EXHIBIT #6: RESERVOIR BOUNDARY CONFIRMATION: WELL TEST ANALYSIS:

The Bonneville Fuels Corporation has requested two significant actions in the South Humble City Field Area by the New Mexico Oil Conservation Division:

1. Contracting the existing South Humble City Strawn Fm. Pool to the S. 1/2 of Section 12, the N. 1/2 of Section 13, the E. 1/2 of S.W. 1/4 of Section 13, and the N.E. 1/4 of Section 14, all in T.17S., R.37E., Lea County, New Mexico.
2. Creating a new pool, the Proposed Southwest Humble City Upper Strawn Fm. Pool, consisting of the N.W. 1/4 of Section 14, the S. 1/2 of Section 14, and the W. 1/2 of the S.W. 1/4 of Section 13, all in T.17S., R.37E., Lea County, New Mexico.

Four previous exhibits have presented the interpretation of Geological, Geophysical, and Well Test Data in support of these requested actions. These four exhibits are:

1. Exhibit #2: Porosity-Thickness Map.
2. Exhibit #3: NW-SE Cross-Section.
3. Exhibit #4: NE-SW Cross-Section.
4. Exhibit #5: Reservoir Pressure Data In March 1996.

These 4 exhibits indicate that the proposed Southwest Humble City Upper Strawn Fm. Pool is a single, continuous & contiguous algal mound development which is well-connected hydraulically within its bounds, and is hydraulically isolated from the algal mounds which develop to its east and northeast in the South Humble City Pool.

Several Pressure Build-Up Test Analyses conducted over the life of the reservoir indicate the presence of hydraulic boundaries which isolate the proposed Southwest Humble City Upper Strawn Fm. Pool from other isolated algal mound pods to the east and northeast in the South Humble City Strawn Fm. Pool. A semi-log analysis (Build-Up Pressure vs. [{Production Time plus Shut-In Time} divided by Shut-In Time]) was applied to the Build-Up Data for these tests and the distance to boundaries, where boundaries were indicated, was calculated using the intersection of straight-line segments in which late-time slope-doubling occurred. A Datum of -7,750' Sub-Sea Depth was chosen for all tests in the interpretation of reservoir pressure at the time of these tests.

These pressures and well test data, along with petro-physical properties determined from a Core Lab Differential Liberation Analysis undertaken in November 1995, were used in calculating necessary physical parameters for boundary computations. The Core Lab Differential Liberation Analysis results were based on computer simulation of the results of a Core Lab 1982 Flash Liberation Analysis of a fluid sample from the Lottie York #1 well taken in December 1982.

The nearest measured boundary presented below is the distance from the subject well to the nearest Zero Porosity Thickness Contour presented on Exhibit #2 (The Porosity-Thickness Map). The following three (3) well tests in the Proposed Southwest Humble City Upper Strawn Fm. Pool, on the basis of the aforementioned analysis, seem to indicate the presence of permeability (no flow) boundaries, as follows:

1. Lottie York #1: 990' FSL & 660' FEL, Section 14:
   Shut-In Period: 12/12/82 - 12/15/82: P*= 3,092 PSIA.
   Maximum Build-Up Pressure = 3,002 PSIA

   Nearest Measured Boundary: 507 feet.
   Nearest Well Test Calculated Boundary: 468 feet.

2. Lottie York #2: 1650' FSL & 1650' FEL, Section 14:
   Shut-In Period: 5/2/83 - 5/5/83: P*= 2,979 PSIA.
   Maximum Build-Up Pressure = 2,916 PSIA.

   Nearest Measured Boundary: 275 feet.
   Nearest Well Test Calculated Boundary: 90 feet.
   Second Well Test Calculated Boundary: 456 feet.

EXHIBIT #6: RESERVOIR BOUNDARY CONFIRMATION: WELL TEST ANALYSIS: CONTINUED:

3. Lottie York #3: 2030' FSL & 2300' FWL, Section 14:
Shut-In Period: 3/18/96 - 3/25/96: P*= 1,240 PSIA.
Maximum Build-Up Pressure = 1,188 PSIA.

Nearest Measured Boundary: 482 feet.
Nearest Well Test Calculated Boundary: 151 feet.

EXHIBIT #6: ENGINEERING CONCLUSIONS:

1. The most significant engineering conclusion in evaluating the previously submitted data is that the Proposed Southwest Humble City Upper Strawn Fm. Pool is a hydraulically distinct reservoir whose northern boundary is confirmed (in its approximate location) repeatedly by the well test data.

2. The well test calculated boundaries are all closer to the subject wells than the Zero Porosity-Thickness Contours identified in Exhibit #2 (The Porosity-Thickness Map). This would seem to indicate that the reservoir pods identified in Exhibit #2 are, in fact, smaller than the enclosed areas within the Zero Porosity-Thickness Contours. This confirms the reservoir pod isolation indicated by Exhibit #2 and supports the contention by the Bonneville Fuels Corporation that the Southwest Humble City Upper Strawn Fm. Pool reservoir pod and the South Humble City Strawn Fm. Pool reservoir pods are hydraulically distinct, and merit separate Pool designation by the N.M.O.C.D.

3. The closest well test boundary identified in the Lottie York #2 well test analysis indicates a No-Flow Boundary within the Southwest Humble City Upper Strawn Fm. Pool reservoir pod which has not been seen in the interpretation of the seismic data for Exhibit #2.

The test data were obtained using standard field practices. The analysis was straight-forward and involved my best estimates (based on field study and professional experience of necessary calculation data not measured in the field) and standard analysis techniques as detailed in "ADVANCES IN WELL TEST ANALYSIS" by Robert C. Earlougher, Jr. (Copyright 1977: ISBN 0-89520-204-2). The conclusions drawn were based on my best interpretation of the well test data.

A copy of each individual well test analysis is available to the N.M.O.C.D. and, if desired by the Examiner or the N.M.O.C.D., will be presented to the Examiner and entered into the record and made a part of the testimony if that is so desired.

ALL OF THE AFORESAID EXHIBIT #6 IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND IS PRESENTED UNDER MY SEAL.

R. A. Schwering 4/30/96

Robert A. Schwering, P.E.
Operations Manager: New Mexico
Bonneville Fuels Corporation

Colorado P.E. No. 28108
Petroleum Engineer

BEFORE THE
OIL CONSERVATION DIVISION
Santa Fe, New Mexico

Case No. 11493 Exhibit No. 6

Submitted by: Bonneville Fuels Corporation

Hearing Date: May 2, 1996