BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Humble EXHIBIT NO. 1
CASE NO. 1512

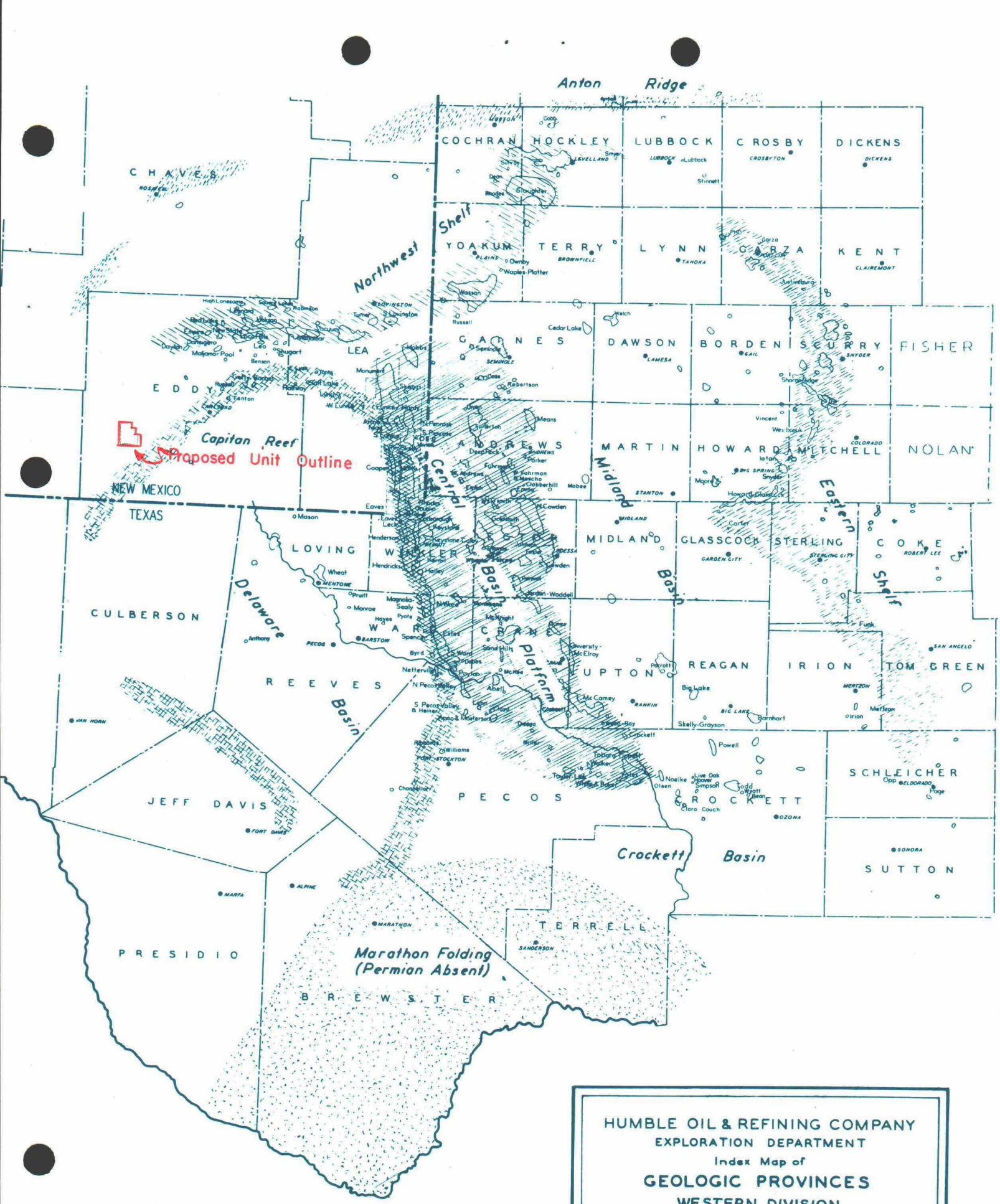
TO: DIRECTOR, UNITED STATES GEOLOGICAL SURVEY, WASHINGTON, D. C.

FROM: HUMBLE OIL & REFINING COMPANY, EXPLORATION DEPARTMENT, ROSWELL, NEW MEXICO.

SUBJECT: REPORT ON THE GEOLOGY OF THE BANDANA POINT AREA, EDDY COUNTY, NEW MEXICO.

PURPOSE: THIS REPORT IS SUBMITTED TO SHOW THE GEOLOGY OF THE PROPOSED BANDANA POINT UNIT AREA. IT IS BELIEVED THAT THE GEOLOGIC CONDITIONS ARE SUCH THAT THE MOST REASONABLE METHOD OF EXPLORATION AND DEVELOPMENT IS BY MEANS OF AN APPROVED FEDERAL UNIT.

DATE: MAY, 1958.



HUMBLE OIL & REFINING COMPANY
EXPLORATION DEPARTMENT
Index Map of
GEOLOGIC PROVINCES
WESTERN DIVISION

EXHIBIT "A"

REPORT ON THE BANDANA POINT AREA
EDDY COUNTY,
NEW MEXICO

INTRODUCTION

The proposed Bandana Point Federal Exploratory Unit encloses an area of 14,292.89 acres in southwestern Eddy County, New Mexico, 18 miles southwest of the town of Carlsbad. The general location is as shown on the plat attached hereto as Exhibit "A"

The recommended outline includes all of Sections 34, 35, and 36, Township 22 South, Range 23 East; Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, and 27, Township 23 South, Range 23 East; the west half of Section 6, and all of Sections 7, 18, 19, and 30, Township 23 South, Range 24 East, Eddy County, New Mexico. The 14,292.89 acres within the proposed unit are composed of 13,012.89 acres of Federal and 1280 acres of State land. It is recommended that Humble Oil & Refining Company be designated as the unit operator.

The Bandana Point prospect is located on the Northwest Shelf of the Permian Basin. The proposed unit outline encloses a northwest-southeast oriented seismic structure which parallels the Huapache monocline and fault six miles to the southwest.

The tentative location for the test well is in the southwest quarter of the northeast quarter of Section 13, Township 23 South, Range 23 East. The well is scheduled as an 11,500-foot Siluro-Devonian Hunton test. The Hunton dolomite is the principal objective and is expected to be encountered at a depth of approximately 10,600 feet.

It is believed that petroleum exploration and field development of this anticlinal structure could best be undertaken within an approved unit. Therefore, it is requested that a Federal Exploratory Unit be formed to further oil and gas exploration, development, and conservation.

SUBSURFACE STRATIGRAPHY

The stratigraphic relationships of the formations in the unit area are shown on the accompanying Roswell Geological Society cross-section, marked Exhibit "B".

The general stratigraphy of the Bandana Point Unit area can best be described from the section encountered by the Humble Oil & Refining Company No. 2 Huapache Unit wildcat in Section 23, Township 23 South, Range 22 East, seven miles west of the proposed unit well. The No. 2 Huapache drilled a typical Delaware Basin section except that the basinal Bone Spring formation is overlain by the shelf San Andres. This is typical of the transition of these formations from shelf to basin.

ORDOVICIAN:

ELLENBURGER: 640 feet thick. Tan to brown, finely crystalline to crystalline dolomite.

SIMPSON: 40 feet thick. Gray to black, dense to finely crystalline dolomite and gray shaley, coarse-grained sandstone.

MONTOYA: 420 feet thick. Light gray to brown, very fine to finely crystalline dolomite with a trace of chert.

SILURO-DEVONIAN:

HUNTON: 640 feet thick. White to tan, crystalline dolomite with very slight amounts of chert and dense limestone.

MISSISSIPPIAN:

WOODFORD: 60 feet thick. Brown to black, pyritic shale.

RANCHERIA: 280 feet thick. Brown to gray, dense, cherty limestone.

PENNSYLVANIAN:

BEND: 1240 feet thick. Tan to brown, dense limestone interbedded with gray to black shale and white, fine- to medium-grained sandstone.

STRAWN: 450 feet thick. Tan to brown, dense, cherty limestone interbedded with gray shale and some chert.

CANYON: 1410 feet thick. Tan to brown, dense limestone; white to tan, medium to coarsely crystalline dolomite; and gray to brown shale.

CISCO: 480 feet thick. Interbedded gray to brown shale and tan to brown, dense limestone.

PERMIAN:

WOLFCAMP: 900 feet thick. Interbedded gray shale and white to brown, dense limestone with scattered thin beds of sandstone and chert.

DEAN: 220 feet thick. Gray, very fine-grained sandstone.

BONE SPRING: 4650 feet thick. Brown, very finely crystalline limestone and tan, finely crystalline dolomite with interbedded gray shale and sandstone.

SAN ANDRES: 1120 feet thick. Gray to brown, dense to very finely crystalline limestone and white to tan, fine to medium crystalline dolomite. The well was spudded in the San Andres and therefore the total thickness was not represented.

The Bandana Point well should encounter these formations at the following depths: (Elevation of the ground approximately 4100 feet)

Estimated Depth	Formation
0-900 feet	Queen-Grayburg
900-2200 feet	San Andres
2200-6300 feet	Bone Spring
6300-6500 feet	Dean Sand
6500-7000 feet	Wolfcamp
7000-7400 feet	Cisco
7400-8200 feet	Canyon
8200-8700 feet	Strawn
8700-10,150 feet	Bend
10,150-10,550 feet	Rancheria
10,550-10,600 feet	Woodford
10,600-11,350 feet	Hunton

STRUCTURE

The proposed Bandana Point Unit area covers a reflection seismograph anomaly as shown on the attached map marked Exhibit "C". The 400 feet of closure mapped on a deep anticlinal fold is reflected to a lesser extent in several shallower horizons. The crest of the structure occurs in Sections 12 and 13, Township 23 South, Range 23 East. The quality of the records obtained varied from fair to poor. The proposed unit outline was drawn to include the lowest closed contour and includes all locations which would probably be productive from the Hunton.

ECONOMIC CONSIDERATIONS

The principal objective of the Bandana Point prospect is the Siluro-Devonian Hunton dolomite. This formation is porous over most of southeastern New Mexico and is expected to produce if encountered on a closed structure. Secondary objectives are the sandstones and porous carbonates of the Pennsylvanian which could produce from stratigraphic or combination traps. Production is also possible from the Bone Spring, if porosity and stratigraphic trap conditions are encountered in the carbonates and sandstones which compose this formation.

In the event of commercial production or if encouraging results are obtained in the initial well, additional wells may be drilled within the unit area. However, the development program will be conducted in a manner governed by modern exploitation techniques and petroleum conservation methods.

Respectfully submitted,

Humble Oil & Refining Company

William J Johnson

By
William J. Johnson

WJJ:bc

Attachments

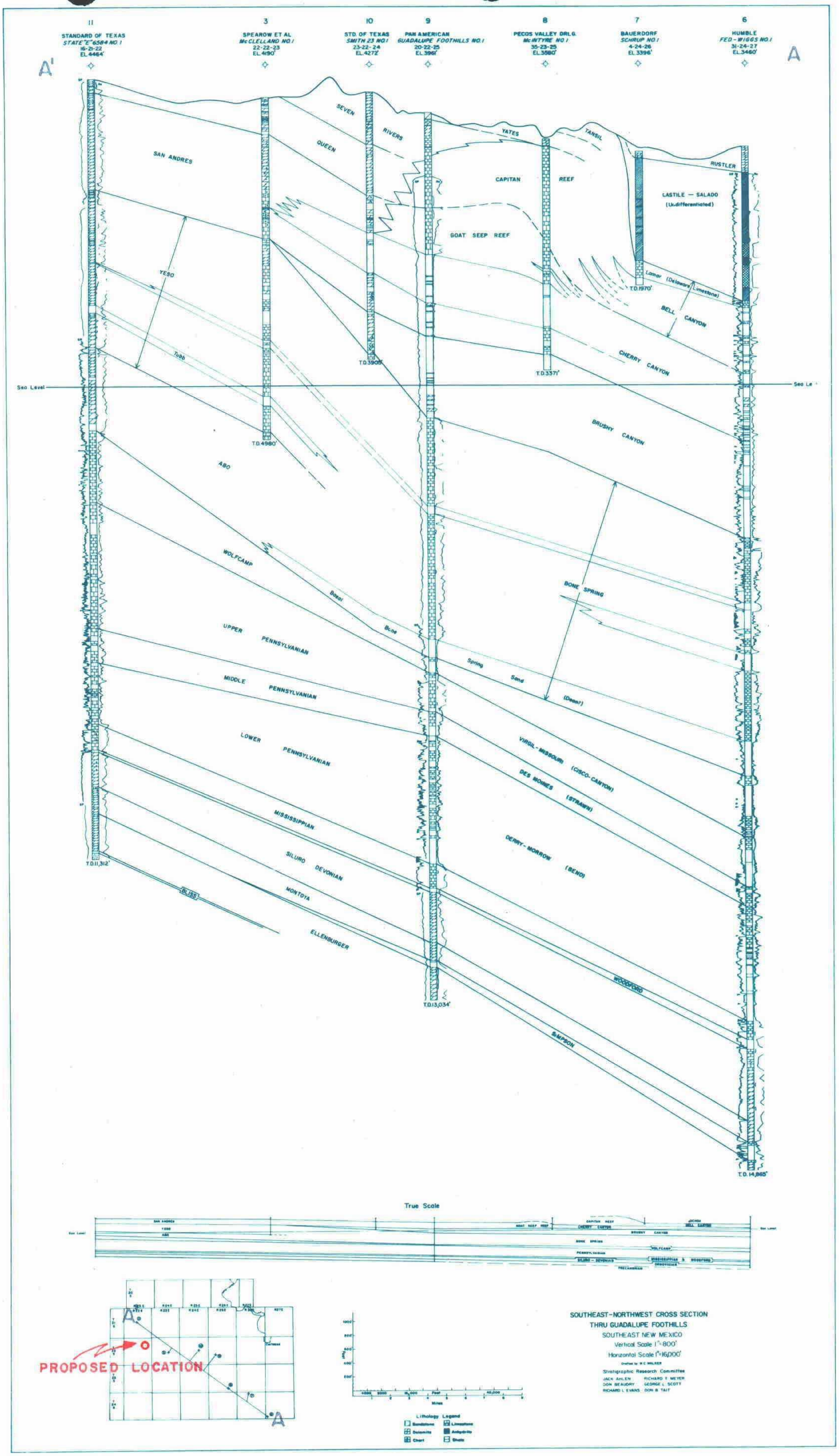

A'
A
11
STANDARD OF TEXAS
STATE "E" 6584 NO. 1
16-21-22
EL. 4464'
3
SPEAROW ET AL
McCLELLAND NO. 1
22-22-23
EL. 4190'
10
STD. OF TEXAS
SMITH 23 NO. 1
23-22-24
EL. 4272'
9
PAN AMERICAN
GUADALUPE FOOTHILLS NO. 1
20-22-25
EL. 3961'
8
PECOS VALLEY DRLG.
McINTYRE NO. 1
35-23-25
EL. 3580'
7
BAUERDORF
SCHRUP NO. 1
4-24-26
EL. 3396'
6
HUMBLE
FED - WIGGS NO. 1
31-24-27
EL. 3460'
SEVEN RIVERS
YATES
TANSIL
QUEEN
SAN ANDRES
CAPITAN REEF
RUSTLER
LASTILE — SALADO
(Undifferentiated)
GOAT SEEP REEF
YESO
Lamar (Delaware Limestone)
BELL CANYON
CHERRY CANYON
T.D. 1970'
T.D. 3371'
T.D. 3905'
T.D. 4980'
Sea Level
BRUSHY CANYON
ABO
WOLFCAMP
BONE SPRING
Basal Bone Spring Sand (Dean?)
UPPER PENNSYLVANIAN
MIDDLE PENNSYLVANIAN
LOWER PENNSYLVANIAN
VIRGIL-MISSOURI (CISCO-CANYON)
DES MOINES (STRAWN)
DERRY-MORROW (BEND)
MISSISSIPPIAN
SILURO DEVONIAN
MONTOYA
BLISS
ELLENBURGER
WOODFORD
SIMPSON
T.D. 11,312'
T.D. 13,034'
T.D. 14,865'
True Scale
SAN ANDRES
ABO
GOAT SEEP REEF
CAPITAN REEF
CHERRY CANYON
BELL CANYON
BRUSHY CANYON
BONE SPRING
WOLFCAMP
PENNSYLVANIAN
SILURO - DEVONIAN
MISSISSIPPIAN & WOODFORD
ORDOVICIAN
PRECAMBRIAN
Sea Level
PROPOSED LOCATION
Lithology Legend
Sandstone
Limestone
Dolomite
Anhydrite
Chert
Shale
SOUTHEAST-NORTHWEST CROSS SECTION
THRU GUADALUPE FOOTHILLS
SOUTHEAST NEW MEXICO
Vertical Scale 1" = 800'
Horizontal Scale 1" = 16,000'
Drafted by W. C. WALKER
Stratigraphic Research Committee
JACK AHLEN
RICHARD F. MEYER
DON BEAUDRY
GEORGE L. SCOTT
RICHARD L. EVANS
DON B. TAIT

EXHIBIT "B"

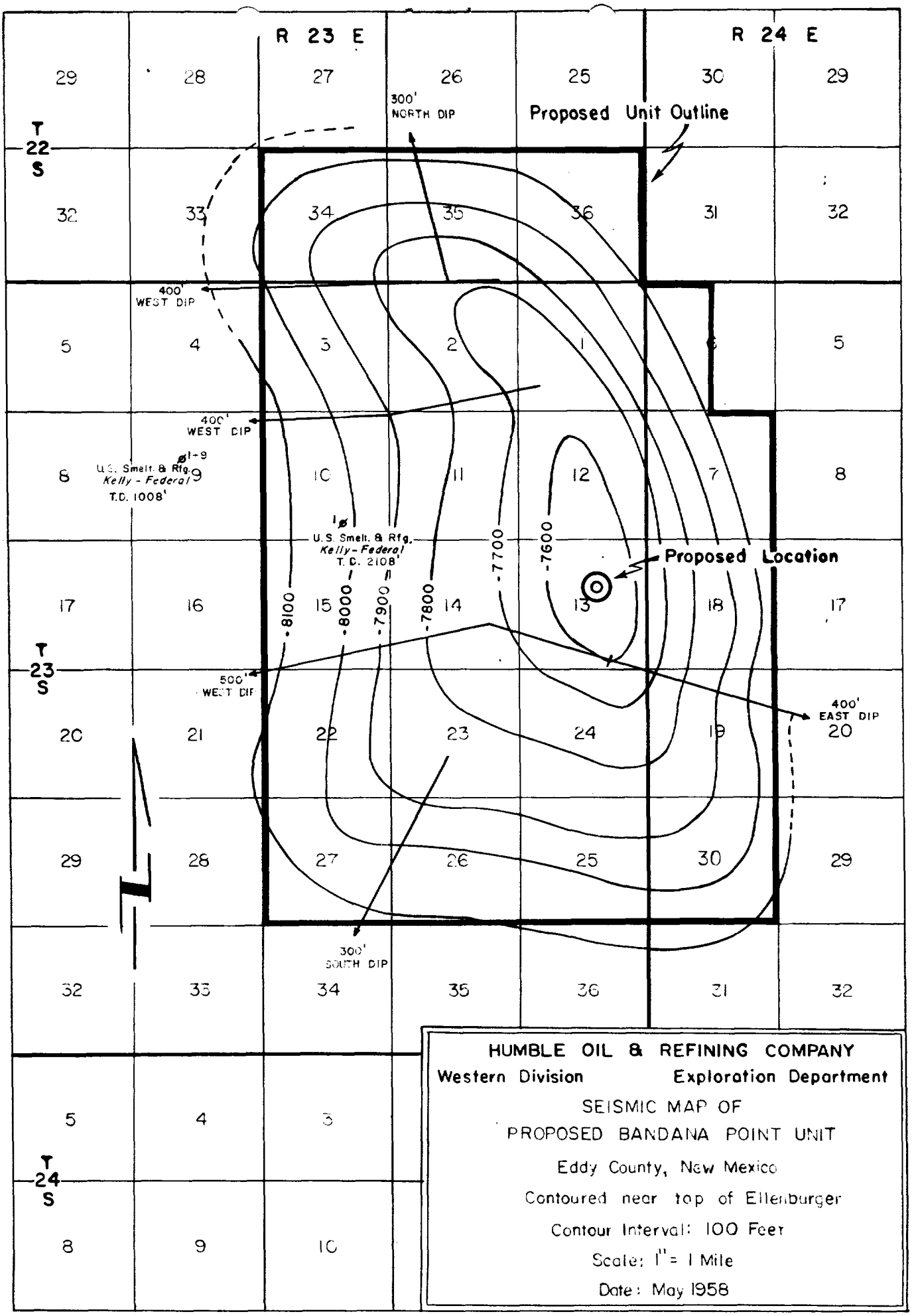

R 23 E
R 24 E
T 22 S
T 23 S
T 24 S
300' NORTH DIP
Proposed Unit Outline
400' WEST DIP
400' WEST DIP
U.S. Smelt. & Rfg. Kelly - Federal T.D. 1008'
U.S. Smelt. & Rfg. Kelly - Federal T.D. 2108'
-7600
-7700
-7800
-7900
-8000
-8100
Proposed Location
500' WEST DIP
400' EAST DIP
300' SOUTH DIP
HUMBLE OIL & REFINING COMPANY
Western Division Exploration Department
SEISMIC MAP OF
PROPOSED BANDANA POINT UNIT
Eddy County, New Mexico
Contoured near top of Ellenburger
Contour Interval: 100 Feet
Scale: 1" = 1 Mile
Date: May 1958

EXHIBIT "C"

Case 1512
Law Hearing

J. M. HERVEY 1874-1953

HIRAM M. DOW
CLARENCE E. HINKLE
W. E. BONDURANT, JR.
GEORGE H. HUNKER, JR.
HOWARD C. BRATTON
S. B. CHRISTY IV
LEWIS C. COX, JR.

PAUL W. EATON, JR.
ROBERT C. BLEDSOE

LAW OFFICES
HERVEY, DOW & HINKLE
HINKLE BUILDING
ROSWELL, NEW MEXICO

TELEPHONE MAIN 2-6510
POST OFFICE BOX 547

OIL CONSERVATION COMMISSION OFFICE OCC
1958 SEP 12 AM 8:37

September 5, 1958

New Mexico Oil Conservation Commission
Mabry Hall, State Capitol
Santa Fe, New Mexico

Re: Bandana Point Unit Agreement

Gentlemen:

We enclose herewith in triplicate Application of Humble Oil & Refining Company for approval of the proposed Bandana Point Unit Agreement embracing lands in Eddy County, New Mexico. You will also find enclosed three copies of the proposed Unit Agreement.

The area described in the application has been designated by the U.S.G.S. as an area suitable and proper for unitization and the agreement has been approved as to form by the U.S.G.S. We are making application to the Commissioner of Public Lands for approval as to form and for approval of the unit after it has been approved by the Conservation Commission.

We would like to have this matter set down for hearing as soon as practicable and please send us a copy of the notice as soon as prepared and ready for publication.

Yours very truly,

HERVEY, DOW & HINKLE

By Howard C. Bratton

HCB/bp
Encl.

cc: Humble Oil & Refining Company
Roswell, New Mexico

Docket Mailed 9-19-58 BP

Please set for first available examiner hearing — HCB