1:24,000 compilation was scanned and processed digitally using the U. S. Geological Survey A La Carte menu-driven adaptation (Wentworth and Fitzgibbon, 1991) of ARC/INFO, a commercial geographic information system (GIS) available from Environmental Systems Research Institute, Redlands, California. Minor adjustments have been made in geologic boundaries to conform to the metric base, which was enlarged from 1:100,000.

This 1:24,000 quadrangle is one of eight that form the southwest quarter of the Los Angeles 1:100,000 quadrangle; the 1:24,000 maps form the basic data supporting the regional-scale quadrangles, and thus include data on exploratory wells and fossil collections.

Stratigraphic nomenclature is largely that of the source materials, modified where necessary to reflect that of Yerkes and Campbell (1979), particularly in regard to units of the Topanga Group; it is subject to further modification as compilation progresses.

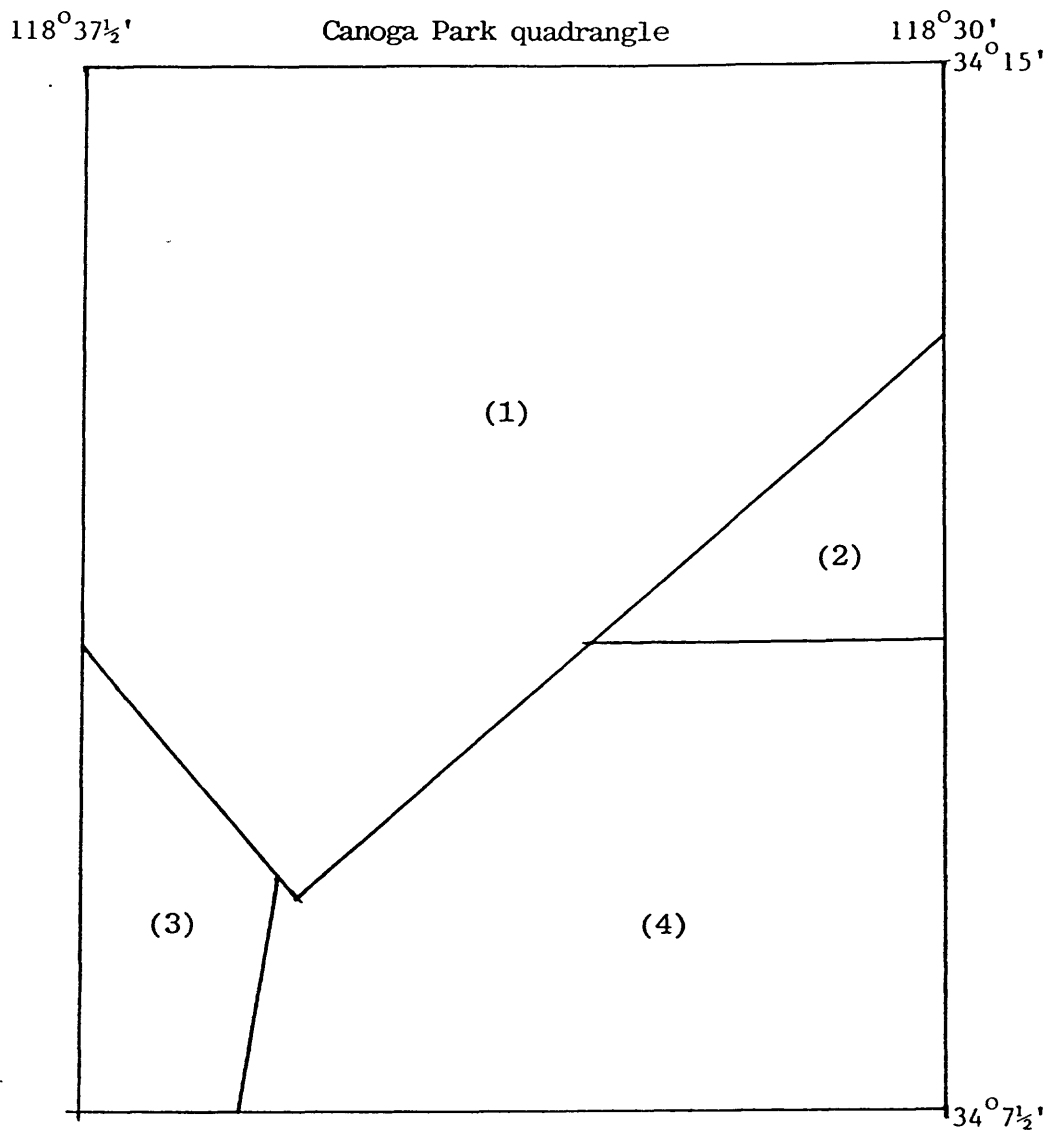
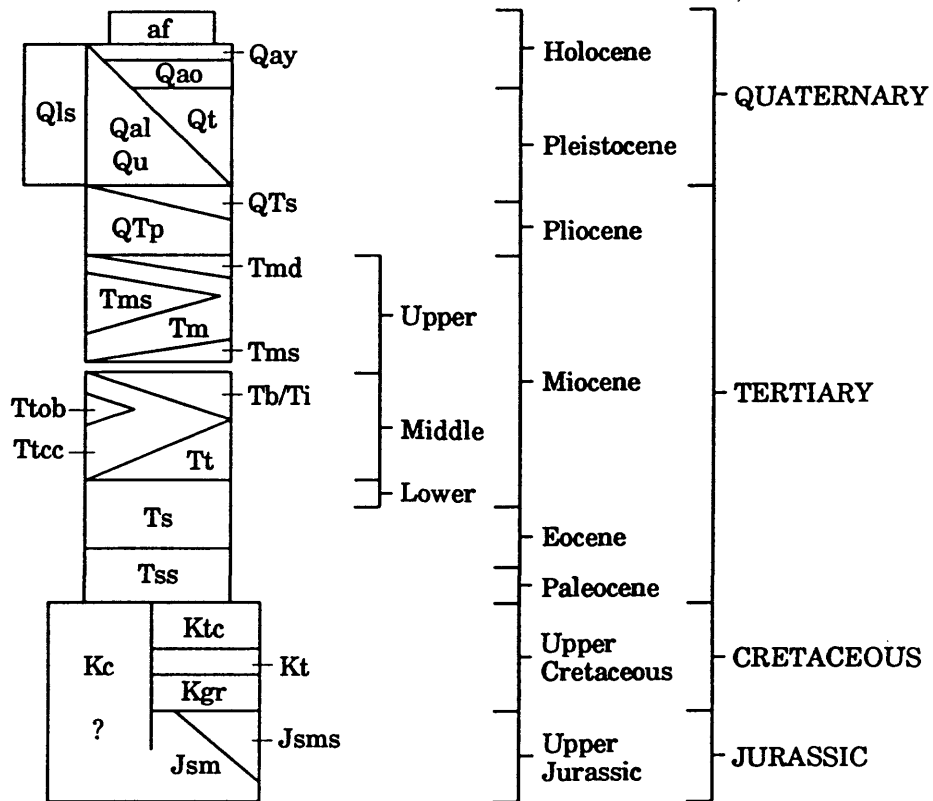


Figure 1--Sources of geologic mapping

1. Tinsley and others (1985) and Yeats and Shields (1977).
2. Tinsley and others (1985).
3. Soper (1938), and Tinsley and others (1985).
4. Hoots (1931); Tinsley and others (1985); Weber and Frasse (1984); field investigations by authors.

# **CORRELATION OF MAP UNITS, PRELIMINARY GEOLOGIC MAP, CANOGA PARK QUADRANGLE**



# EXPLANATION, PRELIMINARY GEOLOGIC MAP, CANOGA PARK QUADRANGLE

## DESCRIPTION OF MAP UNITS

af	Artificial fill
Qay	<b>Alluvium</b> (late Holocene)--Gravel, sand, silt, and clay; unconsolidated and uncemented; underlies areas flooded occasionally before 1940; thickness 0-3 m; less than 1000 years old
Qao	<b>Alluvium</b> (Holocene)--Gravel, sand, silt, and clay; unconsolidated and uncemented; thickness 0-30 m; age 1,000-10,000 years
Qal	<b>Alluvium</b> (Holocene and Pleistocene)--Sand, gravel, and silt in and adjacent to active channels
Qu	<b>Alluvium, undivided</b> (Holocene and Pleistocene)--Gravel, sand, silt, and clay; slightly to well consolidated or cemented; chiefly floodplain deposits
Qls/Qls?	<b>Landslide deposits</b> (Holocene and Pleistocene)--parent materials include both surficial deposits and bed-rock
Qt	<b>Terrace deposits</b> (Pleistocene)--Bouldery to pebbly gravel, sand, and silt; poorly to well consolidated
QTs	<b>Saugus Formation</b> (Pleistocene and Pliocene)--Non-marine sandstone and conglomerate
QTp	<b>Pico Formation</b> (Pleistocene and Pliocene)--Marine blue-gray fossiliferous sandstone, local siltstone and conglomerate; siltstone locally yields foraminifera referred to the Venturian and Wheelerian Stages
Tm	<b>Modelo Formation</b> (Miocene)--Silty shale or soft earthy siltstone and interbedded fine- to coarse-grained lithic or arkosic wacke. Unconformably truncates all older units. Maximum thickness about 1500 m; shales rich in foraminifera referred to the Mohnian Stage. Divided into:
Tmd	Shale and siltstone, diatomaceous or locally bentonitic, interlayered fine grained sandstone
Tms	Sandstone, massive, fine-to coarse-grained, sequences as thick as 635 m on north flank of Santa Monica Mountains
Tb/Ti	<b>Extrusive (Tb) /Intrusive (Ti) rocks</b> (Miocene)--chiefly basaltic, locally diabasic dikes, sills, and irregular bodies; may be extrusive in southeast corner of map; bodies as thick as 335 m

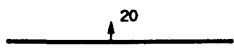
<b>Tt</b>	<b>Topanga Group, undivided</b> (middle Miocene)--massive sandstone, bouldery conglomerate, and concretionary shale; as thick as 1210 m near Encino reservoir; locally yields marine invertebrates characteristic of the Pacific Coast "Temblor Stage"
<b>Tcob</b>	<b>Volcanic breccia, Conejo Volcanics</b> --chiefly andesitic or basaltic
<b>Ttcc</b>	<b>Cold Creek member, Topanga Canyon Formation</b> of Yerkes and Campbell (1979)--Marine sandstone, siltstone, and pebbly sandstone; up to about 350 m thick; locally abundant molluscan fauna referred to the "Temblor Stage";
<b>Ts</b>	<b>Sespe Formation</b> (Miocene, Oligocene, and Eocene)--Nonmarine pebbly sandstone, conglomerate, and mudstone; characteristically but not uniformly a redbed sequence
<b>Tss</b>	<b>Unnamed strata</b> (Eocene and/or Paleocene)--Conglomerate and coarse-grained brown sandstone near Chatsworth reservoir
<b>Kc</b>	<b>Chatsworth Formation</b> of Colburn and others (1981) (Upper Cretaceous)--Marine, thick-bedded, well-cemented arkosic sandstone, minor siltstone and conglomerate. Molluscan faunas from nearby Simi Hills indicate a mid-Campanian to early Maestrichtian age (Saul and Alderson, 1981). Base not exposed or drilled
<b>Ktc</b>	<b>Tuna Canyon Formation</b> of Yerkes and Campbell (1979); Chico formation of Hoots (1931) (Upper Cretaceous)--Massive pebble conglomerate and intercalated sandstone, and thin-bedded shale; hard, dark gray to greenish-brown. Thickness about 790 m. Locally yields macrofossils referred to the Campanian Stage
<b>Kt</b>	<b>Trabuco Formation</b> of Durrell (1954)--(Cretaceous?)--Nonmarine cobble-pebble conglomerate and soft, red, clayey arkosic sandstone. Well-rounded and polished clasts of varicolored quartzite, dense porphyry, granite, and basalt, numerous chips of black slate. Thickness about 225 m
<b>Kgr</b>	<b>Granitic plutonic rocks</b> (Upper Cretaceous)--granite, quartz diorite and granodiorite, intrudes Santa Monica Slate. K/Ar age of biotite from core of granitic basement, 4079-91' in Chevron Leadwell 1, sec. 3, T. 1 N, R. 15 W (about 10 km east of center of this quadrangle): 99.2 m.y. (R. W.-Kistler, U. S. Geol Survey, 1981, unpub.)
<b>Jsm</b>	<b>Santa Monica Slate</b> (Jurassic)--Fine-grained gray to black, intensely jointed, well-developed slaty cleavage; thickness perhaps 1800 m. Yields sparse late Oxfordian to early Kimmeridgian pelecypods (Imlay, 1963)

Jsms

Spotted slate-with abundant well-developed, spindle-shaped crystals of cordierite, inferred to be a metamorphosed facies of Santa Monica Slate (Hoots, 1931)

#### MAP SYMBOLS


— — — — — **Contact** or mapped horizon-long-dashed where approximately located, short-dashed where inferred, dotted where concealed, queried where doubtful

 **Fault**-showing dip: long-dashed where approximately located, short-dashed where inferred, dotted where concealed

— △ △ △ △ △ △ — — — — — **Detachment fault**-teeth on upper plate

← — — — — — ↑ — — — — — **Anticline**-approximately located, showing crestline

— — — — — ↓ — — — — — → **Syncline**-approximately located, showing troughline

 **Strike and dip** of inclined beds

◇ 443 **Exploratory well**-number refers to table 1 below

\* <sup>f175</sup><sub>FH30</sub> **Fossil locality**-F, macrofossil collection; f, microfossil collection; number refers to table 2 below

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**Table 1--DATA ON EXPLORATORY WELLS, CANOGA PARK QUADRANGLE<sup>1</sup>**

MAP NO.	T	RW	SEC	OPERATOR	NAME/NUMBER	ELEV- ATION (ft.)	TOTAL DEPTH (ft.)	BOT- TOM <sup>2</sup>
432	2N	16	19	McKeon & Fox	Dotta 1	907	293	K
433	2N	16	20	Sun Oil Co.	W.P. Smith 34-20	911	4375	K
434	2N	16	20	ARCO	Pertusati 1	871	4578	K
435	2N	16	23	Texaco, Inc.	53-23	904	7012	Mm
436	2N	16	24	Chevron U.S.A.	Mission 2-1	948	5175	M
437	2N	16	25	Chevron U.S.A.	F.J. Clark C.H.1	811	7323	M
438	2N	16	27	ARCO	Northridge C.H.1	807	5513	M
439	2N	16	28	ARCO	Mulholland 1	810	6669	Mm
440	2N	16	30	Shell CPI	Shonfeld 1	928	5162	K
457	2N	16	24	F. R. Sproul	1	920	1206	K
458	2N	16	24	Anderson-Prit- chard Oil Co.	Ramsey-Chats- worth 1	914	1645	K
459	2N	16	25	Shell CPI	Davey C.H. 1	1022	1827	K
471	1N	16	14	Sun Val Oil Co.	1	805	2100	K
472	1N	16	21	Richgrove Oil Co.	1	1000	476	M
473	1N	16	23	Golden Gate Oil	1	934	1129	M1
474	1N	16	26	Golden Gate Oil	2	970	1745	M1
475	1N	16	30	Atlantic Oil	Nettleship 1	1425	3590	K

<sup>1</sup>Data from Yerkes and Showalter, 1990.

<sup>2</sup>K, Cretaceous; 1, late; M, Miocene; m, middle.

**Table 2--DATA ON FOSSIL LOCALITIES, CANOGA PARK QUADRANGLE**

<u>MAP NO</u> <sup>1</sup>	<u>T</u>	<u>RW</u>	<u>SEC.</u>	<u>COLL- ECTOR</u> <sup>2</sup>	<u>AGE</u> <sup>3</sup>	<u>MAP UNIT</u>	<u>SOURCE</u>
FH14	1N	16	25	USGS	Mm	Tt	Hoots, 1931
FH15	1N	16	26	USGS	Ml	Tm	Hoots, 1931
FH16	1N	16	34	USGS	Kl	Kt	Hoots, 1931
FH19	1N	16	33	USGS	Kl	Kt	Hoots, 1931
FH28	1N	16	32	USGS	Mm	Tt	Hoots, 1931
FH20	1N	16	32	USGS	Mm	Tt	Hoots, 1931
FH29	1N	16	33	USGS	Ml	Tm	Hoots, 1931
FH30	1N	16	32	USGS	Ml	Tm	Hoots, 1931
F3973	1N	16	32	USGS	P	Tcc	*RFY, unpub.
fH161	1N	16	19	USGS	Ml	Tm	Hoots, 1931
fH174	1N	16	18	USGS	Ml	Tm	Hoots, 1931
fI52	1N	16	17	USC	Delm.	Tp	Ingle, 1967
fI55	1N	16	17	USC	Delm.	Tp	Ingle, 1967
fI71	1N	16	17	USC	Vent.	Tp	Ingle, 1967
fI75	1N	16	8	USC	Vent.	Tp	Ingle, 1967
fI77	1N	16	8	USC	Wheel.	Tp	Ingle, 1967
fI81	1N	16	8	USC	Wheel.	Tp	Ingle, 1967
fI82	1N	16	8	USC	Wheel.	Tp	Ingle, 1967
fI83	1N	16	8	USC	Hall.	Tp	Ingle, 1967
fI84	1N	16	8	USC	Hall.	Tp	Ingle, 1967
fY390E	1N	16	31	USGS	Ml	Tm	*RFY, unpub.

<sup>1</sup>F, macrofossil collection; f, microfossil collection; number same as collector's number.

<sup>2</sup>USC, University of Southern California; USGS, U. S. Geol. Survey.

<sup>3</sup>Delm., Delmontian Stage (Miocene-Pliocene); Hall., Hallian Stage (late Pleistocene); K, Cretaceous; l, late; M, Miocene; P, Paleocene; Vent., Venturian Stage (late Pliocene); Wheel., Wheelerian Stage, (late Pliocene-early Pleistocene).

\*RFY, R. F. Yerkes, U. S. Geol. Survey field investigations.