Sapient Energy Corp.
Bertha J.Barber #12

ANNOTATED LIST OF GEOLOGIC EXHIBITS

Exhibit 22:
Structure Map, Monument Tubb Pool: This is a structure map on the top of the Lower Tubb Limestone. Note the distribution of Tubb completions shown in brown dots (legend). Note the local high areas on the map. This map is the "before" picture.

Exhibit 23:
Structure Map, Monument Tubb Pool with GAS AREAS: Here's the "after" picture. Same map as before but the 15 wells with cumulative GOR's in excess of 100,000 are grouped within red-shaded areas. Also shown is the cumulative production and GOR for each area. It is very clear that Tubb production has been gas on the structurally high areas of Monument Tubb oil pool.

Exhibit 24:
Table of /Gas Wells in Monument Tubb : The list as calculated from the PI/Dwights data for the C-116 filings. Note that all of the active wells have a produced GOR in excess of 100,00 over the past 12 months.

Exhibit 25:
Table of Gas/Liquid production for the three geographic areas. This shows the distribution of the production, and GOR's. Note that 19.7 BCF of gas has been produced from the Weir area which equals no more than 640 acres. (9 wells in 640 acres is de-facto 71 acre spacing!).

Exhibit 26:
GOR vs. Structure, Monument Tubb Oil Pool: Here's the relationship for all the wells in Monument Tubb for which we had both GOR and a structural point on the top of the Lower Tubb limestone. Looks like a broad relationship of higher GOR with higher structural position.

Exhibit 27:
Structure Map: Map on the top of the Lower Tubb Limestone. This horizon was selected because it is 1) located within the perfed interval, 2) a high-confidence pick, and 3) regionally extensive to be mapped over a wide area.

Exhibit 28:
Isopach Map: Map of the Net Tubb Porosity greater than 4% limestone units. Data is confined to the producing interval as developed in the Barber #12.

> Lithology: Refer to Barber #12 mudlog (Exhibit 29d) and lithodensity log (Exhibit 29a), and other wells with lithodensity logs. Tubb lithology is mixed, consisting of beds of Dolomite, Limestone, Sandstone, and mixtures of all of these. Thus picking one porosity cut-off value is therefore difficult. However it is necessary in order to interpret the porosity of different vintage and types of logs with a logical and uniform method.
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> An empirical analysis was made of three wells near the Barber #12 (Exhibit 28)

Exhibit 29:

Stratigraphic Cross-Section A-A': Cross section demonstrates the geologic correlations between the Barber #12, and offsetting wells to the north and northeast. This direction was chosen because it contains the most offsetting Tubb production. The cross-section demonstrates 1) the geologic continuity of the Tubb beds, but also 2) the discontinuity of discrete porosity intervals. I noted the lateral development of distinctly new beds within this framework as one moves east into the Monument Tubb field proper (sec 9).

Exhibit 30:

Porosity Cut-off Plat: Map locates the key wells used to develop an empirical porosity cut-off for the Tubb. Results:

> Net porosity >**4% LS** units on Density logs for both limestone and dolomite.
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> Net porosity >**52ms** in limestone beds, and >**58.5ms** in dolomite beds.
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> **Mathews #6:** 1961 Sonic Log. According to Chevron, "...production testing resulted in no fluid entry...". Therefore the rocks are too tight to produce. LS porosity is 3.11%. Dolomite porosity is 9.3%. The Tubb must have porosity greater than these levels to yield commercial fluids from the respective lithologies.
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> **Anderson #4:** 1976 Neutron/Density & Sonic Log. According to the scout ticket. No commercial fluid entry through dolomite perfs. Density porosity <4%LS. Commercial fluid entry obtained through overlying perfs in dolomite and limestone. Limestone porosity >4%, max 8%. Dolomite porosity >10%, max 12.6%. Comparison of Density and Sonic yielded nearly identical net porosity interpretations across both lithologies using a 4% limestone cut-off. This is equivalent to a 10.3% dolomite cut-off. On Sonic logs, the cut-offs would be 52 and 58.5 microseconds respectively.
>
> Conclude that commercial fluids recoverable if limestone porosity exceeds 4% or dolomite porosity exceeds 10%.
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> **Anderson #10:** 1996 Neutron/Density & Sonic Log. Visual inspection of both logs established a net porosity equivalence using a 4% limestone cut-off.