

SOUTHERN SAN JOAQUIN BASIN GEOLOGICAL DATABASE (SSJGD)

***Offered for Multi-client Participation, by:
QUANTSTRAT CALIFORNIA, LLC***

Summary

This project was initiated to elucidate the detailed stratigraphy of various deeper potential reservoirs (primarily Middle Miocene “Temblor” through Upper Cretaceous strata) for the western half of the southern San Joaquin basin. This was accomplished by first developing a dependable regional stratigraphic framework that was extensively micropaleo- and seismic-tied during early phases of the work. Past regional stratigraphic work in the basin for more than twenty clients over a period of 27 years, which included the construction of approximately 40 regional cross sections, provided QuantStrat the unique perspective and invaluable experience required to complete this work.

Deliverables

Digital well header and correlated tops files for over 500 key deep tests from the western half of the southern San Joaquin basin, California (T. 24-32 S., MDB&M & T. 11-12 N., SBB&M). The database includes many key Middle Miocene or older penetrations outside administrative field boundaries, and virtually all key deep tests within fields producing from younger strata. In fields/areas producing primarily from Middle Miocene or older rocks, a representative sampling of wells (typically two or more per section) has been included.

The well header database is keyed to API number and includes 40 separate data fields (see page 4). Unique header and tops files are provided for each known sidetrack, redrill or deepening of a given well. In addition, we strive to include at least partial well headers and accurate spot locations for many important, but still confidential, deep exploratory tests recently permitted, drilled or drilling within the project area.

The tops database structure was developed by correlation to numerous regional cross section lines, and through several iterations of loop-tying through the log data. The resultant tops framework supports 138 picks, spanning the entire stratigraphic interval from Top Miocene to Basement (see page 5). Because the project area includes no fewer than four nomenclatural provinces, much local terminology has been maintained, which can then be equivalenced to other included tops to allow for continuous mapping between sub-areas.

Format

One (1) digital version of the header and tops database will be provided to each subscriber. The digital database is offered in either fixed-length or delimited ASCII format. In order to simplify the data import process, a control file will be provided free-of-charge to all Landmark (LMKR) GeoGraphix users.

Pricing

The current price for the well header and correlated tops database is **\$27,000.**, which is payable in full upon subscription. Offers to license the database incrementally by area/well, or to license only specific parts of the database (i.e., header or tops data only), will be considered on an individual basis.

Discounts

In the past, discounts were offered to some initial subscribers for providing, or making available, certain data types to the project (e.g., hard copy well files, micropaleo data, seismic, etc.). Because the majority of the correlation and tops work has been completed, these discounts are generally no longer available, but could still be granted in some cases, so please inquire if interested. Alternatively, companies can realize a significant savings by purchasing a license simultaneously with one or more joint venture partners or affiliates, as detailed below:

Initial License (Subscribing Company).....	\$27,000
Second License (JV Partner/Affiliate #1).....	\$21,500
Third License (JV Partner/Affiliate #2).....	\$17,500

In this scenario, the average price of \$22,000 will be billed individually and a full, unrestricted license will be granted to all companies. The initial subscribing company may be requested to provide QuantStrat with some contractual documentation regarding the affiliation or partnership in order to qualify for this discount.

Miscellaneous

- The interpretations and data provided as part of this project represent the culmination of 28 years of exclusive work in the San Joaquin basin by one experienced stratigrapher/petroleum geologist and one exceptional geotechnical assistant. This project was not completed “by committee,” whereby it is commonly difficult to maintain internal consistency and meld differing viewpoints into a cohesive interpretation.
- There currently are 13 full or partial subscribers to the project.

- *The header and tops databases will be maintained/expanded (including new deep tests) and quarterly updates made available to existing subscribers for a very reasonable annual fee.*
- *During header data extraction, various supplemental data sets have been compiled for each borehole. These additional data sets have not yet been computerized, but may be made available to subscribers if there is sufficient interest. Details and pricing for the supplemental data sets will be made available at a later date, at which time current SSJGD subscribers will be offered substantial discounts.*
- *Because QuantStrat has provided contractual well spotting services for various clients in the past, partial well headers and accurate spot locations are also available for several shallower Plio-Pleistocene gas fields of the southern San Joaquin basin. If interested, please inquire about specific availability and pricing.*

For more information or to discuss subscription, please contact J. Scott Lewis (QuantStrat California, LLC) at 303-766-9677, or by e-mail at jslewis@quantstrat.com

SSJGD Well Header Database Content

DATABASE SUMMARY FORM		
File Status _____	Date _____ / _____	Log Acquired (Y/N/U) _____
Well Status _____	Dir (Y/N/U) _____	Entered/QCd _____
1) API No. _____		16) Date Abandoned _____
2) Operator _____		17) Well Status/Code _____ / _____
3) Well Name/No. _____ / _____		18) Well Reworked? _____
4) Township _____		19) TD _____ TVD (Direc.) _____
5) Range _____		20) Series & Formation at TD _____
6) Section _____		21) Logged? _____ (if Y, LOGINFO)
7) Loc. Reference _____		22) Casing Set? _____ (if Y, CSGINFO)
8) Footage Loc. _____		23) Cores Taken? _____ (if Y, COREINFO)
9) Original Hole? _____		24) Core Shows? _____
10) Direc. Well? _____ BHL _____		25) SWC's Taken? _____ (if Y, SWCINFO)
11) Ground Elev. _____		26) SWC Shows? _____
12) Datum Descr./Elev. _____ / _____		27) DST's Made? _____ (if Y, DSTINFO)
13) Date Comm. Drilling _____		28) DST Shows? _____
14) Date Comp. Drilling _____		29) Well Productive? _____ (if Y, PRODINFO)
15) Date Comm. Producing _____		30) Comments _____
XCOORD _____	YCOORD _____	_____

SSJGD Correlated Tops Database Content

API No. _____ Datum/Elev. _____ / _____ Series/Fm. @ TD _____

Operator _____ Well Desig. _____ Loc. _____

GEOLOGIC TOPS

1) TOP MIOCENE UNDIFF. _____	70) Top Agua Sand _____
2) MIOCENE SANTA MARGARITA FM. (E) _____	71) Base Agua Sand _____
3) MIOCENE REEF RIDGE FM. _____	72) OLIG./MIO. VEDDER FM. (E) _____
4) Top Olig Sand _____	73) OLIG. WALKER FM. (E) _____
5) Base Olig Sand _____	74) Top Middle Santos Shale _____
6) Top Potter Sand _____	75) Top 1st Phacoides Transgr. Sand _____
7) Base Potter Sand _____	76) Base 1st Phacoides Transgr. Sand _____
8) Top Reef Ridge Shale _____	77) Base Middle Santos Unconformity _____
9) Top Reef Ridge Sand Undiff. _____	78) OLIG. TEBLOR FM. "VAQUEROS" _____
10) Base Reef Ridge Sand Undiff. _____	79) Top Lower Santos Shale _____
11) MIOCENE MONTEREY FM. _____	80) Top Upper Vedder Sand (E) _____
12) Top Upper Antelope Shale _____	81) Base Upper Vedder Sand (E) _____
13) Top Lower Antelope Shale (Chert) _____	82) Top 2nd Phacoides Transgr. Sand _____
14) Top Upper Fruitvale Shale (E) _____	83) Base 2nd Phacoides Transgr. Sand _____
15) "N" Point _____	84) Base Lower Santos Shale _____
16) Top Stevens Sand Undiff. _____	85) Base Lower Santos Unconformity _____
17) Top Upper Stevens Sand _____	86) Top Lower Vedder Sand (E) _____
18) Base Upper Stevens Sand _____	87) Top Wygal Sand Undiff. _____
19) Top Lower Stevens Sand _____	88) Top Bloemer Sand _____
20) Base Lower Stevens Sand _____	89) Intermediate Shale _____
21) Base Stevens Sand Undiff. _____	90) Belridge 64 Sand _____
22) Base Lower Antelope Shale (Chert) _____	91) Base Wygal Sand Undiff. _____
23) Top McDonald Shale _____	92) Base Lower Vedder Sand (E) _____
24) Top Lower Fruitvale Shale (E) _____	93) Top Upper Cymric Shale _____
25) Top Pulv Sand _____	94) Top Gibson Sand _____
26) Base Pulv Sand _____	95) Base Gibson Sand _____
27) Base McDonald Shale _____	96) Base Olig. Temblor Sand Undiff. _____
28) Top Devilwater Silt _____	97) Top Lower Cymric Shale _____
29) Top Packwood Sand _____	98) Top Vedder Silt (E) _____
30) Base Packwood Sand _____	99) Base Lower Cymric Shale _____
31) Base Devilwater Silt _____	100) TUMEY/KREY. FM. UNDIFF. _____
32) TOP MIOCENE "TEMBLOR" UNDIFF. _____	101) EOC./OLIG. TUMEY FM. _____
33) MIOCENE ROUND MTN. FM. (E) _____	102) Top Oceanic Sand _____
34) Top Devilwater Sand _____	103) Base Oceanic Sand _____
35) Base Devilwater Sand _____	104) Top Lower Tumey Shale _____
36) Top Gould Shale _____	105) EOCENE KREYENHAGEN FM. _____
37) Top Gould Transgr. Sand _____	106) Top Krey. Stray Sand Zone _____
38) Base Gould Transgr. Sand _____	107) Base Krey. Stray Sand Zone _____
39) Base Gould Shale _____	108) EOCENE POINT OF ROCKS "FM." _____
40) Base Gould Unconformity _____	109) Top First P.O.R. Sand _____
41) MIOCENE "UPPER" TEBLOR FM. _____	110) Base First P.O.R. Sand _____
42) Top Buttonbed Sand Zone _____	111) Top Second P.O.R. Sand _____
43) Base Buttonbed Sand Zone _____	112) Base Second P.O.R. Sand _____
44) Top McVan/Nozu Sand (E) _____	113) Top Third P.O.R. Sand _____
45) Base McVan/Nozu Sand (E) _____	114) Base Third P.O.R. Sand _____
46) Top Media Shale _____	115) Top Fourth P.O.R. Sand _____
47) MIOCENE OLCESE FM. (E) _____	116) Base Fourth P.O.R. Sand _____
48) Top Carneros Sand Undiff. _____	117) Base Point Of Rocks Sand Undiff. _____
49) Top First Carneros Sand _____	118) Top Canoas Silt _____
50) Base First Carneros Sand _____	119) Base Canoas Silt _____
51) Top Media/Santos Shale Undiff. _____	120) EOCENE "FAMOSO" (E) _____
52) Top Second Carneros Sand _____	121) EOCENE DOM./LODO FM. UNDIFF. _____
53) Base Second Carneros Sand _____	122) Top Domengine Sand _____
54) MIOCENE FREEMAN-JENETT FM. (E) _____	123) Base Domengine Sand _____
55) Top Third Carneros Sand _____	124) EOC.-U. CRET. WALKER FM. (E) _____
56) Base Third Carneros Sand _____	125) Arroyo Hondo Shale Undiff. _____
57) Top Fourth Carneros Sand _____	126) Top Mabury Sand Zone Undiff. _____
58) Base Fourth Carneros Sand _____	127) Top First Mabury Sand _____
59) Base Carneros Sand Undiff. _____	128) Base First Mabury Sand _____
60) Main Upper Santos Shale _____	129) Top Main Mabury Sand _____
61) Top First Upper Santos Sand _____	130) Base Main Mabury Sand _____
62) Base First Upper Santos Sand _____	131) Base Mabury Sand Zone Undiff. _____
63) Top Second Upper Santos Sand _____	132) TOP PALEOCENE UNDIFF. _____
64) Base Second Upper Santos Sand _____	133) PALEOCENE MARTINEZ FM. _____
65) Top Pyramid Hill Sand (E) _____	134) PALEOCENE MORENO FM. _____
66) Base Pyramid Hill Sand (E) _____	135) TOP U. CRETACEOUS UNDIFF. _____
67) OLIG./MIO. "LOWER" TEBLOR FM. _____	136) U. CRETACEOUS MORENO FM. _____
68) Top Rio Bravo Sand (E) _____	137) U. CRETACEOUS "PANOCHÉ" FM. _____
69) Base Rio Bravo Sand (E) _____	138) BASEMENT UNDIFF. _____