

Exhibit "B"  
Geological Report - Bell Lake Unit  
T 22, 23, 24S, R-33-34E  
Lea County, New Mexico

The proposed Bell Lake Unit Area is located in South Central Lea County, 18 miles southwest of Eunice, New Mexico, in T 22, 23, 24S, R 33-34E. An index map is attached hereto, and made a part hereof, which shows the position of the proposed unit in relation to nearby producing fields. The area so designated is located 4 miles west of a prominent topographic depression, the San Simon Sink. Continental Oil Company, a corporation, is the owner of certain leases in the proposed Bell Lake Unit Area, as shown on the accompanying Exhibit "A".

The proposed unit is based primarily on the results of an extensive reflection seismograph survey. The enclosed reflection seismic map (designated as Exhibit "1") is the result of a geophysical survey of Southwestern Lea County made by the Continental Oil Company. It extended for several townships in all directions from the proposed unit area, thereby adequately establishing the regional orientation of the structure described below. Two hundred forty nine control points, correlated by interlocking profiles approximately 1800' in length, were shot within the unit outline.

No deep geological information of a structural nature is available below the upper Permian. This map (Exhibit "1"), utilizing the minimum of indicated dip on all profiles, reveals 300' of relief on a lower member of the Bone Spring (Permian) formation, thereby indicating that the growth of a pre-Permian structure might have persisted throughout

lower Permian time. This structure encompasses an area of approximately 37,000 acres, its downdip limits being indicated by the proposed unit outline (as shown on the accompanying Exhibit "A"). The enclosed cross-sections (designated as Exhibit "2", and indicated on the attached Exhibit "1", as A-A' and B-B'), utilizing available geologic and velocity data from the Humble Oil & Refining Company, well No. 1 Federal-Wiggs (Section 31, T 24S, R 27E), were prepared from a series of contiguous seismic profiles and substantiate the presence of a pre-Permian structure, i.e., an increase in structure with depth as indicated by the marked divergence in the Pennsylvanian section under the unit area. Available subsurface information on the north end of the structure further substantiates the interpretation as here submitted.

This well-defined seismic anomaly may be interpreted as being a deep-seated structure, aligned in a north-south direction, parallel to the Central Basin Platform. This alignment suggests a close association with the Central Basin Platform, and both could have been developed by the same complex tectonic forces.

At the close of Pennsylvanian time the Pennsylvanian beds in this region were elevated, folded, and faulted, followed by a long period of erosion resulting in the peneplanation of the region. During this pre-Permian interval several disturbances occurred in the area surrounding the Trans-Pecos Basin of West Texas and Southeastern New Mexico. (The Trans-Pecos Basin is here defined as encompassing the Delaware and Marfa Basins). The Central Basin Platform, the Marathon region, the Ancestral Rocky Mountains, the Sierra Diablo Platform, and the Davis Mountain area were all affected by varying degrees of uplifting. The Central Basin Platform was a positive area throughout the Pennsylvanian period. Deposits of Atoka through Missouri stages flank the Platform and Virgil deposits

may have covered it in places. During the Pre-Permian interval this area was uplifted and most of the Pennsylvanian sediments removed or truncated. These marginal disturbances are reflected within the basin by structural trends which later influenced Permian deposition. The geologic history of this province gives us reason to believe that we should encounter convergence and divergence in the pre-Permian beds (see Exhibit "2") with most of this convergence and divergence occurring in the Pennsylvanian formations.

In the absence of any deep drilling in the immediate area of the proposed unit, we can only resort to speculation as to the section to be encountered by the drill below the upper Permian beds. However, the validity of the seismos structure above described suggests the very good possibility of encountering marked divergence and convergence over this structure below the Permian-Pennsylvanian contact. Furthermore, the possibilities of truncation in the pre-Pennsylvanian beds, and the resultant multiplied chances for stratigraphic oil traps, cannot be completely ruled out. It is possible that a section similar to that encountered in the Humble Federal-Wiggs well could be expected. This particular Ellenburger test reported an absence of all the Pennsylvanian section above the Atoka Stage. It is thought that this area was elevated at the close of Strawn time and the Strawn section subsequently removed. Therefore, the following formations encountered in that well, and the depths at which they were encountered are listed as follows:

| <u>Horizon</u>          | <u>Depth to Horizon</u> |
|-------------------------|-------------------------|
| Delaware Mountain Group | 2240'                   |
| Bone Spring             | 5740'                   |
| Wolfcamp                | 9720'                   |
| Pennsylvanian           | 10790'                  |
| Mississippian           | 12470'                  |
| Devonian                | 13130'                  |
| Montoya                 | 14260'                  |
| Simpson                 | 14510'                  |
| Ellenburger             | 14768'                  |

The Continental proposes to test this conspicuous seismos structure with a well of sufficient depth to test the Pennsylvanian formation, or 12,000; unless unitized substances shall be discovered in paying quantities at a lesser depth.

Development in the subject area tends to be retarded due to the wide diversity of ownership. It is believed that the subject unit area, as shown on Exhibit "A", is an area logically subject to unitization, and is supported by the geophysical survey. Therefore, Continental proposes to bring this diversified ownership together so that development might be carried out in an orderly manner and in the best interest of conservation.

Respectfully,

*S. W. Marshall Jr.*  
G. W. Marshall, Jr.  
Division Geologist  
Roswell, New Mexico  
Continental Oil Company

W ←

EXHIBIT "2"

→ E

A

A<sub>1</sub>

7000

8000

9000

10,000

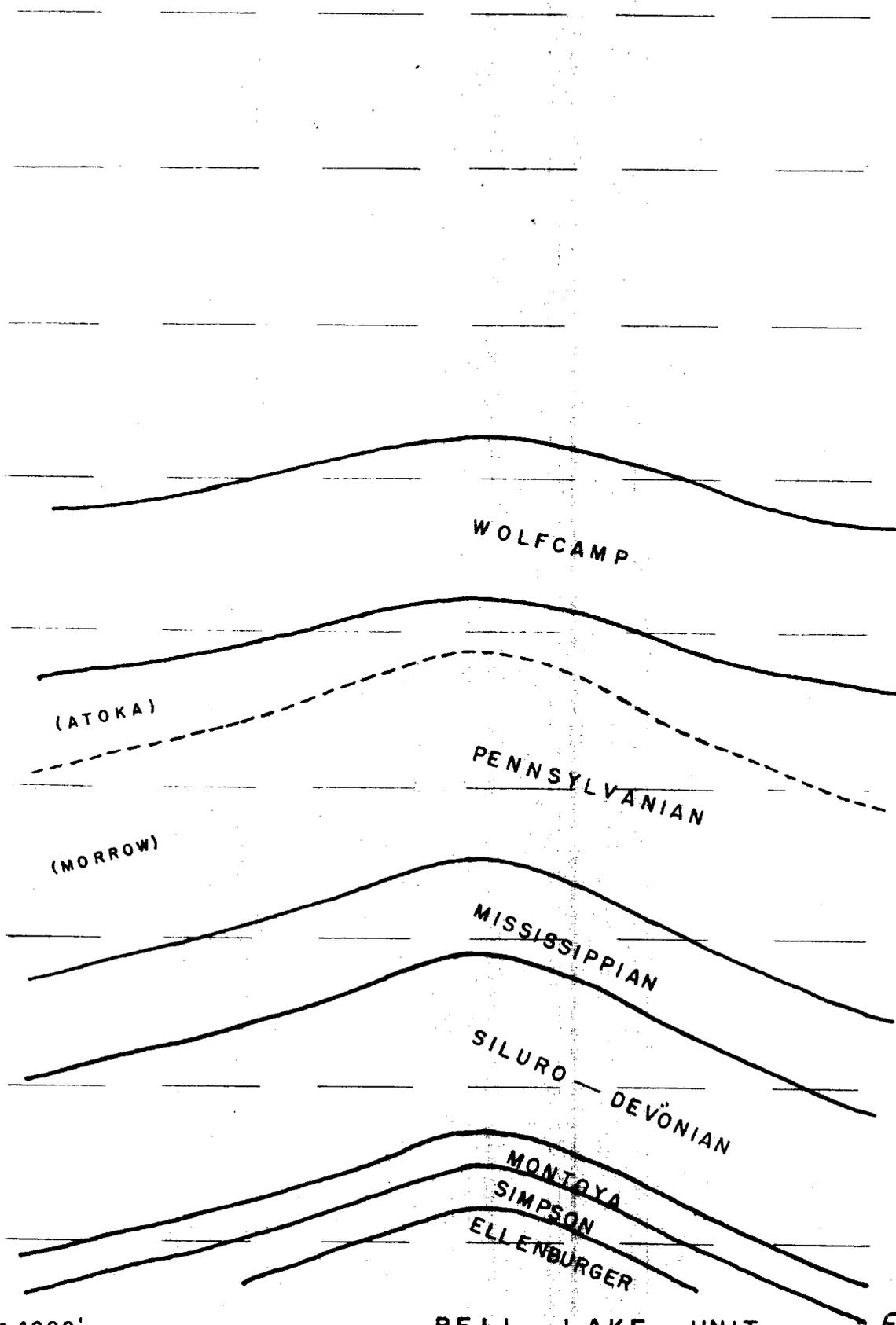
11,000

12,000

13,000

14,000

15,000



SCALE

Hor. - 1 in = 4000'

Ver. - 1 in = 1000'

BELL LAKE UNIT

Exhibit 2

GEOLOGIC CROSS SECTION A-A<sub>1</sub>  
AS INDICATED BY SEISMIC DATA  
SHOWN ON EXHIBIT "1"