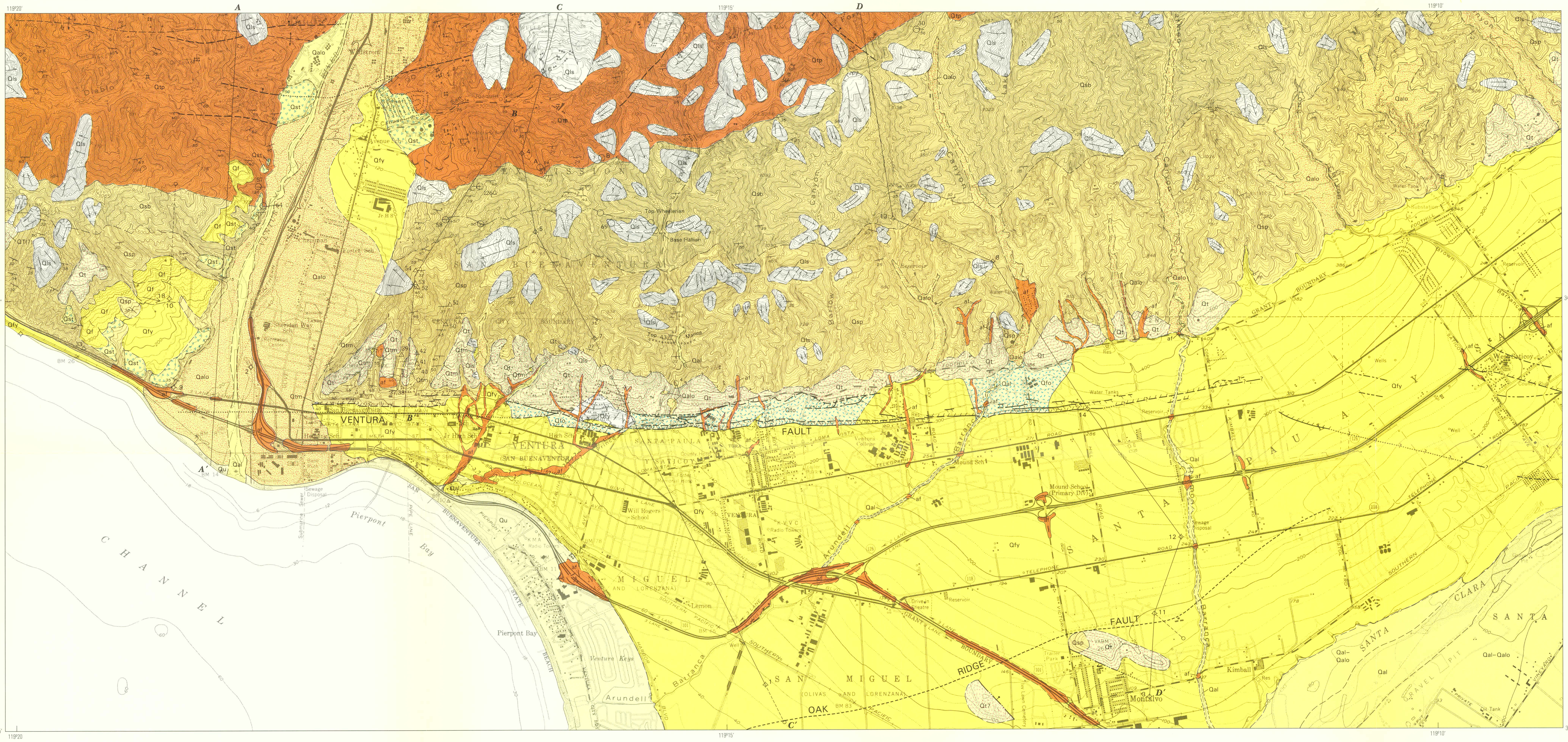
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

PROFESSIONAL PAPER 1339
PLATE 11.1



Base from U.S. Geological Survey, 1:24,000, Saticoy, Ventura, 1951; photorevised, 1967.

TRUE NORTH
MAGNETIC NORTH
14½°
APPROXIMATE MEAN DECLINATION, 1987

SCALE 1:24 000
1 ½ 0 1 MILE
1 .5 0 1 KILOMETER
CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

AREA OF MAP

Geology compiled from Sarna-Wojcicki and others (1976) and Weber and others (1973), modified by field studies and photointerpretation

CORRELATION OF MAP UNITS

SURFICIAL DEPOSITS — BEDROCK (After Weber and others, 1973)

- af; Qu, Qal — Holocene — QUATERNARY
- Qfy, Qls, Qf, Qalo — Holocene and (or) Pleistocene
- *Unconformity*
- Qt, Qst, Qfo
- *Unconformity*
- Qtm
- Qsp; *Unconformity(?)*; Qsb — Pleistocene
- QTp (QTpm*, QTpl*) — Pleistocene and Pliocene — QUATERNARY AND TERTIARY
- Tsm* — Miocene — TERTIARY

*Subsurface only

af — ARTIFICIAL FILL (HOLOCENE)—Locally includes small areas of cut. Old, loose fill over drainages in east Ventura locally causes differential compaction and settlement; pattern of filled drainages on young alluvial fan deposits 2¼ km east of Ventura River from Cousineau and Martin (1975)

Qu — SAND DEPOSITS, UNDIFFERENTIATED (HOLOCENE)—Chiefly well-sorted unconsolidated medium to coarse sand along shore. Locally includes undifferentiated artificial fill, alluvium, dune sand, and young alluvial fan deposits

Qal — ALLUVIUM (HOLOCENE)—Gravel, sand, and silt, unconsolidated and unstratified, in active stream channels; locally includes young alluvial fan deposits (Qfy)

Qfy — YOUNG ALLUVIAL FAN DEPOSITS (HOLOCENE AND (OR) PLEISTOCENE)—Silty clay, silt, silty sand, and gravel; unconsolidated and unsorted, at mouths of streams, commonly coalesced to form extensive aprons along base of hills; cut by Ventura fault; locally includes alluvium (Qal), sand deposits, undifferentiated (Qu), and older alluvium (Qalo)

Qls — LANDSLIDE DEPOSITS (HOLOCENE AND (OR) PLEISTOCENE)—Disrupted and detached masses of sedimentary rock, colluvium, or soil with organic debris. Masses are rotated, jumbled, or brecciated

Qf — FAN DEPOSITS, UNDIFFERENTIATED (HOLOCENE AND (OR) PLEISTOCENE)—Silty clay, silt, silty sand, and gravel; unconsolidated and unsorted; coextensive with both young and old alluvial fan deposits (Qfy, Qfo)

Qalo — OLDER ALLUVIUM (HOLOCENE AND (OR) PLEISTOCENE)—Gravel, sand, and silt; unconsolidated to poorly consolidated, unsorted and unstratified; underlies flood plains of present-day streams and rivers; grades laterally into young alluvial fan deposits (Qfy)

Qt — TERRACE DEPOSITS (HOLOCENE AND (OR) PLEISTOCENE)—Nonmarine boulder to pebble gravel, sand, and silt; poorly to moderately stratified, unconsolidated to moderately consolidated; uplifted, faulted, and dissected along south margin of hills; locally includes colluvium; thickness as much as 30 m; grades laterally into stream terrace deposits (Qst)

Qst — STREAM TERRACE DEPOSITS (HOLOCENE AND (OR) PLEISTOCENE)—Gravel, sand, and silt; poorly to moderately stratified, moderately to well consolidated; present along flanks of Ventura River valley; commonly dissected; grades laterally into old alluvial fan deposits (Qfo)

Qfo — OLD ALLUVIAL FAN DEPOSITS (HOLOCENE AND (OR) PLEISTOCENE)—Gravel, sand, and silt; unsorted, unconsolidated to poorly consolidated; deposits underlie uplifted, faulted, and dissected bench north of Ventura fault

Qtm — MARINE TERRACE DEPOSITS (PLEISTOCENE)—Silty to pebbly sand, well-rounded cobble-boulder conglomerate at base; moderately sorted, loose to poorly consolidated, poorly stratified; locally with well-preserved fossil mollusks; thickness as great as 4 m, but commonly about 1 m. Amino acid racemization age estimate: 80,000 ± 10,000 yr B.P.

BEDROCK

(Stratigraphic nomenclature after Weber and others, 1973, except for subsurface units)

Qsp — SAN PEDRO FORMATION (LATE PLEISTOCENE)—Silty to pebbly sandstone, minor siltstone; poorly to moderately stratified, slightly to moderately consolidated; locally with fossil mollusks and abundant shell fragments; upper part nonmarine near and east of Hall Canyon; maximum exposed thickness about 1200 m. Age estimates: 205 ± 25 x 10^3 yr B.P. for upper part (amino acid racemization); 620 x 10^3 yr B.P. for lower part (ash bed)

Qsb — SANTA BARBARA FORMATION (LATE AND EARLY PLEISTOCENE)—Lamellar clay shale (in part equivalent to "upper Pico" of local usage; subsurface only), mudstone, and siltstone, numerous lenses of sandstone and pebble conglomerate and at least three mapped ash beds; poorly to moderately indurated; west of Ventura River a thin pebble conglomerate, locally tar stained, is present at base; maximum exposed thickness about 1200 m. Radiometric ages of interbedded ashes: approximately 1 m.y. B.P. for basal ash; 0.7 ± 0.4 m.y. B.P. for middle ash. Lower part of unit equivalent to "upper Pico" of local usage

QTp — PICO FORMATION, UNDIVIDED (EARLY PLEISTOCENE AND LATE PLIOCENE)—Interbedded siltstone, sandstone, shale, mudstone, pebble conglomerate, and one mapped ash bed near top; generally poorly to moderately indurated, massive, but locally laminated or thin bedded; locally contains foraminifers and small mollusks; locally petroliferous; maximum exposed thickness about 1000 m. Radiometric age of ash near upper contact: 1.2 ± 0.2 m.y. B.P. Equivalent to "middle Pico" of local usage.

QTpm — "MIDDLE PICO" OF LOCAL USAGE (UPPER PART OF PICO FORMATION)—Silty, clay and siltstone; occurs in subsurface only. Characterized by foraminiferal fauna referred to the Wheelerian Stage of Natland (1953).

QTpl — "LOWER PICO" OF LOCAL USAGE (LOWER PART OF PICO FORMATION)—Interbedded sandstone, claystone, pebbly sandstone; occurs in subsurface only. Characterized by foraminiferal fauna referred to the Venturian Stage of Natland (1953).

Tsm — SANTA MARGARITA FORMATION (LATE MIOCENE)—Occurs in subsurface only. Mudstone, shale, siltstone, locally with fine- to medium-grained sandstone interbeds; massive to laminated, moderately indurated, locally petroliferous

CONTACT—Long dashed where approximately located; short dashed where inferred; queried where uncertain

FAULT—Long dashed where approximately located; short dashed where inferred; dotted where concealed; queried where uncertain. Ball and bar on downthrown side. Arrows show relative displacement

FAULT SCARP—Dotted where concealed; queried where doubtful. Hachures on face (Crest, Base)

ANTICLINE—Approximately located; dotted where concealed

STRIKE AND DIP OF BEDS (47)

APPARENT DIP OF BEDS (18)

FACIES BOUNDARY—Marine to nonmarine

SURFACE EXPRESSION OF INFERRED BURIES SHORELINE ANGLE—Queried where doubtful

ASH BED AND SAMPLE LOCALITY—Number refers to table 1 (57)

PHOTOLINEATION

LANDSLIDE—Hachures indicate fresh scar. Arrows indicate direction of movement

EXPLORATION WELL—Number refers to table; circle shows bottom location (9)

LOCALITY OF MOLLUSK COLLECTION—Number refers to table 2 in text (33)

A—A' LINE OF CROSS SECTION

A-37 STRATIGRAPHIC POSITION AND NUMBER OF MOLLUSK COLLECTION—See table 2 in text. Cross section only

T-58 STRATIGRAPHIC POSITION AND NUMBER OF ASH SAMPLE—See table 1 in text. Cross section only

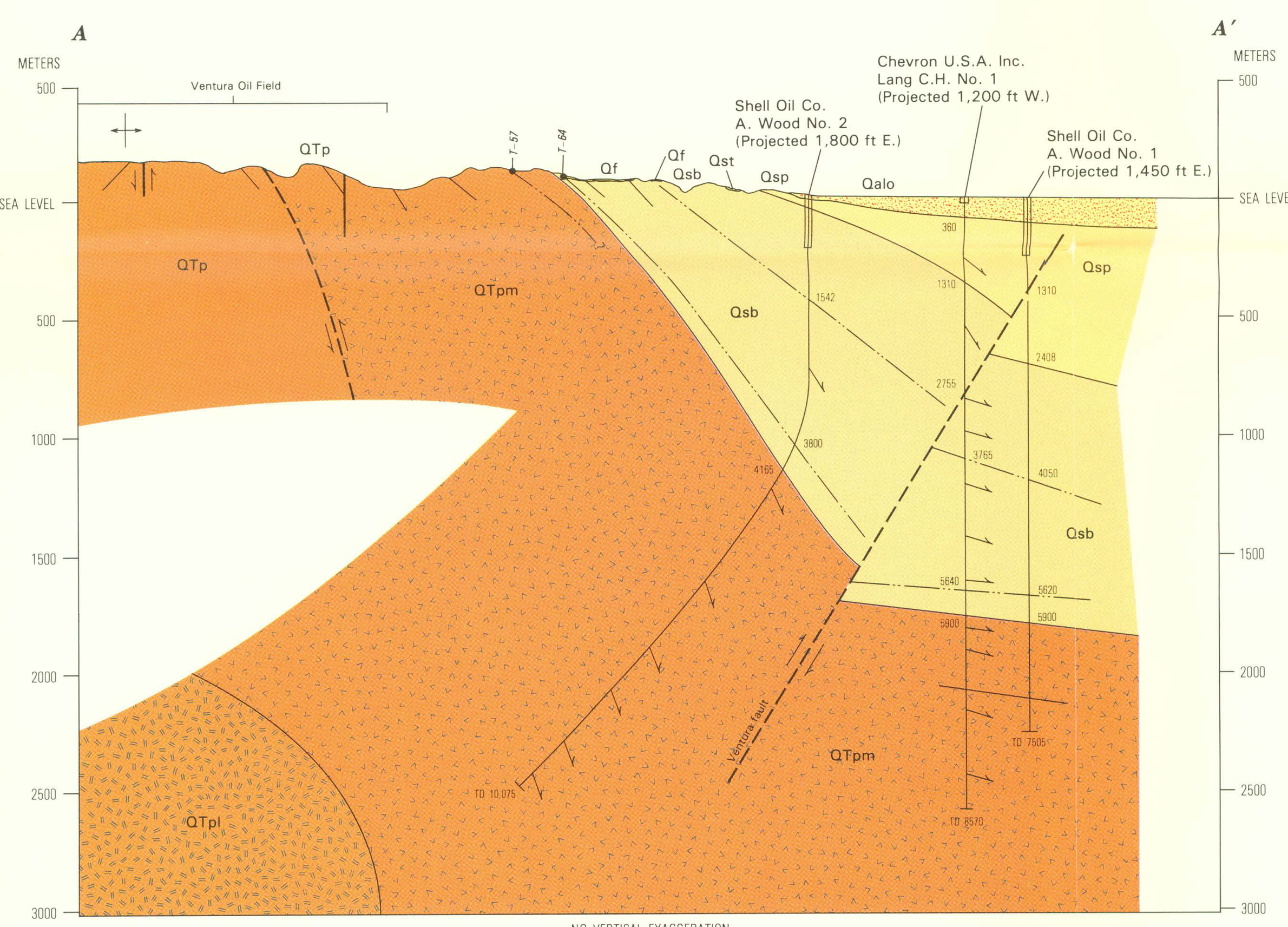
EXPLORATORY WELL—Cross section only
Surface casing
1542 Drilled depth (ft) to contact or fault
Apparent dip from dipmeter survey
10,258 Total depth, in feet

Data on exploratory wells

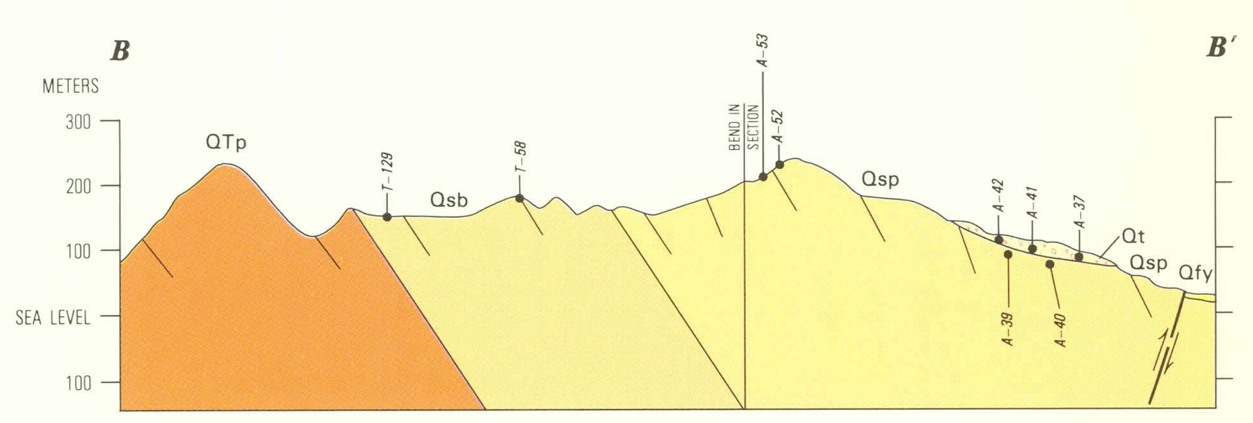
Map No.	Operator	Name	Location Sec., T.(N), R.(W)	Year begun[1]	Elevation (ft)	Total depth (ft)	Remarks	Data[2]
1	Chevron USA Inc.	Humble-Maxwell No. 1, RD No. 1	13 2 23	1957	65	10,209	Directed hole; see section C-C'	EL
2	Do.	Lang C.H. No. 1	5 2 23	1964	34	8,572	Ventura fault at 3485; see section A-A'	CD, El
3	Do.	Thorpe No. 1	17 2 22	1949	135	9,806	See section D-D'	EL
4	Getty Oil Co.	Lloyd No. 2	27 3 23	(?)	521	3,372	See section C-C'	EL
5	Do.	Lloyd No. 4	34 3 23	1952	1,125	4,983	See section C-C'	EL
6	Do.	Lloyd No. 111	27 3 23	(1937)	508	10,258	See section C-C'	EL
7	Do.	V.L. & W. C.H. No. 5, RD No. 1	2 2 23	1964	640	14,003	Directed hole; Ventura fault at 5085; see section C-C'	CD, DM, DS, EL
8	Seaboard Oil & Gas Co.	Sexton No. 1	31 3 22	1958	580	9,360	See section D-D'	DS, EL
9	Shell Oil Co.	A. Wood No. 1, Orig. hole	5 2 23	1964	52	7,505	See section A-A'	CD, EL
10	Do.	A. Wood No. 2	32 3 23	1965	262	10,075	Directed hole; see section A-A'	CD, EL
11	Shell-Superior	Scholle No. 1	16 2 22	1957	209	10,490	Directed hole; see section D-D'	CD, EL
12	Superior Oil Co.	Limoneira No. 1	9 2 22	1949	261	18,734	See section D-D'	CD, EL
13	Ventura Exploration Co.	Sexton No 1	31 3 22	1936	620	9,530	See section D-D'	EL
14	Wainoco Inc.	Limoneira No. 1	5 2 22	1974	317	12,205	Directed hole; see section D-D'	DM, EL

[1]Year completed in parentheses.

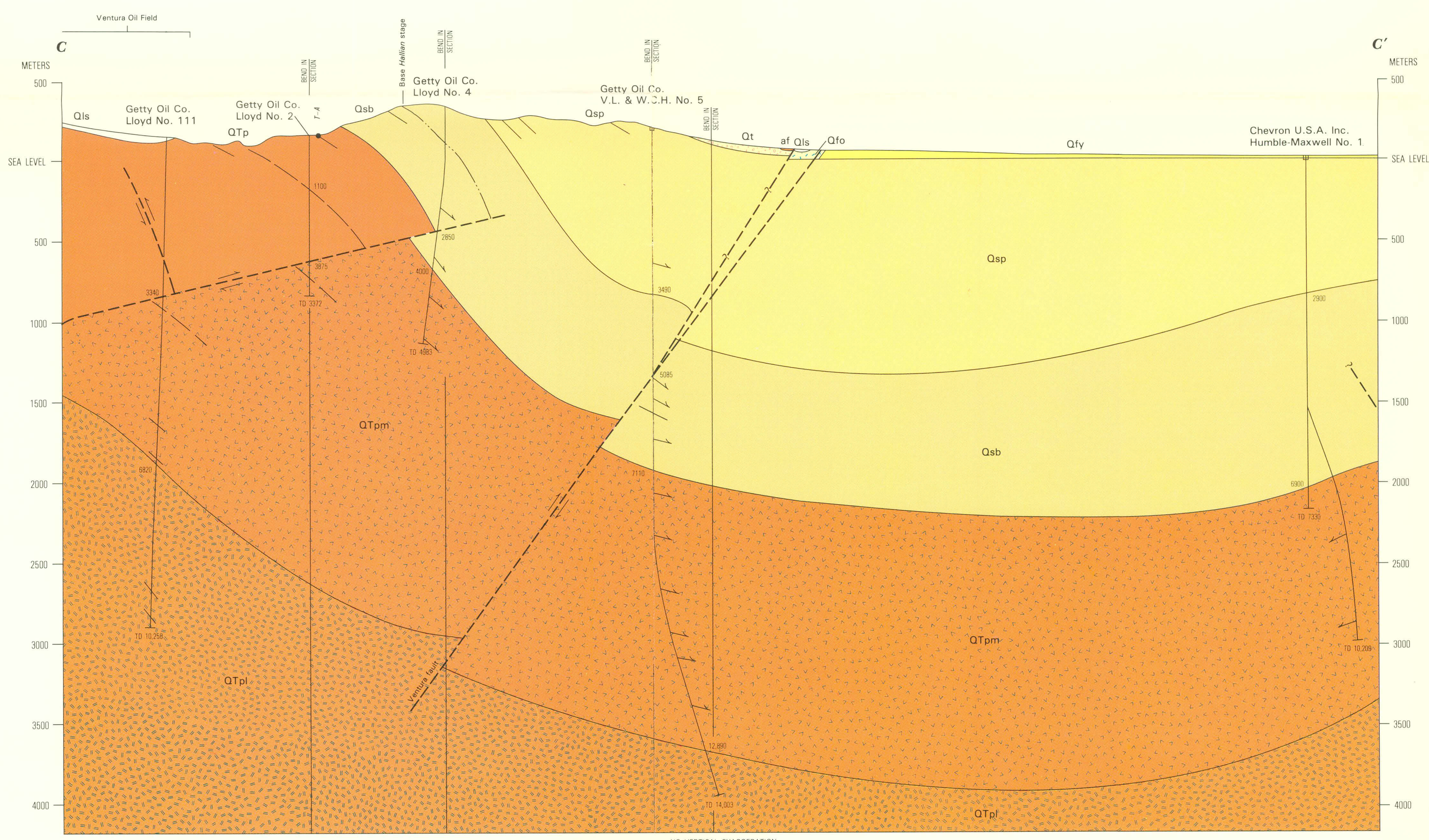
[2]CD-Core description
DM-Dip meter
DS-Directional survey
EL- Electric log ; induction-resistivity



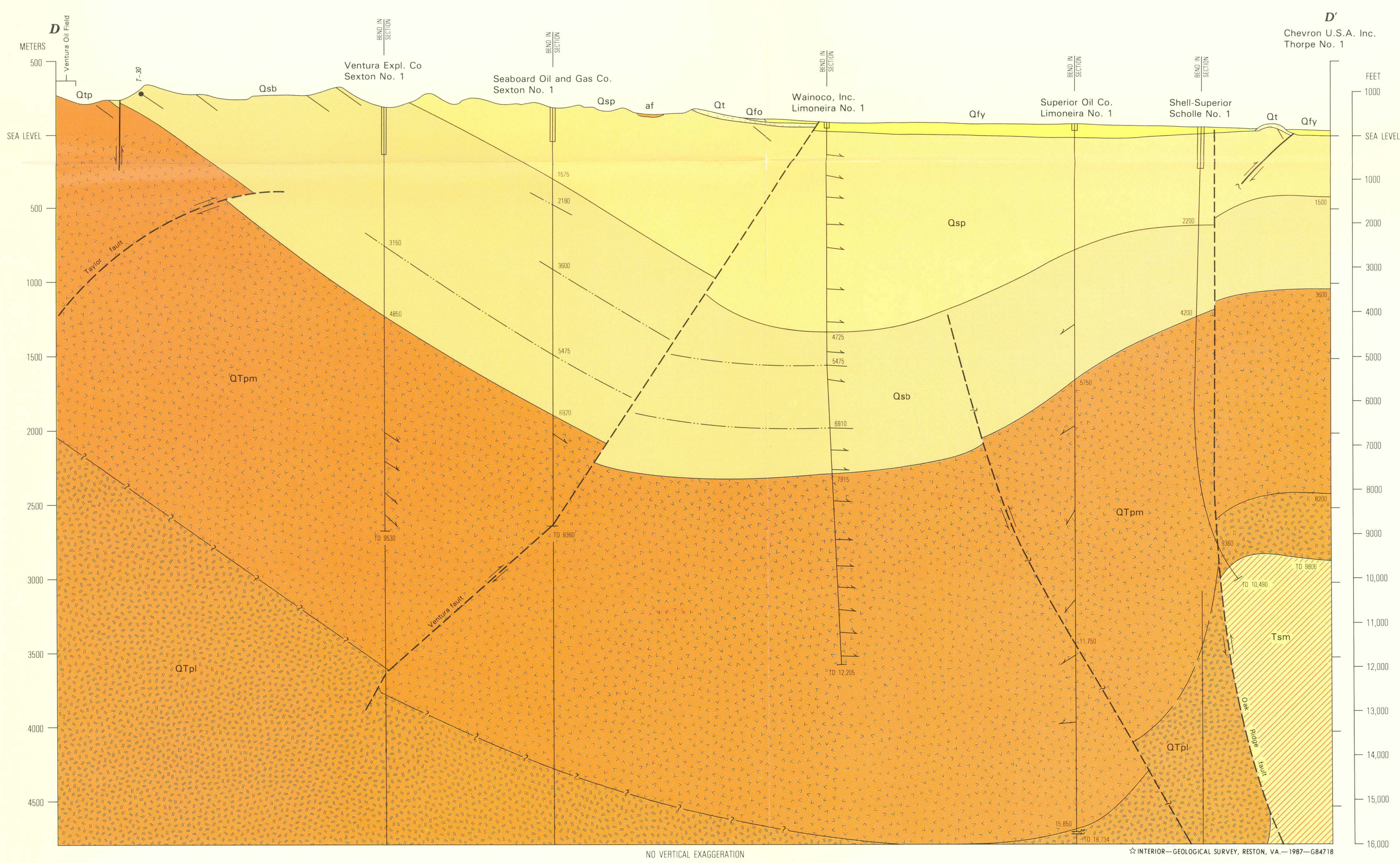
NO VERTICAL EXAGGERATION



VERTICAL EXAGGERATION X2



NO VERTICAL EXAGGERATION



NO VERTICAL EXAGGERATION

☆INTERIOR—GEOLOGICAL SURVEY, RESTON, VA.—1987—G84718

GEOLOGIC MAP OF THE VENTURA AREA, VENTURA COUNTY, CALIFORNIA