

MERIDIAN OIL

CASE # 10702

APRIL 8, 1993

UTE #8 Horizontal Well

APPLICATION

EXHIBIT "A": PLAT • Barker Creek Paradox (Pennsylvanian) Gas Pool

• Drillblock

• Offset Ownership

EXHIBIT "B": PLAN VIEW OF WELL

EXHIBIT "C": DIRECTIONAL WELL PLANS

EXHIBIT "D": OFFSET OWNERSHIP

EXHIBIT "E": REGIONAL MAP
STRUCTURE MAP TOP DESERT CREEK

EXHIBIT "F": STRATIGRAPHIC CORRELATION CHART
TYPE LOG

EXHIBIT "G": NET PAY ISOPACH UPPER ISMAY
STRATIGRAPHIC CROSS SECTION A-A'

EXHIBIT "H": DETAILED STRUCTURE MAP TOP GRANEROS

KELLAHIN AND KELLAHIN

ATTORNEYS AT LAW

EL PATIO BUILDING

117 NORTH GUADALUPE

POST OFFICE BOX 2265

SANTA FE, NEW MEXICO 87504-2265

W. THOMAS KELLAHIN*

*NEW MEXICO BOARD OF LEGAL SPECIALIZATION
RECOGNIZED SPECIALIST IN THE AREA OF
NATURAL RESOURCES-OIL AND GAS LAW

TELEPHONE (505) 982-4285

TELEFAX (505) 982-2047

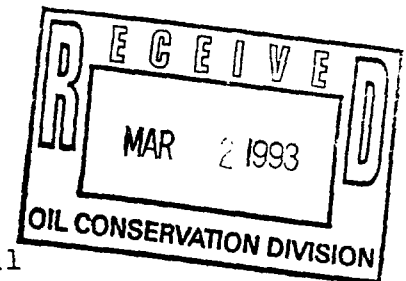
JASON KELLAHIN (RETIRED 1991)

March 12, 1993

Mr. William J. LeMay
Oil Conservation Division
State Land Office Building
310 Old Santa Fe Trail, Room 219
Santa Fe, New Mexico 87501

HAND DELIVERED

Re: Ute #8 Well
Sections 15 & 16, T32N, R14W, NMPM.
Application of MERIDIAN OIL INC.
for a High Angle/Horizontal Directional
Drilling Pilot Project, including Special
Operating Rules, An Unorthodox Gas Well
Location, and a Non-standard Spacing Unit.
Barber Creek Paradox Gas Pool,
San Juan County, New Mexico



Dear Mr. LeMay:

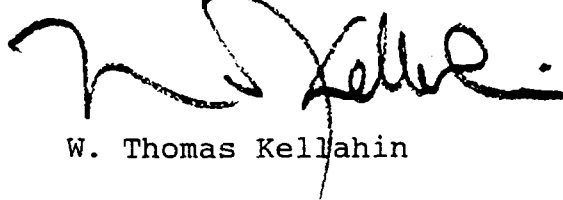
On behalf of Meridian Oil., please find enclosed our Application for a High Angle/Horizontal Direction Drilling Pilot Project as referenced above, which we request be set for hearing on the next available Examiner's docket now scheduled for April 8, 1993.

By copy of this letter and application, sent certified mail-return receipt requested, we are notifying all interested parties offsetting the subject well and its proposed spacing and proration unit of their right to appear at the hearing and participate in this case, including the right to present evidence either in support or in opposition to the application and that failure to appear at the hearing may preclude them from any involvement in this case at a later date. Also, all parties entitled to notice are hereby informed that pursuant to Division requirements all parties appearing in this case are required to file a Pre-Hearing Statement with the Division no later than 4:00 p.m. on Friday, April 2, 1993.

Mr. William J. LeMay
March 12, 1993
Page Two

Also enclosed is our suggested advertisement for this case.

Very truly yours,

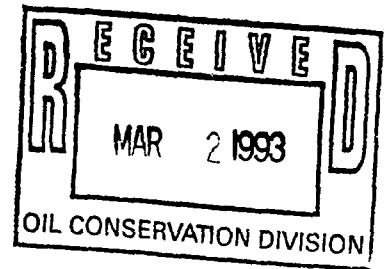
A handwritten signature in dark ink, appearing to read 'W. Thomas Kellahin', is written over the typed name. The signature is fluid and cursive, with a large initial 'W' and a long, sweeping underline.

W. Thomas Kellahin

WTK/jcl
Enclosures

cc: with Enclosures
John F. Zent - Meridian Oil Inc.
Alan Alexander - Meridian Oil Inc.
Farmington, New Mexico

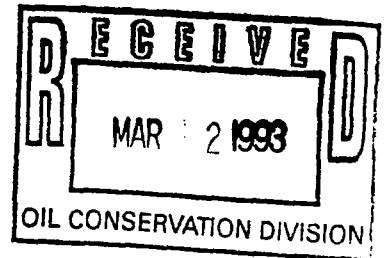
By Certified Mail - Return Receipt
All Parties Listed on Exhibit "D" of Application



Suggested Advertisement for the OCD Docket

CASE _____: Application of Meridian Oil Inc. for a high angle/horizontal directional drilling pilot project, special operating rules therefor, an unorthodox gas well location, and a non-standard proration unit, San Juan County, New Mexico.

Applicant, in the above-styled cause, seeks to initiate a high angle/horizontal directional drilling pilot project in the Barker Creek Paradox (Pennsylvanian) Gas Pool for all of Sections 15 and 16, Township 32 North, Range 14 West, NMPM, San Juan County, New Mexico, including a non-standard 1280-acre spacing unit for said pool. The applicant proposes to re-enter its Ute #8 Well at its existing unorthodox surface location 1750 feet FSL and 950 feet FWL (Unit L) of said Section 15 and drill a high angle-horizontal well such that the bottom hole terminus of the well shall be at an unorthodox bottom hole location not closer than 990 feet FNL and not closer than 550 feet FEL of Section 16. Applicant further seeks special rules and provision within the pilot project area including the designation of a prescribed area limiting the horizontal displacement of the well bore such that its producing interval be no closer than 1650 feet to the south, west and east outer boundaries of the spacing unit and no closer than 990 feet to the north outer boundary of the spacing unit. Said project areas is located approximately 8 miles Northwest of La Plata, New Mexico.



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO: _____

APPLICATION OF MERIDIAN OIL INC.
FOR A HIGH ANGLE/HORIZONTAL DIRECTIONAL
DRILLING PILOT PROJECT INCLUDING
SPECIAL OPERATING RULES, AN
UNORTHODOX GAS WELL LOCATION,
AND A NON-STANDARD PRORATION UNIT,
SAN JUAN COUNTY, NEW MEXICO

A P P L I C A T I O N

Comes now MERIDIAN OIL INC., by and through its attorneys, Kellahin and Kellahin, and applies to the New Mexico Oil Conservation Division for approval for a High Angle/Horizontal Directional Drilling Pilot Project in the Barker Creek Paradox (Pennsylvanian) Gas Pool, including Special Operating Rules, a non-standard 1280 acre spacing unit consisting of all of Sections 15 and 16, Township 32 North, Range 14 West, NMPM, San Juan

County, New Mexico, including an Unorthodox Gas Well Location for its Ute #8 Well to be re-entered at its existing unorthodox surface location 1750 feet FSL and 950 feet FWL of said Section 15 and drilling a high angle-horizontal well such that the bottom hole terminus of the well shall be at an unorthodox bottom hole location not closer than 990 feet FNL and not closer than 550 feet FEL of Section 16. Applicant further seeks special rules and provision within the pilot project area including the designation of a prescribed area limiting the horizontal displacement of the wellbore such that its producing interval be no closer than 1650 feet to the south, west and east outer boundaries of the spacing unit and no closer than 990 feet to the north outer boundary of the spacing unit. In support thereof, Applicant states:

(1) The Barker Creek-Paradox Gas Pool ("Pool") was established by Order R-13 issued March 15, 1950 and extended by Order R-6421 dated August 1, 1980.

(2) The current Pool boundaries are shown on Exhibit "A" attached and consists of the following acreage:

TOWNSHIP 32 NORTH, RANGE 14 WEST, NMPM

Sections 8-11: All
Sections 14-16: All
Section 17: E/2
Sections 19-22: All
Section 23: NW/4
Section 27: NW/4
Section 28: N/2
Section 29: All

(3) With the exception of the W/2 of Section 19 which is unleased and owned by the Ute Mountain Tribe, Meridian Oil Inc. controls 100% of the operating rights in the Pool with 100% of the royalty, being owned by the Ute Mountain Tribe.

(4) On November 21, 1950, the Commission issued Order R-46 which established 640-acre spacing units and required wells to be located "not closer than 330 feet to center and 1650 feet from boundary of each section" in the Pool.

(5) On June 27, 1951, El Paso Natural Gas Company, predecessor to Meridian spudded its Ute #8 Well at an unorthodox surface location 1750 feet FSL and 950 feet FWL of Section 15 and drilled the well to a total depth

of 8750 feet. The well was completed on September 6, 1951.

(6) Meridian proposes to re-enter its Ute #8 Well and attempt to recomplete it as a high angle/horizontal directional well in the Pennsylvanian formation of the Barker Creek Paradox Gas Pool by squeezing the existing Paradox perforations from 8032 feet to 8216 feet, milling a section from 7650 feet to 7710 feet, setting a cement kickoff plug from 7650 feet to 7900 feet and drilling to the kickoff point at approximately 7680 feet. At that point, the Applicant will select a target point within the drilling-producing window established for the well and then kick off the well in an estimated northwesterly direction and commence to building angle at an appropriate rate which will reach the target point such that the producing interval of the well will be within the drilling-producing window from the top of the Pennsylvanian formation to the base of the Pennsylvanian formation. A copy of Applicant's preliminary projection of a horizontal and vertical plans for the subject well are attached as Exhibits "B" and "C" respectively.

(7) The drilling-producing window is identified as the area within a 640 acre non-standard spacing unit consisting of the W/2 of Section 15 and the E/2 of Section 16 which shall be no closer than 1650 feet to the west, south and east outer spacing unit boundaries and no closer than 990 feet to the north outer spacing unit boundary. See Exhibit "B."

(8) The target point is defined at the actual bottom hole location at the end point of the lateral of the subject well.

(9) The Pennsylvanian formation of Barker Creek Paradox Gas Pool is characterized by tight, low permeability carbonate reservoir. That interval is the potential productive zone in this section.

(10) Because the producing interval of the well will be closer than 1650 feet to the north outer boundary of the spacing unit, an unorthodox well location is necessary.

(11) By drilling a high angle/horizontal wellbore, Meridian is attempting to increase the ultimate recovery from these low permeability reservoirs, thereby preventing waste.

(12) In as much as the exact distance and direction of the lateral portion of the wellbore is not known at this time, Meridian seeks approval to be allowed to drill and produce said lateral portion anywhere within the drilling-producing window.

(13) As required, notice is provided to those offsetting interest owners as listed on Exhibit "D."

(14) The granting of this Application will be in the best interest of conservation, the prevention of waste and the protection of correlative rights.

WHEREFORE, Applicant requests that this matter be set for hearing on April 8, 1993 before a duly appointed Examiner of the Oil Conservation Division and, after notice and hearing as required by law, the Division enter its Order granting this application.

Respectfully submitted,

KELLAHIN and KELLAHIN

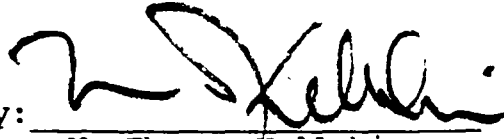
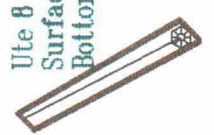
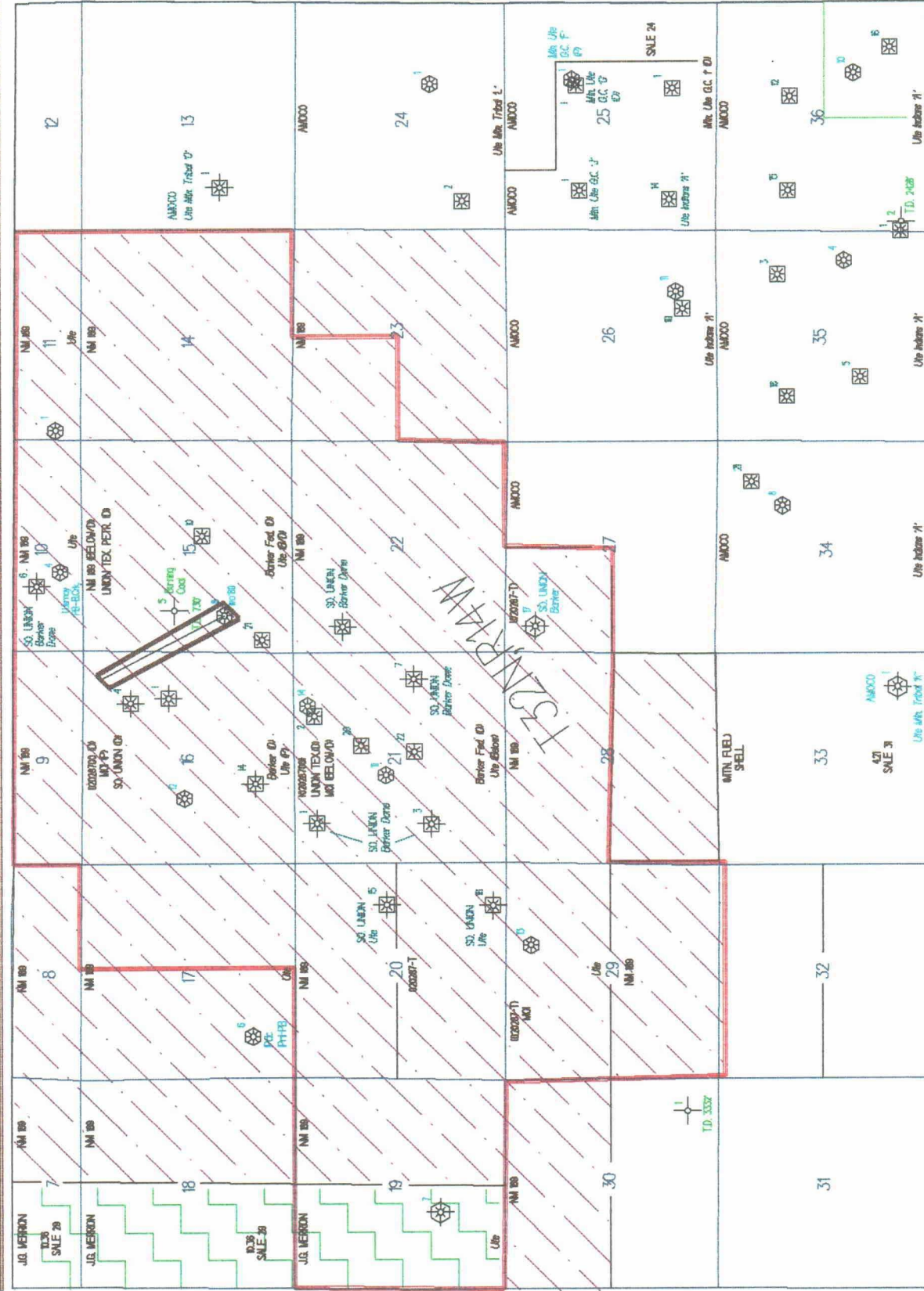
By: 
W. Thomas Kellahin
Post Office Box 2265
Santa Fe, New Mexico 87504
(505) 982-4285
Attorneys for Applicant

EXHIBIT A



Ute 8

Surface Location: 1750' FSL & 950' FWL Sec. 15-32N-14W

Bottom Hole Location: NE/4 NE/4 Sec. 16-32N-14W

Barker Creek Paradox Gas Pool

Order R-13, R-6421

M01 Leasehold 100% Consolidation Agreement 6/11/57

Unleased Ute Mountain Ute Tribe

EXHIBIT B

UTE #8 ST
T32N, R14W
SAN JUAN COUNTY, NM

DRILL BLOCK

PLAN VIEW

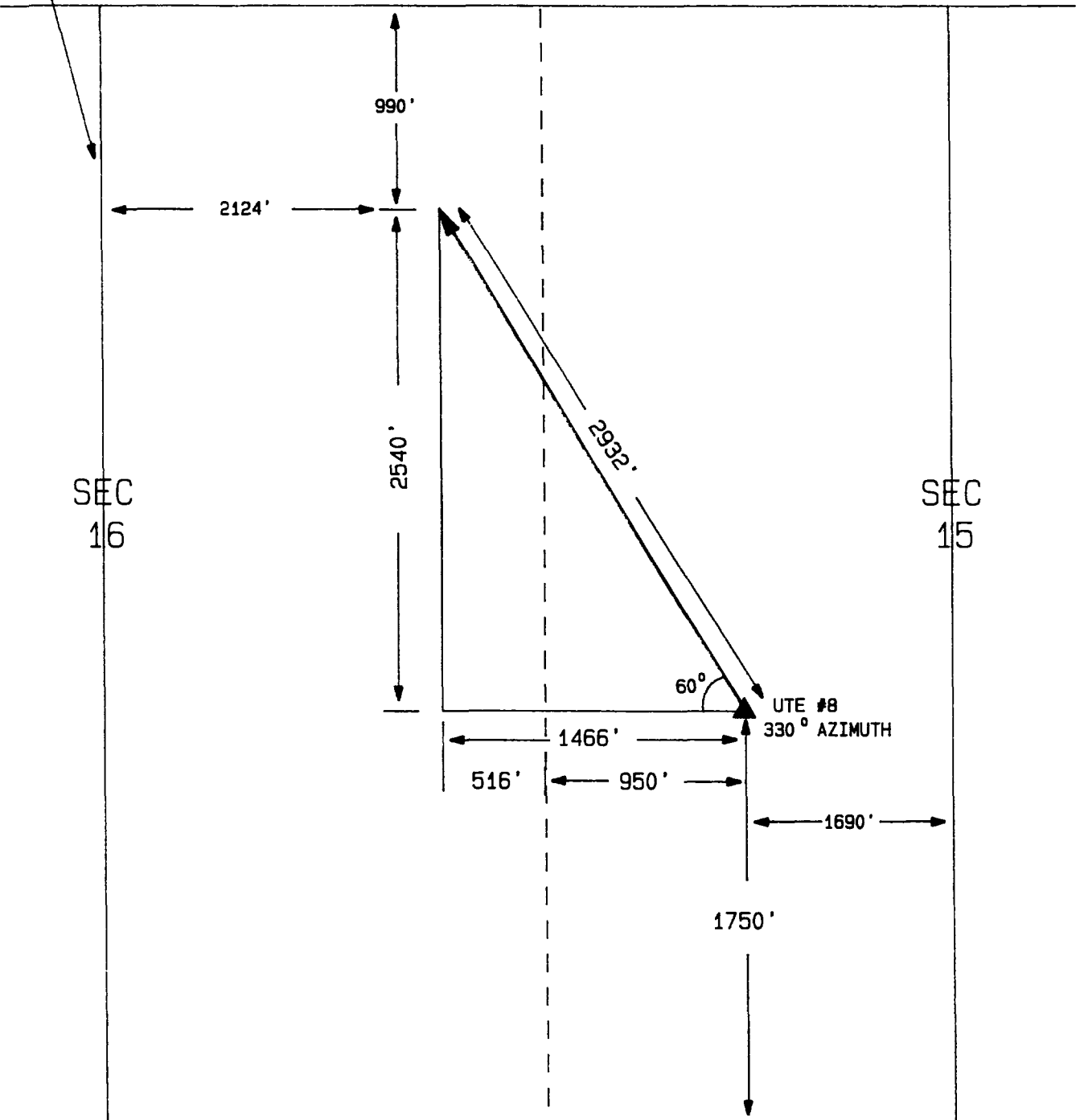


EXHIBIT "B"

AMM 04/01/93

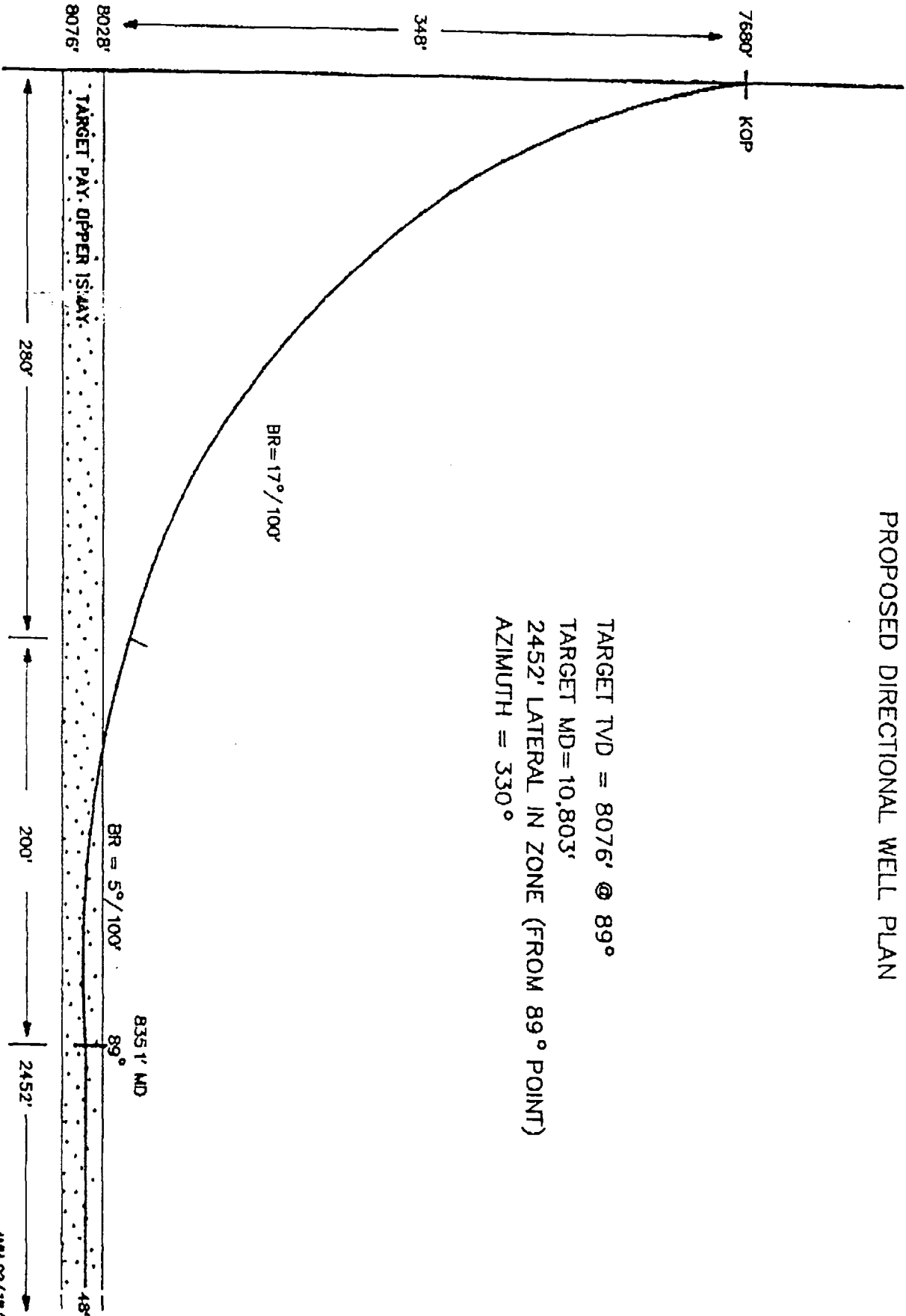
EXHIBIT C

EXHIBIT "C"

EXHIBIT "C"

UTE #8 (ST)

PROPOSED DIRECTIONAL WELL PLAN



MERIDIAN OIL

UTE #8 (SIDETRACK)
PROPOSED DIRECTIONAL WELL PLAN
San Juan Co., N.M.

J.M. HORNBECK
E.R. BAUER

DWG: C. GROTH
3/29/93

SE

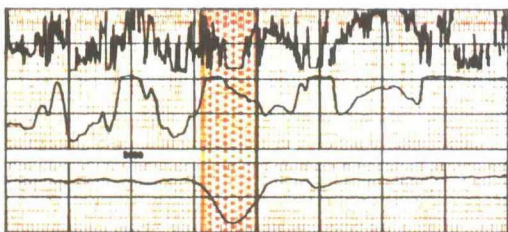
UTE #8
SW 15, T32N-R14W
San Juan Co., N.M.



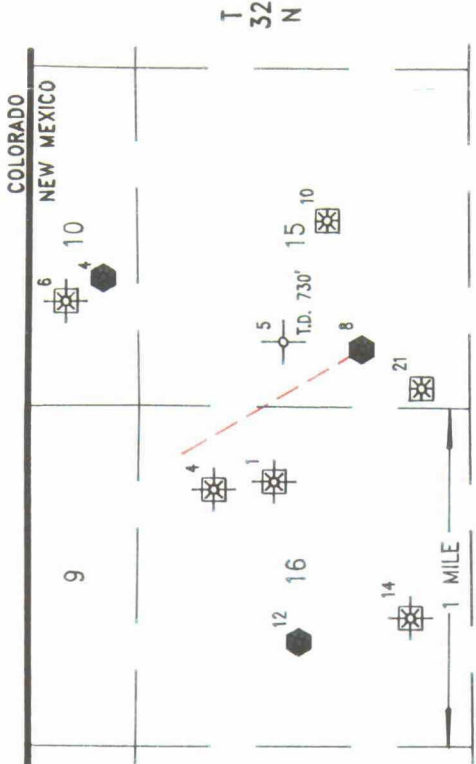
NW

T.V.D.
7700'

UTE #4
SW 10, T32N-R14W
San Juan Co., N.M.



TRUE VERTICAL DEPTH



● PENNSYLVANIAN TESTS
▣ DAKOTA TESTS

T.V.D.
0'

7700'

KICKOFF POINT @ 7680'

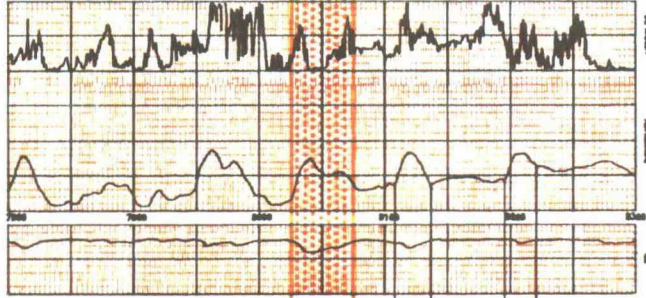
R14W

UTE #8

SW 15, T32N-R14W
San Juan Co., N.M.



SE



PARADOX FORMATION

UPPER ISMAY
LOWER ISMAY
DESERT CREEK

TRUE VERTICAL DEPTH

T.V.D.
7700'

7800'

7900'

8000'

8100'

8200'

3000

2800

2600

2400

2200

2000

1800

1600

1400

1200

1000

800

600

400

200

0

MEASURED DEPTH / LATERAL SECTION

EXHIBIT D

EXHIBIT "D"

Ute #8 Well
Sections 15 & 16, T32N, R14W, NMPM.

Ute Mountain Ute Tribe
ATTN; Mr. Craig Canfield
P.O. Box 42
Towaoc, Colorado 81334

Bureau of Indian Affairs
Ute Mountain Ute Agency
ATTN: Mr. Steve Graham
Towaoc, Colorado 81334

EXHIBIT E

L A P L

ALKAL FLCH W. 81

REAR MES. 24

CINDER BUTTES. 66

COLORADO
NEW MEXICO

BARKER CREEK DOME
CUM = 220+ BCFG
17 PENN.
TESTS

CONSOLIDATION
AREA

UTE #8

BTE DOME. 21

LA PLATA. 59

VERBE. 55

CONNER. 75 (Abnd)

R15W

R14W

BARKER CREEK DOME
STRUCTURE : T / DESERT CREEK

C.I. = 100'

1 MILE

EXHIBIT F

UPPER ISMAY

PROPOSED
HORIZONTAL
SIDETRACK
TARGET

PENNSYLVANIAN

PARADOX FORMATION

HERNOSA GRP.

PINKERTON TRAIL FM.

ISMAY

DESERT CRK.

AKAH

BARKER CREEK

ALKALI GULCH

SP

RESISTIVITY

UTE 8
SW 15-32N-
SAN JUAN CO
N.M.

TYPE LOG

(-2120') STRUCTURAL DAT

I.P. - 19,300 MCF
AOP - 400,000 MCF
LD - 24000 MCF

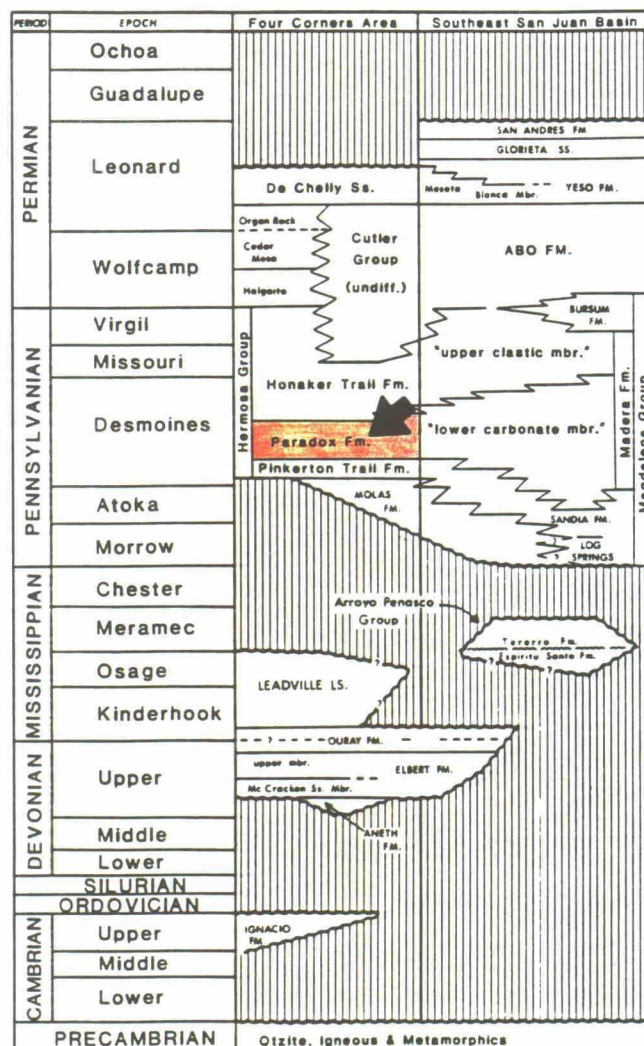
B.R. 8750

(Alkali Sulph zones
produced until 9/62)

P.B.T.D. 8900

Cum Prod. 19,159,429 MCF

- FIG -



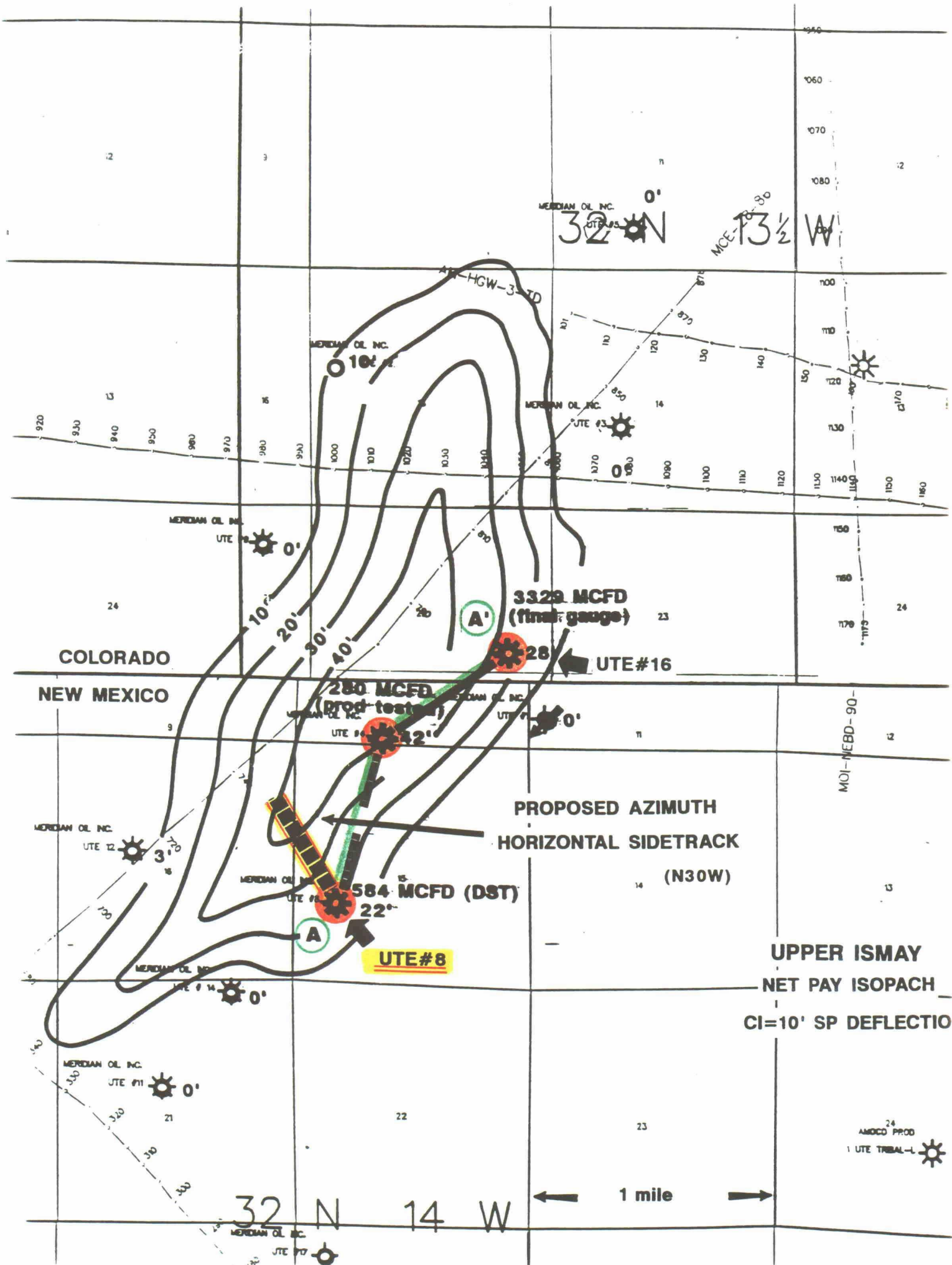
Paleozoic Correlation Chart
of the Four Corners Region.



Correlation chart of Paleozoic rock units in the Paradox Basin in southeastern Utah with Paleozoic rock units in the San Juan Basin in northwestern New Mexico.

STRATIGRAPHIC CORRELATION CHART

EXHIBIT G



← SOUTH

NORTHEAST →

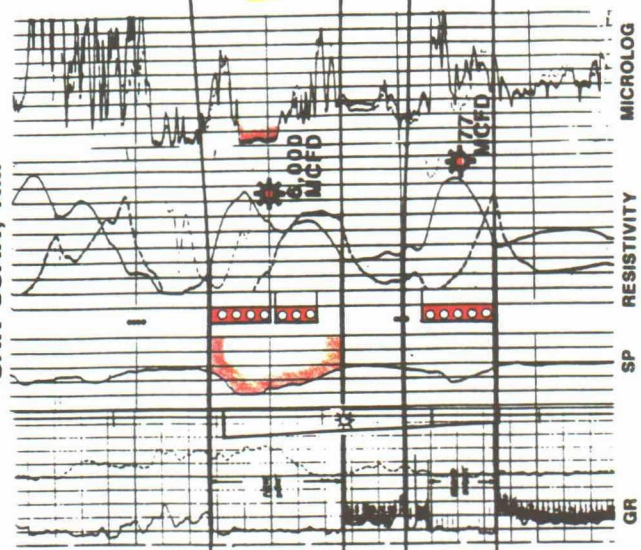
A

A'



UTE #8

SW 15-32N-14W
SAN JUAN, NM



AUGUST, 1951: Open hole DST, 8033'-8136'; GTS in 24 min
584 MCFD, FP=975# (105 min),
SIP=3375# (30 min), rec 1000',
water cushion 460' GLM.

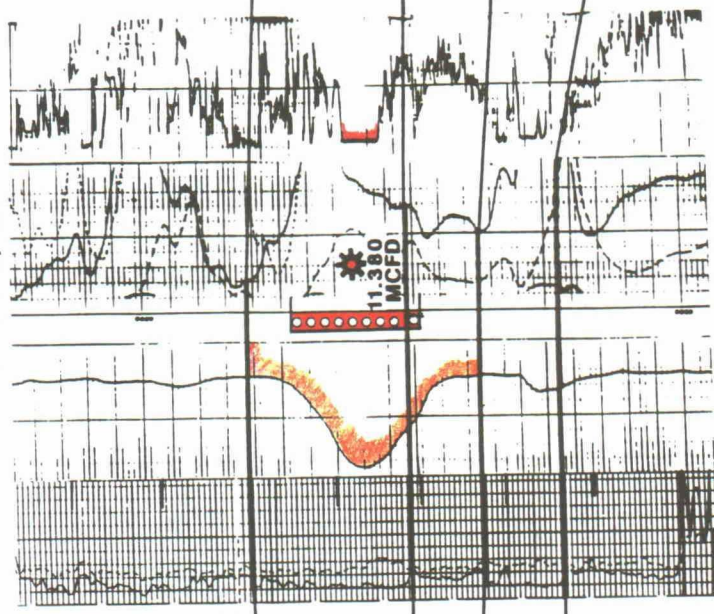
MAY, 1990: Plugback perforations:

Upper Ismay, 8032'-49', 8053'-68'
acidized w/5500 gal 15%, approx.
6,000 MCFD 1 day after acidizing
BHSIP= 3367# (48 hrs.)
Lower Ismay, 8110'-34', acidized w/2900
gal 15%, swabbed well, 77 MCFD,
BHSIP=2706# (65 hrs.) still building
at 18#/hr.



UTE #4

SW 10-32N-14W
SAN JUAN, NM



APRIL, 1949: Case hole DST: perf'd 8674'-88', 280
MCFD (3 hrs), natural, SICP=3300#
(20 min), squeezed perfs.

MAY, 1992: Plugback perforations:

Upper Ismay, 8654'-8702', acidize
w/10,000 gal 20%, 11,380 MCFD.



UTE #16

SE 22-32N-13 1/2 W
LA PLATA, COLO.



GR SP NEUTRON DENSITY

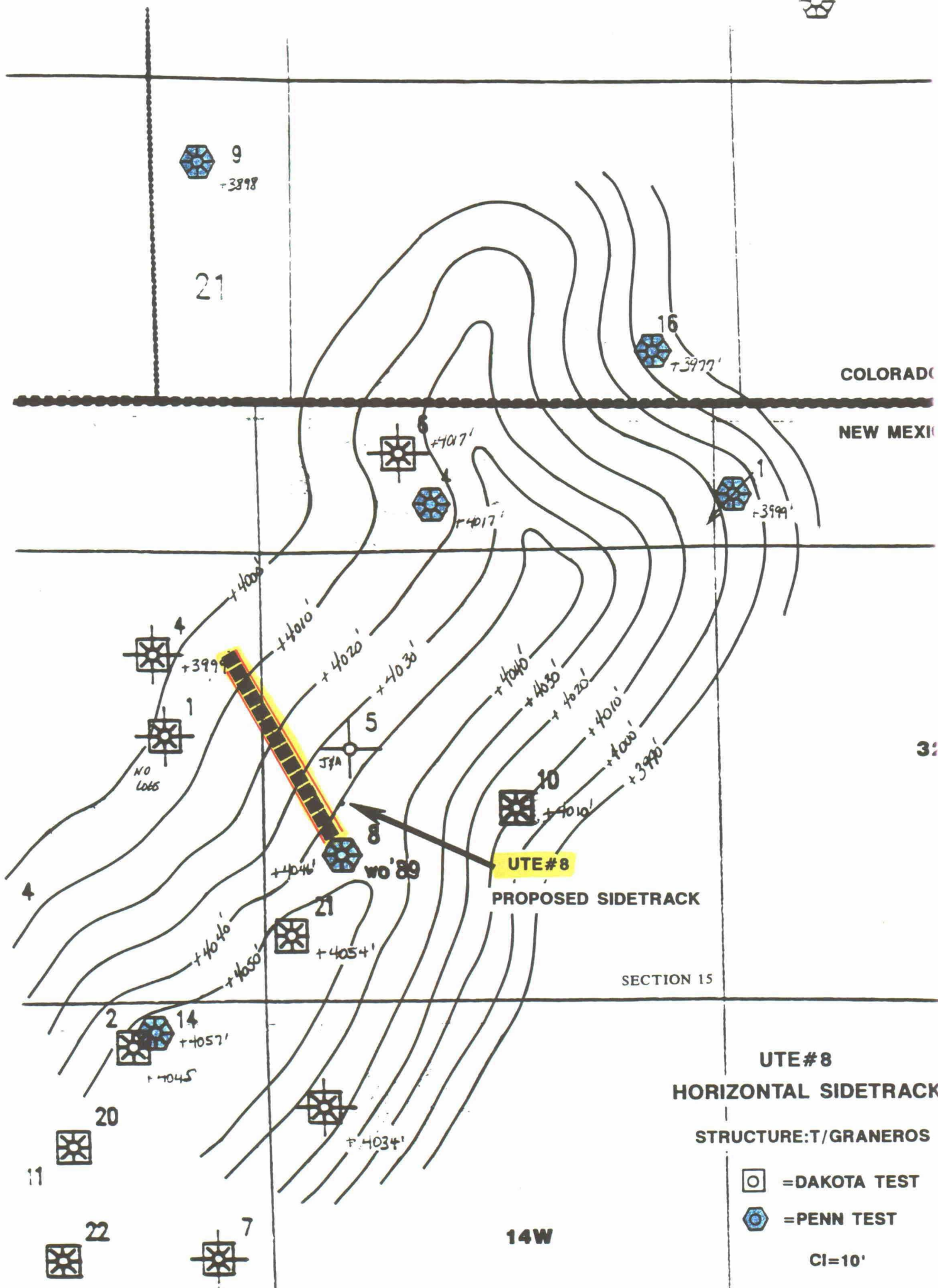
DECEMBER, 1991: Perforations

Upper Ismay, 8502'-55', acidize
w/5850 gal 20%, gauge 3329 MCFD
Lower Ismay, 8609'-34', acidize
w/4875 gal 20%, gauge 2638 MCFD
[comingled, final gauge 7887 MCFD]



STRATIGRAPHIC CROSS SECTION A-A'

FIG.

EXHIBIT H



UTE #8
HORIZONTAL SIDETRACK
STRUCTURE: T/GRANEROS

-  = DAKOTA TEST
-  = PENN TEST
- CI=10'

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED
BY THE OIL CONSERVATION DIVISION
FOR THE PURPOSE OF CONSIDERING:

CASE NO. 10702

APPLICATION OF MERIDIAN OIL INC. FOR
A HIGH ANGLE/HORIZONTAL DIRECTIONAL
DRILLING PILOT PROJECT, SPECIAL OPERATING
RULES, AN UNORTHODOX GAS WELL LOCATION
AND A NON-STANDARD OIL PRORATION UNIT,
SAN JUAN COUNTY, NEW MEXICO

CERTIFICATE OF MAILING


AND

COMPLIANCE WITH ORDER R-8054

W. THOMAS KELLAHIN, attorney in fact and authorized representative of MERIDIAN OIL INC., states that the notice provisions of Division Rule 1207 (Order R-8054) have been complied with, that Applicant has caused to be conducted a good faith diligent effort to find the correct addresses of all interested parties entitled to receive notice, that on MARCH 16, 1993, I caused to be mailed by certified mail return-receipt requested notice of this hearing and a copy of the application for the above referenced case along with the cover letter, at least twenty days prior to the hearing set for APRIL 8, 1993, to the parties shown in the application as evidenced by the attached copies of return receipt cards, and that pursuant to Division Rule 1207, notice has been given at the correct addresses provided by such rule.


W. Thomas Kellahin

SUBSCRIBED AND SWORN to before me this 6TH day of
April, 1993.


Notary Public-Jay C. Laubscher

My Commission Expires:

10/7/95

cert406.330

BEFORE EXAMINER CATANACH	
OIL CONSERVATION DIVISION	
<u>Meridian</u>	EXHIBIT NO. <u>I</u>
CASE NO. <u>10702</u>	

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Ute Mountain Ute Tribe
ATTN: Craig Canfield
P.O. Box 42
Towaoc, CO 81334

4a. Article Number

P133 832 266

4b. Service Type

- ☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

03/18/93

5. Signature (Addressee)

Craig Canfield

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1991 U.S.G.P.O.: 1992-307-530

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
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3. Article Addressed to:

Bureau of Indian Affairs
Ute Mountain Ute Agency
ATTN: Mr. Steve Graham
Towaoc, CO 81334

4a. Article Number

P133 832 267

4b. Service Type

- ☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

03/18/93

5. Signature (Addressee)

Maile Lee

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1991 ☆ U.S.G.P.O.: 1992-307-530

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.