Eaton-20-1937

MAP NO.	OPERATOR	WELL	ELEV. OF WELL	ELEV. TOP OF VOLCS.	PENE-TRATED THICK-NESS	STRAT. THICK-NESS	LITHOLOGY (DEPTHS FROM TOP OF WELL)	STRATIGRAPHIC RELATIONSHIPS AND REMARKS (DEPTHS FROM TOP OF WELL)
1.	Amerada Petroleum Corp.	Anaheim Comm. No.48-8	132′	-8,216 (?)	302′	290′±	Sidewall samples at 8,373′, 8,397′, 8,470′, 8,550′, 8,575′, 8,815′: fresh and altered medium grey to olive grey, medium grained basaltic tuff and subordinate tuff-breccia; probably palagonitic. Single core 8,346-8,351′: dark grey, partially altered basalt with olivine (?) phenocrysts.	Luisian strata overlying volcanic rocks from 8,210-8,373′. Sedimentary age below. Core description from company.
2.	Amerada Petroleum Corp.	Lamb Comm. No.68-6	21′	-10,286′	>20′	----	Cores from 10,307′-10,327′ are quartz-bearing diaz. basa., Cores from 8,481-8,528′ include greenish gray cgl. with clasts of dark greenish gray pyritiferous basalt.	Sedimentary rocks overlying diabase arc of Topanga (middle Miocene) age. Core descriptions from company.
3.	Axis Petroleum Co.	Tandberg No. 1	621′	-3,322′ (?)	No data	No data	Cores from 3,943-3,987′ are altered, dark gray-green igneous intrusive rocks.	Igneous rocks immediately overlain by middle or upper Mohnian sedimentary rocks. Core descriptions from company.
4.	Bandini Petroleum Co.	Segerstrom No.1	45′	-5,526′	>1,359′	No data	Cores from 5,614-5,635′, 5,122-5,132′, 8,405-8,475′, 6,625-6,632′: Bluish gray and reddish brown andesitic tuff-breccia and subordinate tuff. Some massive andesite in core at 6,625-32′. Cores from 6,810-20′, 6,925-5,935′ are very dark gray hypocrystalline hypersthene-augite andesite.	Marine (?) Miocene sedimentary strata overlie volcanic rocks. Well bottomed in volcanics.
5.	Continental Oil Co.	Bayly No.1	1,103′	-942′	1,823′	1,787′	Core at 2,647′ is massive, aphanitic, greenish gray, altered basalt or andesite. Core at 3,612′ is reddish to purplish andesite breccia; fragments are aphanitic, and as large as 1 1/2″ in diameter. Rest of section is predominantly the same.	Volcanic rocks overlain by undifferentiated middle Miocene Topanga strata. Underlain by Mt. Meadows dacite.
6.	Continental Oil Co.	Bixby No.62	19′	-11,798′	150±	----	Medium gray porphyritic intrusive rock. Large phenocrysts of plagioclase in phanatitic, medium grained matrix. Gabbro (?).	No data
7.	Continental Oil Co.	Buehler No.1	1,255′	-2,252′	549′	467′±	Cores from 1,979-2,085′ are sheared and silicified, bluish gray aphanitic volcanic rocks. Cores from 3,507-4,050′ are very dark gray to bluish gray, aphanitic fragmental volcanic rocks. Several fractured, with veinlings of quartz and calcite. Some minor tuff present.	Mohnian strata 1,979′ Volcanic rocks 2,086′ (fault?) Mohnian strata 8,607′ Volcanic rocks 4,056′ Relizian strata 4,134′ Core descriptions from company.
8.	Continental Oil Co.	Santa Ana Comm. No.1	74′	-4,243′ (?) (Shelton, 1953, lists top at -4,130′)	>94′	>68′	Cores from 4,317-4,411′ are reddish brown to dark gray amygdaloidal basaltic andesite, basaltic tuff-breccia, and subordinate palagonitic tuff.	Pliocene Pico strata overlie volcanic rocks; interbedded shale yielded Relizian Foraminifera; well bottomed in volcanic strata.
9.	Continental Oil Co.	Turnbull Comm. No.8	910′	-2,571′	182′±	----	Partially altered fine grained augite-diorite.	Lower Mohnian strata from 3,040-3,985′ interval includes intrusive rocks.
10.	O. F. Darling	Darling No.1	90′	-1,770′	No data	No data	No cores or data available.	No data
11.	H. S. Gale	Irvine Ranch No.1	45′	-2,110′±	>69′	>44′	Purplish gray basaltic breccia, with angular vesicular fragments as large as 4″ in diameter in a bluish gray vesicular matrix. Underlain by dark olive gray aphanitic basalt. Undetermined thickness of intrusive (?) rocks at ~-1,990′± not included in thickness figures.	Upper Pliocene-Relizian unconformity at ~-1,986′. No data on sedimentary strata between intrusive and extrusive rocks; well bottomed in volcanics.
	Patroleum Corp.	No.1					Dark gray to olive black, locally amygdaloidal olivine basalt, both massive and fractured. Severely reddened horizons suggest individual flow tops. Underlain (from 11,312′) by dark greenish gray basaltic breccia and tuff-breccia. Some fragments glassy, amygdaloidal, or reddened.	Thin limestone interbedded with volcanic rocks and tuff at 11,244′ yielded Luisian Foraminifera. Flows are overlain by lower Pliocene strata. Well bottomed in volcanic rocks.
13.	General Petroleum Corp.	Heath No.2	63′	-12,006′	>19′	>17′	Dark greenish gray to bluish gray amygdaloidal basalt, some phases fragmental.	Lavas overlain by Luisian sedimentary strata; well bottomed in volcanic rocks.
14.	General Petroleum Corp.	La Mirada No.46-1	102′	-12,472′±	>55′	>28′	Severely altered, dark olive gray basalt.	Overlain by Luisian strata; well bottomed in volcanic rocks.
15.	General Petroleum Corp.	Librown No.1	80′	-12,000′	142′ (aggregate)	141′	Medium bluish gray altered, amygdaloidal, massive basalt. Underlain by bluish gray altered tuff with subordinate interbedded thin flows.	Volcanic rocks overlain by Mohnian sedimentary strata, underlain by Vaqueros-Sespe (?) strata. Some interbedded sedimentary rocks, but no data on age.
16.	General Petroleum Corp.	McNally No.1	438′	-11,363′ (?)	>105′	>95′	Cores from 11,501′-11,525′ include interbedded brown shale and greenish gray altered basaltic (?) tuff that is thin-bedded and has sparse breccia fragments. From 11,525′ down is olive gray to dark greenish gray massive basalt, locally fractured and/or altered. Minor flow-banding. Company description reports minor fragmental units.	Overlain by Luisian sedimentary strata; well bottomed in volcanic rocks. Core descriptions from company.
17.	General Petroleum Corp.	Santous No.1	309′	-8,047′	44′	42′	Medium gray to medium dark gray, aphanitic basalt, locally amygdaloidal; here and there badly altered. Unavailable cores from lower part of section reported as "pyroclastic" by company.	Interbedded shales reportedly from Relizian-Luisian transition (L.S.Shelton, p.c.). Overlain by upper Miocene beds. In well No. 55, nearby, additional volcanic rocks were encountered beneath the sedimentary strata in which this well bottomed.
18.	General Petroleum Corp.	Was No.1	64′	-5,731′ (?)	>160 (?)	>150′ (?)	No cores available. Company lists dark gray volcanic breccia from 5,795′ to T.D.	Overlain by lower Pliocene beds; well bottomed in volcanic rocks. Shelton (1955) lists top at 5,598′± below sea level (5,662′ depth).
19.	P. M. Girard	Mark Fisher No.1	35′	-5,165′	>455′	No data on attitude of beds.	"Fragmental andesite"	Overlain by lower Pliocene beds; well bottomed in volcanic rocks. Data from Shelton (1953 and p.c.).
20.	Los Angeles Brewing Co.	Jones No.1	905′	305±	1,000+	No data on attitude of beds.	Altered basaltic tuff-breccia and palagonitic tuff.	Overlain by Mohnian strata, and reportedly underlain by Mohnian from which it is separated by a fault. Data from Shelton (1955 and p.c.).
21.	Marine Oil Co.	Well No.53	78′	-2,422±	>640′ (aggregate)	>582′± (aggregate)	Cores from approximately 2,500′ to 2,600′ are medium gray, finely vesicular to amygdaloidal, aphanitic andesite or basalt, plus subordinate purplish gray basaltic breccias. Cores from 2,854′ to T.D. are similar olive gray to dark greenish olive, altered, fine to coarse grained intrusive diabase.	Overlain by Mohnian shale; bottomed in diabase. Data on elevations and depth, and access to cores from Standard Oil Company of California.
22.	McCarthy Oil and Gas Co.	Lamb No.32	No data	~-5,800′±25	>641′	>628′	Poor data, no cores available. "Light gray tuff and dark green basalt."	No data on overlying sedimentary rocks; well bottomed in volcanic rocks. Data from Standard Oil Company of California.
23.	McKee Oil Co.	Kokx Comm. No.8-1	290′	-1,871′	Unknown, but probably very thin	----	Highly altered amygdaloidal basalt (?).	Overlain by lower Mohnian beds; underlain by Relizian. Data from Richfield Oil Corporation.
24.	McMillen Oil Co.	Walnut Creek No.1	1,175′ (?)	175′±	1,000′+	No data on attitude of beds.	Very dark gray, fine grained, porphyritic basalt underlain by dark gray hypersthene andesite breccia.	Overlain by lower Puente strata (Mohnian), underlain by basement complex. Data largely from J.S. Shelton (p.c.).
25.	Morton and Sons	Crew Comm. No.1	30′±	-8,850′±	850′±	No data on attitude of beds	Unknown.	Overlain by lower Mohnian beds; well bottomed in volcanic rocks. Data from Shelton (1955).
26.	Morton and Sons	Irvine No.56-1	No data	No data	No data	----	Unknown. "Igneous" listed at 3,270′.	No data other than confirmation of presence.
27.	Morton and Sons	Rowland Ranch Estate No.3-1	452′	-7,140′± (extr.?) -5,046′± (intr.)	980′± (extr.?) 209′± (intr.)	920′± (extr.?) 198′± (intr.)	Intrusive diabase encountered at 5,498′. Extrusive (?) basalt evidently begins at 7,592′.	Probable Mohnian-Luisian contact at 8,324′; intrusive diabase therefore cuts Mohnian strata. Extrusive rocks are overlain by Luisian strata and underlain by basement complex.
28.	The Ohio Oil Co.	Legrand No.1	1,068′	-1,742′	7,990′±	2,452′±	Dark gray to purplish gray massive andesite, purple to gray andesitic breccia, greenish gray basalt, and similar tuff and tuff-breccia.	Overlain by shale containing Luisian and Relizian (?) Foraminifera, underlain by basement complex.
29.	Richfield Oil Corp.	Edwards No.1	322′	-8,928′	150′	150′	Greenish gray altered diabase (intrusive).	Overlain by probable lower Mohnian beds, underlain by Vaqueros-Sespe undifferentiated.
30.	Richfield Oil Corp.	Mulholland No.1	810′	-3,550′	414′	393′	Dark grey, finely porphyritic basalt, fresh and massive.	Overlain by undifferentiated middle Miocene beds, underlain by strata correlative with lower part of the type Topanga (Relizian).
31.	Seaboard Oil Co.	Well No. 33-23	901′	-5,544′	>580′	>568′	Dark gray porphyritic basalt.	No data on sedimentary rocks stratigraphically close to volcanic strata. Mohnian beds occur at 5,075′.
32.	Seguro Petroleum Co.	Seguro No.1	64′	-6,788′	45′±	42′±	Dark gray massive flows and breccias, andesitic or basaltic in composition.	Overlain by Relizian beds, underlain by some (?). Shales and sandstones above the flows are reportedly tuffaceous, but are not included in the thickness figures at left. Data from Standard Oil Company of California.
33.	Shell Oil Co.,Inc.	Baldwin Hills Comm. No.1	323′	-12,873′	>253′± (aggregate)	>229′± (aggregate)	Medium to medium dark gray, locally bluish gray, amygdaloidal, partly altered basalt or basaltic andesite, locally flow-banded. Rocksin lower part of section are rather coarse grained.	Overlain by undifferentiated upper (?) Miocene strata; well bottomed in volcanic rocks. Schoellhamer and Woodford (1951) and Shelton (1955) list top of volcanic section at 13,351′ (elevation -13,022′).
34.	Shell Oil Co.,Inc.	Bartholomae No. 46-11	1,057′	-333′±	>171′±	No data on attitude of beds.	Grayish black to greenish gray, phanaritic and aphaneritic massive basalt. Locally porphyritic and/or amygdaloidal.	Sedimentary strata in contact with basalt yielded no Foram nifera. Well bottomed in volcanic rocks.
35.	Shell Oil Co.,Inc.	Harbeson	141′	-7,233′	>1,234′ (?)	1,185′± (?)	7,374′-8,603′ "Blue-gray to green-gray tuff" (?). Core 7823-25′ "dark green-gray diabase (?)"	Overlain by upper Miocene beds; well bottomed in volcanic rocks. No ditch samples or cores of this material available for confirmation. All data from company.
36.	Shell Oil Co.,Inc.	Irvine C.F.1	74′	-21′	255′	----	Dark greenish gray gabbroic intrusive rock, reportedly containing olivine in addition to augite.	Gabbro cuts undifferentiated middle Miocene sedimentary rocks. Well was drilled northwest of exposed body of basic rock. No thin sections studied by writer.
37.	Shell Oil Co.,Inc.	Irvine C.F.2	108′	66′	390′	----	Dark grey, partially altered porphyritic intrusive	Cuts undifferentiated middle Miocene sedimentary rocks. Well was drilled northwest of thick sill of basic composition. (See Plate V).
38.	Shell Oil Co.,Inc.	Irvine C.M.8	110′	3,485′	68′	----	Greenish gray, locally fractured intrusive rock of basaltic composition.	Intrudes Holtz shale (Cretaceous), but is probably similar in age to rock encountered in well No. 37 (above).
39.	Shell Oil Co.,Inc.	Irvine Four 51-130	380′	6,484′(?) and 6,700′±	?	----	Dark grey to dark greenish gray altered basalt.	Overlain by Topanga (?) strata, underlain by Paloocene (?) strata. Probably intrusive.
40.	Shell Oil Co.,Inc.	Keeler Comm. No.1	908′	1,000′± (diabase)	Thick sections of interbedded sedimentary rocks.	----	Dark greenish gray, locally altered diabase.	Upper Miocene (chiefly Mohnian) beds to ~-4,150′. Electric logs and fish scales indicate Luisian beds from this point down. Diabase intrudes Mohnian rocks.
41.	Shell Oil Co.,Inc.	Lamb Comm. No.51-6	23′	-6,720′ (?)	Data poor	----	Fragmentary record only. In interval 6,740′-6,832′ recovered 1.5′ of grayish tuff-breccia. From cores 7,627′-7,629′, 7,850′-7,859′ greenish gray "volcanic rock."	Volcanic rocks occur in undifferentiated middle Miocene Topanga strata. Data poor, cores unavailable.
42.	Shell Oil Co.,Inc.	Mathis No.1	156′	-4,759′	>1,029′ (?) No lithologic record for 67′ sec.	>969′ (?) ----	Greenish gray to dark gray, locally amygdaloidal, massive olivine basalt, aphanitic-porphyritic altered.	Overlain by undifferentiated middle (?) Miocene strata; well bottomed in volcanics.
43.	Shell Oil Co.,Inc.	Manchego No.6	780′	-5,070′±50′ (directed well)	No available data. Directed well.	----	Dark greenish gray, altered and brecciated diabase.	Occurs within the Whittier fault zone.
44.	Shell Oil Co.,Inc.	Manchego No.9	82′	No lithologic record to depth of 500′ where diabase was first cored.	No available data. Directed well.	----	Dark greenish gray to greenish gray partially altered diabase.	Intrudes Mohnian strata.
45.	Shell Oil Co.,Inc.	Manchego No.11	689′	No lithologic record to depth of 709′ where diabase was first cored.	323′+	----	Greenish gray, severely altered diabase.	Intrudes Mohnian strata.
46.	Shell Oil Co.,Inc.	Manchego No.12	544′	-460′±80	? Many record gaps	----	Dark greenish gray diabase, fractured and sheared.	Intrudes Mohnian strata.
47.	Shell Oil Co.,Inc.	Puente A-6	---	First cored at depth of 1,123′	----	----	Grayish green, moderately porphyritic, partially altered diabase.	Intrudes undifferentiated middle Miocene strata.
48.	Shell Oil Co.,Inc.	Puente C.M.2	735′	-1,928′	518′	512′	Gray green, coarse grained igneous rock with olivine. (From preliminary core description).	Overlain by Mohnian strata (into which it may be intrusive).
49.	Shell Oil Co.,Inc.	Puente C.M.3	788′	-69′	663′ (aggregate)	650′ (aggregate)	Dark gray (variable to brick red or grayish green), fine grained basalt. Locally porphyritic with phenocrysts of plagioclase and olivine (?), sporadically amygdaloidal. Subordinate interbedded breccia.	Overlain by undifferentiated upper Miocene strata, underlain by basement complex.
50.	Shell Oil Co.,Inc.	Puente C.M.4	684′	-681′	180′ (aggregate)	157′ (aggregate)	Dark grey, relatively fresh, vitrophyric basalt and massive olivine basalt, locally amygdaloidal with amygdules of chlorophaeite. Subordinate beds of breccia interbedded. Core at 1,815-1,827′ is basalt with brick-red angular inclusions of chalcedony(?).	Overlain by Luisian, underlain by ?
51.	Shell Oil Co.,Inc.	Reyes No.135	181′	-10,852′	>1,170′ (aggregate)	>1,040′± (aggregate)	Cores from 11,033-11,475′ consist largely of medium to dark gray amygdaloidal basalt and interbedded breccia and tuff-breccia of similar composition. Cores from 11,475′-12,040′ consist largely of massive altered basalt (?) only. Cores from 12,040′ to T.D. are medium gray to greenish gray rocks of basaltic or andesitic composition.	Overlain by undifferentiated upper Miocene strata, underlain by basement complex. (Schoellhamer and Woodford, 1951).
52.	Shell Oil Co.,Inc.	Rowland A-2	---	---	---	---	Greenish gray, partially altered diabase.	Mohnian rocks overlie diabase, Luisian rocks underlie it. Probably intrusive.
53.	Shell Oil Co.,Inc.	Wright No.73-18	1,299′	-3,407′ -2,501′	828′± (core gaps)	----	Dark gray, olivine diabase with secondary hornblende and minor biotite. Locally porphyritic.	Intrudes undifferentiated middle Miocene strata.
54.	Signal Oil and Gas Co.	Signal-Bolsa 3-1-0	18′	~6,000′(?) (See remarks)	----	----	Fragmental igneous rocks, either "volcanic breccias" or epiclastic "conglomerates" composed of clasts of volcanic rock.	This well under drill at time of compilation. Volcanic section reportedly is stratigraphically equivalent to San Onofre breccia (middle Miocene).
55.	Standard Oil Co. of Calif.	Baldwin-Cienega No.105	363′	-7,732′	1,373′ (aggregate)	1,291′ (aggregate)	Cores from 8,096′-8,245′ are medium bluish gray to medium dark gray hyalo-basalt, partially altered, finely amygdaloidal, with phenocrysts of plagioclase up to 1.5 cm. long. Composition near basaltic andesite. 8,238′-9,660′: sedimentary rocks. 9,660′-9,980′: "light grey porphyritic rocks." 9,980′-10,650′: sedimentary rocks. 10,650′-11,770′: very light gray, partially altered, porphyritic, soda rhyolite. 11,770′-12,070′: sedimentary rocks. 12,070′-12,276′ (T.D.) badly altered porphyritic and non-porphyritic soda rhyolite.	Overlain by undifferentiated middle Miocene strata. Sedimentary rocks intercalated at 11,770′-12,070′ belong to Topanga fm. (undifferentiated middle Miocene). Supervising geologist reported apparent intrusive relationships at 8,096′-8,104′ and 8,235′-8,245′.
56.	Standard Oil Co. of Calif.	Behnke Comm. No.1	270′	-9,440′	256′ (includes some interbedded shale)	222′(-)	"Hard, dense grey" volcanic rocks. (No cores available).	Foraminiferal data lacking at critical horizons. Base of middle Puente fm. at 9,695′. Volcanic rocks underlain by "Temblor" (?) fm.
57.	Standard Oil Co. of Calif.	Emery No.87	190′	-8,334′	>2,325′+ (aggregate)	>791′ (aggregate)	Chips of volcanic rock in ditch sample from 8,530′-8,591′. Cores from 8,591′-9,205′ are olive green to greenish black, altered basaltic tuff and tuff-breccia containing analcite. 9,275′-9,298′: olive gray, altered, amygdaloidal olivine-bearing basaltic-andesite or basalt. Cores from 9,298′-10,290′: interbedded sandstones and dark gray to greenish gray tuff-breccias of olivine basalt, and subordinate thin flows of amygdaloidal basalt. Cores from 10,290′-10,345′: red sandstone and sandy shale. Cores from 10,360′-11,020′ (T.D.): largely non-fragmental greenish gray to light olive, partially altered basalt or basaltic andesite.	Overlain by Mohnian shale. Sido well sample at 9,119′ yielded Luisian Foraminifera. Well bottomed in volcanic rocks; in lower part of section volcanics are interbedded with nonmarine middle Miocene strata.
58.	Standard Oil Co. of Calif.	Emery No.92	433′	-7,777′ (E-log)	1,045+ (side wall samples at 9,880′, 9,965′, and 9,976′ are not included)	930′+	Cores from ~8,210′ to 9,255′: medium gray to medium dark gray basaltic breccia. Fragments are amygdaloidal and sparsely porphyritic. Cores from 9,255′-9,802′: sandstone, shale, and siltstone. Side wall sample at 9,880′: fractured greenish gray basalt. Interval 9,880′-9,965′: "gray siltstone." Side wall sample at 9,965′: "greenish gray basalt." Interval 9,965′-9,976′: siltstone. Side wall sample at 9,976′: "light greenish gray basaltic sand." 9,976′ to T.D.: sedimentary rocks.	Overlain by Mohnian strata, underlain by Luisian strata.
59.	Standard Oil Co. of Calif.	Geman Comm. No.1	183′	-10,036′	61′	56′	"Gray tuff-breccia and breccia" (of basaltic? composition)	In fault contact with middle Puente formation above, underlain by sedimentary rocks of undetermined age. Core descriptions from company.
60.	Standard Oil Co. of Calif.	Irvine No.1	85′	-2,087′	1,011′+ (base not well defined)	778′+	Cores from 2,152′-2,402′ are medium gray to light bluish gray breccias and tuff-breccia of hypersthene-augite andesite. Fragments are relatively fresh and locally porphyritic. Core gap: 2,404′-2,552′. Cores from 2,552′-2,563′: medium gray to dark greenish gray breccia of hornblende-augite andesite, but rest of section is mainly porphyritic hornblende-augite andesite. Cores from 2,563′-2,983′ are medium gray to bluish gray breccias of hornblende-pyroxene andesite and hypersthene-augite andesite that are less coarse grained downward. Cores from 2,983′-3,003′ are largely breccia. Cores from 3,003′-3,163′ are interbedded bluish gray tuff, minor breccia, and "black vesicular basalt" (unavailable).	Overlain by lower Mohnian shale, underlain by arkosic sandstone of undetermined age.
61.	Standard Oil Co. of Calif.	Los Angeles Invest. Co.,No.1	192′	-9,663′	<40′ (aggregate)	No data on attitude of beds	Medium gray to bluish gray finely porphyritic basalt or andesite.	Overlain by Mohnian strata, underlain by sedimentary strata of undetermined age.
62.	Standard Oil Co. of Calif.	Lomita Land and Water No.3-1	18′	-10,612′	60′-200′ (part of record based on driller's log only)	46′-180′	Cores from 10,683′-10,718′ are medium gray tuff-breccia of hypersthene-augite andesite, with accidental schist fragments. Cores from 10,838′-10,847′ are light bluish gray to medium gray andesitic breccia with accidental chlorite	Overlain by Mohnian shale, underlain by shale of undetermined age.
63.	Standard Oil Co. of Calif.	Murphy Coyote No.129	513′	-8,617′	52′	48′	Dark greenish gray, metamorphosed, partially altered.	Overlain by Luisian strata of undetermined age.
64.	Standard Oil Co. of Calif.	Plavan No.1	39′	-3,947′	>99′	>97′	Bluish gray to medium dark gray flows of partially altered porphyritic andesite.	Overlain by lower Pliocene strata; well bottomed in volcanic rocks.
65.	Standard Oil Co. of Calif.	Stanley Comm. No.1	109′	-8,031′	>422′ (aggregate)	>422′ (aggregate) dips 50°	Upper part of section includes gray and greenish gray "tuff" and dark gray porphyritic basalt; lower part consists mainly of dark gray porphyritic olivine basalt or olivine-bearing basaltic andesite.	Overlain by Mohnian shale; well bottomed in volcanic rocks.
66.	Standard Oil Co. of Calif.	Stern Comm. No.1-1	309′	-10,624′	223′	178′	Upper part of section consists of greenish gray and purplish gray breccias of amygdaloidal andesite, locally porphyritic. Lower part reportedly consists of gray tuff, but is not included in thickness figures.	Overlain by Mohnian(?) shale, underlain by rocks designated "Mohnian and/or Luisian."
67.	Standard Oil Co. of Calif.	Taft Comm. No.1-1	242′	-2,764′	>89′	>81′	Cores from 3,006′-3,030′ are medium dark gray, porphyritic olivine-bearing basaltic andesite, locally porphyritic, amygdaloidal, and/or flow-banded. Cores from 3,006′-3,005′ are dark gray to medium olive gray basaltic breccia and micro-pumiceous tuff.	Overlain by lower Mohnian brown shale, interbedded with shale of identical lithology but lacking calcareous foraminifera; well bottomed in volcanic rocks.
68.	Standard Oil Co. of Calif.	Tustin Comm. No.1	271′	-2,066′±	>43′	39′+	Core sampling poor. Reportedly "blue gray vesicular volcanic-appearing rocks," no data fragmental.	Overlain by middle Mohnian strata; well bottomed in volcanic rocks. Core descriptions from company.
69.	Standard Oil Co. of Calif.	Vickers No.1-36	420′	-7,925′	52′+ (includes interbedded sediments)	46′+	Light gray, <u>severely altered</u> and brecciated porphyritic rock of basaltic or andesitic lineage (relic olivine? present).	Intimately mixed with Luisian (?) sandstone. Supervising geologist reported apparent intrusive relationships.
70.	Standard Oil Co. of Calif.	Woo No.1	896′	-7,799′	125′(?)	120′± (variable attitudes)	Dark gray to grayish black, massive, amygdaloidal basalt, basaltic breccia, and apparent basaltic conglomerate. Relic olivine suggested by outlines of chlorophaeite.	Overlain by Mohnian strata, underlain by undifferentiated middle (?) Miocene sandstone (Topanga).
71.	Standard Oil Co. of Calif.	Woodward Comm. No.1	245′	-10,979′	231′ (aggregate)	226′ (aggregate)	Breccia of light bluish gray, severely altered basalt (?) fragments in a dark greenish gray chlorophaeitic matrix. Compositional identity based on presence of idiomorphic microphenocrysts only - rest of fragments replaced by carbonate sinensis(s), clays, and fine grained silica (?).	Overlain by Mohnian strata, underlain by rocks tentatively assigned to the Luisian stage.
72.	Standard Oil Co. of Calif.	Zaiser-Brelje No.1	210′	-4,188′	52′+ (does not include thin unit encountered at 4,748′)	51′+	Dark greenish gray, partially altered, medium to coarse grained basalt.	According to Shelton (1955): "overlain by upper or middle Miocene." Mud and green sandstones and shales interbedded with lower part of volcanic section are suggestive of non-marine facies of Topanga fm.
73.	Superior Oil Co.-Continental Oil Co.	Garden Grove Unit I-1	128′	-7,047′	306′+ (base poorly defined)	303′±	Bluish gray porphyritic, amygdaloidal, massive basalt or andesite. Tuffaceous rocks reportedly occur in lower part of section.	Unconformably overlain by lower Pliocene strata; well possibly bottomed in volcanic rocks.
74.	The Texas Co.	Buena Park Unit No.1-1	91′	-8,775′	>175′	>175′	Badly altered olive gray basaltic tuff-breccia and micro-pumiceous basaltic tuff with analcite.	Overlain by lower Pliocene strata; well bottomed in volcanic rocks.
75.	The Texas Co.	Covina C.H.S-1	645′	-1,205′	>135′	>135′	No data.	No data regarding age of strata overlying volcanic rocks released; well bottomed in volcanic rocks.
76.	The Texas Co.	Covina C.H.13	649′	-370′	>50′+ (some cores from higher in section contain volcanic rocks but they are not included in this figure.)	>48′+	Partially altered olive gray "calcic andesite" of Shelton (1955).	No data available on age of strata overlying volcanic rocks; well bottomed in volcanic rocks.
77.	The Texas Co.	Covina 27-1	677′	-461′	3,916′±	3,838′±	Includes thick section of Shelton's "Glendora volcanics": basaltic and andesitic flows, tuff-breccias, and tuffs. See Shelton (1955, p. 53).	Overlain by Luisian strata, underlain by basement complex (?).
78.	The Texas Co.	Garnier No.1	1,138′	-1,902′	3,740′	3,180′	Glendora volcanic rocks: flows and pyroclastic strata of augite andesite, basaltic andesite, and "hornblende andesite" (basalite). See Shelton (1955, p. 66).	Reportedly overlain by Luisian and Relizian (?) strata; underlain by basement complex.
79.	The Texas Co.	McGinnis	323′	-7,202′	>64′	>52′	Olive gray to purplish gray, porphyritic basaltic andesite.	Overlain by Mohnian strata; well bottomed in volcanic rocks.
80.	The Texas Co.	Puente Ona-1	322′	-5,518′	>1,331′	>1,211′	Scattered olde wall samples consist of severely altered, olive gray basalt (?).	Overlain by Mohnian strata; well bottomed in volcanic rocks.
81.	The Texas Co.	Puente No.9-1	339′	-5,636′	>291′+	>253′+	Medium gray to greenish gray andesitic or basaltic breccia (calcite cemented).	Medium gray to greenish gray andesitic or basaltic breccia (calcite cemented).
82.	The Texas Co.	Ragan No.1	381′	143′	507′	487′	Similar in lithology to El Modano volcanic rocks nearby.	Sedimentary strata did not yield diagnostic foraminifera.
83.	Tidewater Associated Oil Co.	J. W. Martin No.1	45′	-6,390′±	>123′	(No data on attitude)	No data, no cores available.	Overlain by Mohnian strata; well bottomed in volcanic rocks.
84.	Tidewater Associated Oil Co.	Nel-Cal-La No.1	122′±	-7,577′	183′±	172′±	Olive gray "fragmental volcanic rocks."	Unconformably overlain by lower Pliocene strata, underlain by Relizian strata.
85.	Tidewater Associated Oil Co.	Olive-Orange No.1	170′	-4,196′	>143′±	(No data on attitudes)	No data, no cores available.	According to company, overlain by Topanga strata; possibly the La Vida member of the Puente fm. (according to others); well bottomed in volcanic rocks.
86.	Tidewater Associated Oil Co. -Standard Oil Co. of Calif.	Turley No.1	52′	-7,098′ or -7,118′ (ditch samples only)	38′+ (aggregate)	37′+ (aggregate)	Dark grey "altered porphyritic andesite" with pyroclastic rocks near base.	Overlain by Mohnian strata; age of shale at base of section unknown. Core description from W.F.Yerkes (p.c.).
87.	Trustee's Development Assoc.	Muleter No.1	125′	"1,925′" (see remarks)	"35′" (see remarks)	----	Dark greenish gray to olive gray, severely altered coarse grained igneous rock.	Overlain and underlain by Topanga (undifferentiated middle Miocene) strata. Figures from W.F.Yerkes (p.c.), core description from Standard Oil Co. of California.
88.	Union Oil Co. of Calif.	Callander No. 79	82′	-11,257′	447′ (aggregate)	416′+ (aggregate)	Gray to bluish gray basaltic tuff and tuff-breccia. Fragments are amygdaloidal and medium grained.	Overlain by Mohnian shale; underlain by basement complex. Brown shales interbedded in lower part of volcanic section have been correlated with shale in a similar stratigraphic position in well No. 91.
89.	Union Oil Co. of Calif.	Chapman No.29	293′ (?)	-7,822′(?) (top poorly defined)	138′(?)	128′(?)	Medium gray to dark greenish gray, partially altered olivine?-bearing basalt-basaltic andesite, massive and slightly amygdaloidal.	Overlain by lower Mohnian shale, underlain by Luisian strata.
90.	Union Oil Co. of Calif.	Gaines No.1	851′	-2,534′± (no description of ditch samples)	~310′(?)	----	Gray, medium grained dioritic rock (intrusive).	Figures for depths and elevations are questionable, for only cored intervals were described and many core gaps are present.
				-5,049′± (no description of ditch samples)	~70′+ (aggregate gaps; many core gaps)	~70′+ (aggregate)		
91.	Union Oil Co.	Heilman No.58	103′	-10,757′ (?) (aggregate) lists top at 10,860′, from 10,848′-10,860′ is volcanic rock)	278′+ (aggregate, variable)	271′+ (aggregate, variable)	Dark, greenish gray, medium bluish gray, and mod-tuff, and tuff-breccia.	Overlain by Mohnian strata. Shale interbedded at contains "division L" (lower Mohnian) Foraminifera.
92.	Union Oil Co. of Calif.	Olive Comm. No.4-1	210′	-3,870′	24′	21′	"Tuffaceous shale and sandstone."	Reportedly interbedded with Mohnian sedimentary rocks.
93.	Union Oil Co. of Calif.	Puente Farms-1	1060′	-5,040′± ----------poor data----------	~500′± (?)	~130′+ (?)	Medium dark gray, severely altered, amygdaloidal basalt or andesite.	Overlain by Mohnian strata, underlain by brown shale of undetermined age.
94.	Union Oil Co. of Calif.	Rimpau No.1	880′	-1,479′	~1,425′	----	Medium grained, partially altered augite diorite with secondary biotite.	Intrusive, but age of invaded strata unknown. Correlative with rest of Whittier diabase.

Footnote

> symbol indicates that well bottomed in volcanic or intrusive rocks

"aggregate" indicates that the thickness of several layers of volcanic rock or sedimentary strata have been added together; the thickness of the sedimentary strata has been omitted .

* depth from top of well, not elevation

PLATE VI : WELL DATA PERTAINING TO THE MIOCENE VOLCANIC ROCKS IN THE LOS ANGELES BASIN, CALIFORNIA.