U. S. DEPARTMENT OF THE INTERIOR

U. S. GEOLOGICAL SURVEY

Preliminary geologic map of the Los Angeles 7.5' quadrangle Southern California

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INTRODUCTION

This map is a preliminary product of the Southern California Digital 1:100, 000 Geologic Map Series (Southern California Areal Mapping Project-SCAMP (Morton and Kennedy, 1989). The 1:24,000 manuscript for this map was compiled from original sources, chiefly at 1:24,000, and scanned and processed digitally using the U. S. Geological Survey Alacarte menu-driven interface (Wentworth and Fitzgibbon, 1991) for ARC/INFO, a commercial geographic information system (GIS) avaialable from Environmental Systems Research Institute, Redlands, California.

This 1:24,000 quadrangle is one of sixteen that form the east half of the Los Angeles 1:100,000 quadrangle; the 1:24,000 quadrangles form the basic data supporting the regional-scale quadrangle, and thus include available data on exploratory oil wells and fossil collections.

Stratigraphic nomenclature is largely that of the source materials; it is subject to further modification as compilation progresses. Minor adjustments have been made in geologic boundaries to conform to the metric base, which was enlarged from 1:100,000.

The base map layers, drainage, roads, and topo contours, were prepared from publicly-available digital line graph (DLG) data for the 1:100,000 Los Angeles metric topographic map (1979 edition) by R. H. Campbell, U. S. Geological Survey, Reston, VA.

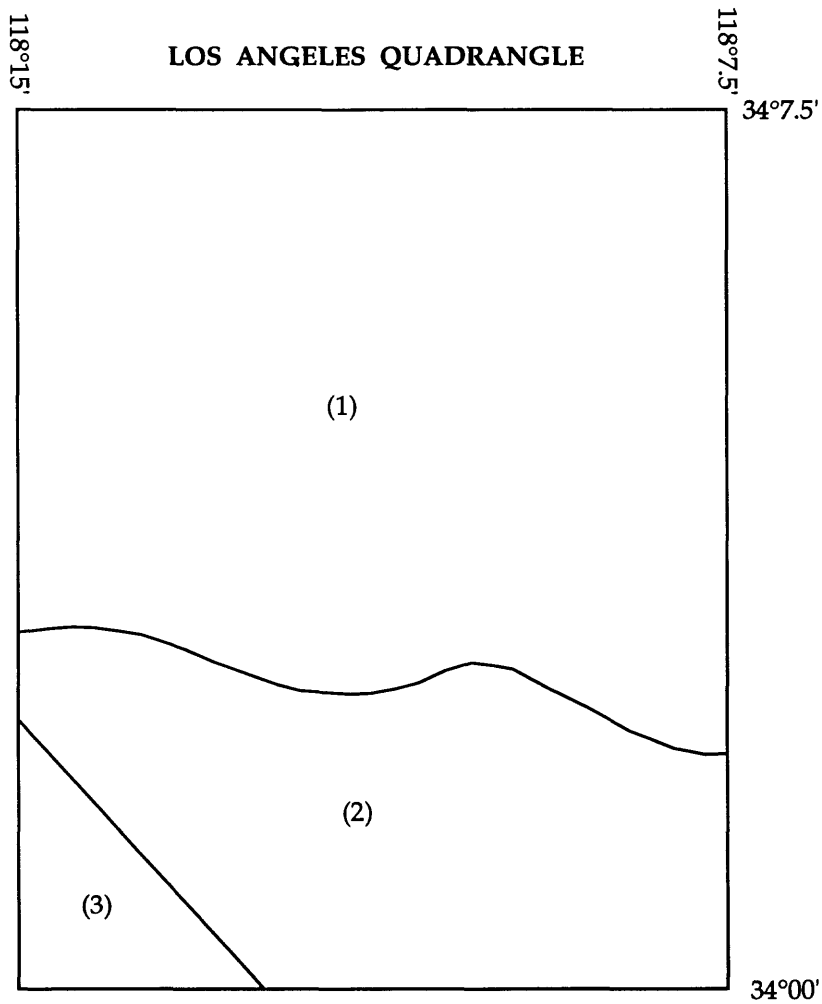
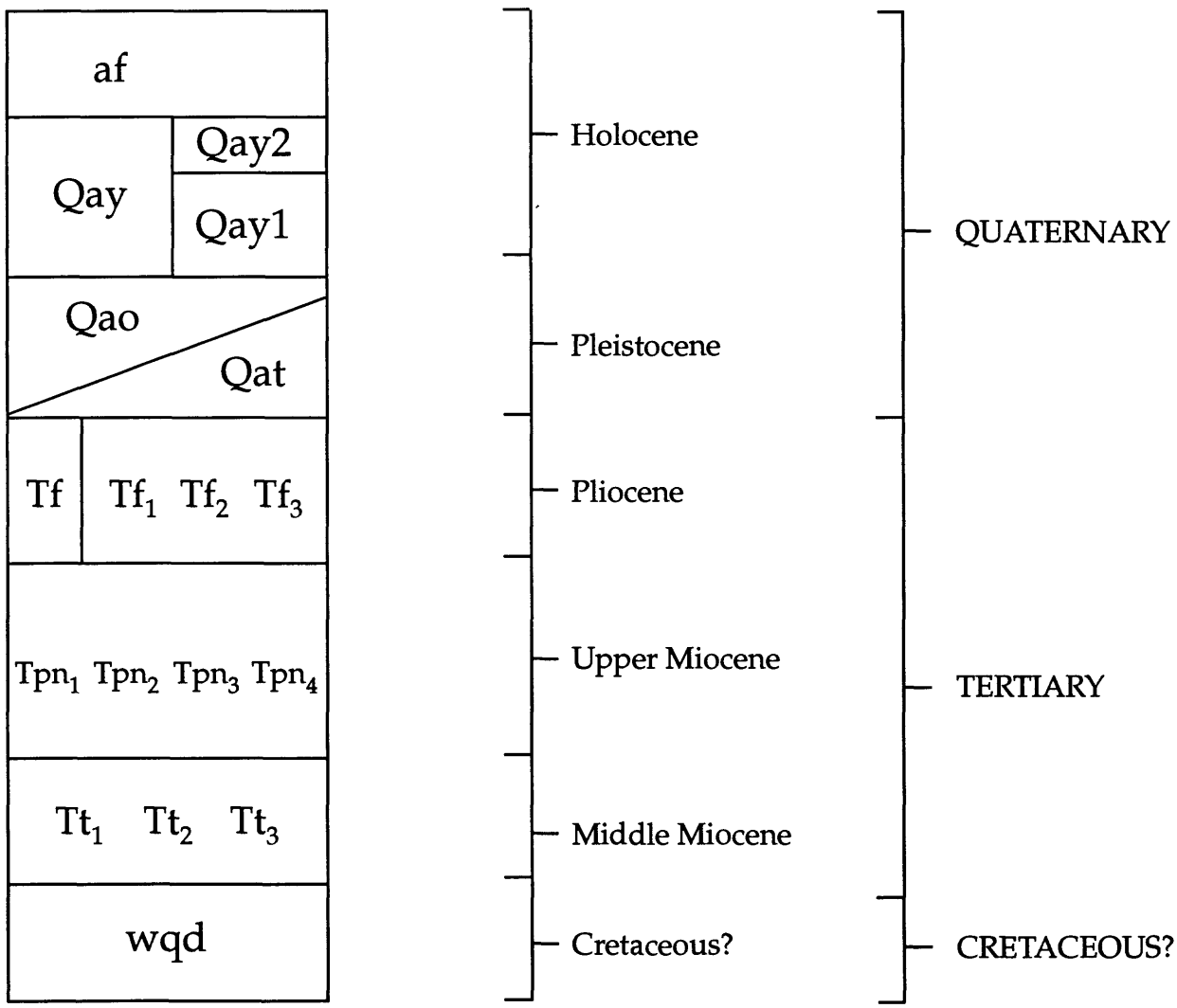


Figure 1 – INDEX TO SOURCES OF GEOLOGIC MAPPING

1. Lamar, 1970, pl. 1.
2. Tinsley and others, 1985, fig. 141.
3. Hsu and others, 1982, pl. 1; Poland and others, 1959, pl. 2.

CORRELATION OF MAP UNITS, PRELIMINARY GEOLOGIC MAP OF THE LOS ANGELES QUADRANGLE



EXPLANATION, PRELIMINARY GEOLOGIC MAP OF THE LOS ANGELES QUADRANGLE

DESCRIPTION OF MAP UNITS

af artificial fill Mostly supporting freeways

Qay **Alluvium** (Holocene)-Gravel, sand, silt, and clay in active drainages; unconsolidated and uncemented; **Qay2**, underlies areas flooded historically, thickness 0-3 m, less than 1000 years old; **Qay1**, undifferentiated Holocene alluvium, age + 1000-10,000 years

Qao **Older alluvium** (Late Pleistocene)-Gravel, sand, silt, and clay; moderately to well consolidated, slightly to well cemented; dissected; in south fourth of quadrangle equivalent to units Q1, Q2, and Q3 of Bullard and Lettis (1993), interpreted as remnants of a system of piedmont alluvial fans that extended through water gaps in the hills

Qt **Terrace deposits** (Pleistocene)-Gravel, sand, silt, and clay forming alluvial terrace and dissected alluvial plain deposits; locally includes unit Q1 of Bullard and Lettis (1993)

Tf **Fernando Formation** (Pliocene)-Siltstone, sandstone, and conglomerate; thickness about 110 m, siltstone locally contains Repettian-Wheelerian Stage boundary; **Tf1**, conglomerate and coarse-grained conglomeratic sandstone, , clasts generally subangular, of leucocratic igneous rocks, averaging about 5 cm in diameter; **Tf2**, sandstone, generally very fine to medium grained, massive, soft, micacous; **Tf3**, siltstone, massive, soft, micaceous, local layers of soft pebbly sandstone

Tpn **Puente Formation** (Upper Miocene)-Interbedded sandstone, siltstone, shale, and rare conglomerate or or conglomeratic sandstone; total exposed thickness about 1880 m; foraminifera and fish scales referred to Kleinpell's (1938) Mohnian and Luisian? Stages (Table 2); **Tpn1**, siltstone, well bedded, very fine-grained sandstone, poorly cemented; **Tpn2**, shale, well bedded, siliceous; **Tpn3**, diatomaceous shale, well bedded, fissile, soft, punky, interbeds of fine- to coarse-grained sandstone; **Tpn4**, sandstone, medium to coarse grained, thinly laminated to thick beds, usually hard and well cemented

Tt **Topanga Formation** (Middle Miocene)-Sandstone, shale, coarse-grained pebbly sandstone, and pebble-cobble conglomerate; thickness as great as 1675 m; locally contains foraminifera and mollusks (Table 2); **Tt1**, sandstone, medium to coarse grained, locally conglomeratic; **Tt2**, conglomerate, massive to well bedded, locally with breccia at base; **Tt3**, siltstone, well bedded, with interbedded sandstone, shale, and chert

wqd **Wilson Quartz Diorite**-(Cretaceous?)-**wqm**, massive, medium to coarse grained, deeply weathered, friable; **wqg**, gneissic, foliated, deeply weathered

MAP SYMBOLS

Contact or mapped horizon—Long-dashed where approximately located, short-dashed where inferred

Fault— Long-dashed where approximately located, short-dashed where inferred, dotted where concealed, queried where doubtful

Thrust fault—Dashed where approximately located, dotted where concealed; sawteeth on upper plate

Anticline— Approximately located, dotted where concealed; showing crestline

Syncline— Approximately located, dotted where concealed; showing troughline

70 **Strike and dip of inclined beds**

408 **Exploratory well**—Number refers to table 1, below

FH13 **Fossil locality**—F, macrofossil collection; f, microfossil collection; number refers to table 2, below

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Table 1 - DATA ON EXPLORATORY WELLS, LOS ANGELES QUADRANGLE[1]

MAP NO.	TS	RW	Sec.	OPERATOR	NAME/NUMBER	ELEV-ATION (ft)	TOTAL DEPTH (ft)	BOT-TOM[2]
593	1	12	18	J.J. Rekar	1	540	1100	Mu
594	1	12	19	Yellowstone Oil Co.	Yellow Castruccio 1	450	2014	Mu
595	1	12	19	Norman McDonald	1	449	1138	Mu
596	1	12	19	Jordan Crude Oil	1	410	2460	Mu
597	1	12	22	Conoco, Inc.	Monterey Park Unit 1-1	424	4427	sl
607	1	12	28	Aminoil USA	Signal-Garvey 1	470	6608	Mu
608	1	12	28	Chevron USA	Monterey 2	420	3500	P
609	1	12	28	Chevron USA	Bishop-Hellman CH 1	414	5545	P
610	1	12	28	Texaco, Inc.	Heller 1	416	8363	M
611	1	12	29	Dumm Bros.-Olympic Ref.	16	545	2600	Mu
612	1	12	29	Puente Oil Co.	Rowland 1	545	2600	Mu
613	1	12	29	Chevron USA	Bishop-Hellman CH 2	343	5479	P
614	1	12	31	Occidental Pet.	Kazarian 1	341	8135	M
615	1	12	31	ARCO O & G	Boyle Community 33-1	313	5902	Mu
616	1	12	31	Boyle Royalties	104-1	320	4500	P
617	1	12	32	W.H. Taylor	1	320	5829	Mu
618	1	12	32	Chevron USA	Bleakwood CH 1	286	7072	M
619	1	12	33	ARCO O. & G.	Hellman 1	278	2468	P
632	1	13	11	I.H. Preston	Grand View 1	702	1195	Mu
633	1	13	9	Texaco, Inc.	Park 1	435	2300	sl
634	1	13	14	Texaco, Inc.	CH 5	320	2732	sl
639	1	13	22	Texaco, Inc.	So.Pacific CH 1	331	5750	Mu
640	1	13	23	Chevron USA	Edison CH 1	336	4693	Mu
641	1	13	24	O'Donnell & Wilde	1	452	2700	Mu
643	1	13	24	Schirm & Rubenstein	Huntington-Seger 1	438	3919	Mu
645	1	13	24	Texaco, Inc.	Golden State CH 1	380	4483	Mu
646	1	13	25	Getty Oil Co.	Huntington 2	366	3745	Mu
647	1	13	25	Chevron USA	Blanchard 3	350	3930	C
648	1	13	25	Chevron USA	Friend CH 1	392	7302	M
649	1	13	25	Getty Oil Co.	Huntington 1	440	3664	Mu
650	1	13	26	Atlantic Oil	Atlantic-Sunray-L.A. Shops 1	290	4500	Mu
651	1	13	26	Sta. Fe Springs Mutual Oil Synd.	1	207	2995	Mu
653	1	13	26	Chevron USA	Seventh Day Advent. CH 1	359	6580	Mu

MAP NO.	TS	RW	Sec.	OPERATOR	NAME/NUMBER	ELEV-ATION (ft)	TOTAL DEPTH (ft)	BOT-TOM[2]
654	1	13	26	Chevron USA	BEW 2	375	7653	Mu
655	1	13	27	Chevron USA	Miles CH 1	299	4534	Mu
656	1	13	27	F.F. Hoard	1	304	435	Mu
657	1	13	27	Chevron USA	Garey 1	275	9900	Mm
668	1	13	33	Chevron USA	Greyhound CH 1	265	6240	Mu
670	1	13	33	Chevron USA	Kohler CH 1	253	6284	Mu
671	1	13	34	Chevron USA	Dept. Rec. & Parks CH 2	271	7001	M
672	1	13	34	Indust. Royal-ties Co.	CH 1	263	2130	Mu
673	1	13	34	ARCO O. & G.	Los Angeles River Fee 1	262	4618	Mu
674	1	13	34	Aminoil USA	Signal-Standard-Exley 1	262	5630	Mu
675	1	13	34	ARCO O. & G.	L.A. River Commun. 1-1	260	4414	Mu
676	1	13	34	Chevron USA	So.Pacific 57-1	252	9524	M
677	1	13	35	ARCO O. & G.	Boyle Comm. 17-1	299	5868	M
678	1	13	36	ARCO O. & G.	Evergreen 1	295	7110	M
679	1	131	36	Boyle Royal-ties Co.	Taylor 1	300	4587	M
803	2	12	3	Texaco, Inc.	Montebello City Unit 1	250	8789	Mu
804	2	12	3	Ridge Oil Co.	Sea Cliff 1	260	8038	Mu
806	2	12	4	Texaco, Inc.	F. & M. Bank 1	264	4890	P
807	2	12	6	Superior Oil	Anderson A-1	296	5023	P
808	2	12	6	Bradford Bishop	Signal-union-Calvary CH 1	220	9330	M
809	2	12	6	Nordon Corp.	Nordon-Lipka 1-6	165	8229	M?
810	2	12	7	Custom Drlg.	M. N. S. 1	162	4785	P
811	2	12	7	ARCO O. & G.	Northside 1	160	7369	Mu
812	2	12	8	Ridge Hill Oil	Shaw 1	168	7568	P
813	2	12	8	Western Ave. Properties	Southside UP 5	178	7568	Mu
814	2	12	8	ARCO O. & G.	U.P. Unit 2	166	8861	Mu
815	2	12	8	Bradford Bishop	U.P.-Santa Fe 1	162	8970	Mu
816	2	12	8	Mobil Oil Corp.	Industrial 1	150	9285	Mu
817	2	12	9	Chevron USA	Saddler Comm. 1	184	89533	M
818	2	12	9	ARCO O. & G.	Keller 1	155	9358	Mu
819	2	12	9	ARCO O. & G.	Keller 2	153	6752	P
820	2	12	9	ARCO O. & G.	U.S. Rubber 1	160	8980	Mu
821	2	12	9	ARCO O. & G.	Vail 4	170	8657	Mu
822	2	12	10	Aminoil USA	Signal-C.M.D. 1	191	8700	Mu
837	2	12	18	Petroleum Sec.	Bandini 1	163	5805	P
838	2	13	2	UNOCAL	San Antonio EH 1	278	5703	Mu
839	2	13	2	Chevron USA	Fresno Recrea-tion Ctr. CH 1	275	9829	M
840	2	13	2	Aminoil USA	Signal-Union-Budd CH 1	237	10518	Mu

MAP NO.	TS	RW	Sec.	OPERATOR	NAME/NUMBER	ELEVATION (ft)	TOTAL DEPTH (ft)	BOTTOM[2]
841	2	13	3	D.H. Hostetter	1	271	5010	P
842	2	13	3	Chevron USA	Blue Diamond 1	235	8930	M
853	2	13	11	Neaves Petroleum Develops.	Neaves-Vernon 1	205	6517	P
854	2	13	13	Occidental Pet.	Vernon 1	189	9800	Mu

[1] Data from Yerkes and Showalter, 1990.
[2] C, confidential; M, Miocene; P, Pliocene; l, lower; sl, slate; u, upper.

Table 2 - DATA ON FOSSIL LOCALITIES, LOS ANGELES QUADRANGLE

MAP NO.[1]	T	RW	Sec	COLLECTOR[2]	AGE[3]	MAP UNIT	SOURCE[4]
FL25-20	1S	13	12	UCLA	Mu	Tpn3	DLL
FL25-23	1S	13	12	UCLA	Mu	Tpn3	DLL
FL27-13	1S	12	7	UCLA	Mm	Tt1	DLL
FL27-14	1S	12	7	UCLA	Mm	Tt1	DLL
FL27-18	1S	12	7	UCLA	Mm	Tt1	DLL
FL28-17	1S	12	7	UCLA	Mu	Tpn4	DLL
FL28-18	1S	12	8	UCLA	Mm	Tt1	DLL
FL28-21	1S	12	8	UCLA	Mu	Tpn2	DLL
FL28-22	1S	12	8	UCLA	Mu	Tpn2	DLL
FL28-24	1S	12	8	UCLA	Mm	Tt1	DLL
FL28-26	1S	12	8	UCLA	Mm	Tt1	DLL
FL30-20	1S	13	2	UCLA	Mu	Tpn3	DLL
FL31-3	1S	13	1	UCLA	Mm	Tt1	DLL
FL33-9	1N	12	32	UCLA	Mm	Tt3	DLL

1 F, macrofossil collection; number same as collector's number.
2 UCLA, University of California at Los Angeles.
3 M, Miocene; m, middle; u, upper.
4 DLL, Lamar, 1970.