

DATE 1/27/03	DATE 2/16/03	ENGINEER WVT	LOGGED IN KV	TYPE NSL	APPROVAL APR 03 02840640
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication

☒ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement

☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
 U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

WALTER DUEASE

Print or Type Name

Walter D. Duesee, Jr.

Signature

Regulatory Affairs

Title

1/24/03

Date

wjducase@marathonoil.com

e-mail Address



P.O. Box 552
Midland, TX 79702-0552
Telephone 915/682-1626

January 23, 2003

Mr. Richard Ezeanyim
Oil Conservation Division
1220 S. St. Francis Dr.
Santa Fe, New Mexico 87504

RE: Indian Hills Unit Gas Com Well No. 38 Unorthodox Location
2333' FSL & 2020' FEL, Sec. 29, Township 21 South, Range 24 East (SHL),
965 930' FSL & 2440' FWL, Sec. 29, Township 21 South, Range 24 East (BHL)
Indian Basin Upper Pennsylvanian Associated Pool

Dear Mr. Ezeanyim,

By means of this application, Marathon Oil Company respectfully requests administrative approval for a non-standard location for the proposed Indian Hills Unit Gas Com Well No. 38 with a surface location of 2333' FSL & 2020' FEL, Section 29, Township 21 South, Range 24 East, and a bottom hole location of 965' FSL & 2445' FWL, Section 29, Township 21 South, Range 24 East, and to be dedicated to a standard 320 acre spacing unit consisting of the West half of Section 29. Marathon is proposing to directionally drill this well to an unorthodox location in the Upper Pennsylvanian formation.

Marathon proposes to complete the Indian Hills Unit Gas Com Well No. 38 in the "Indian Basin Upper Pennsylvanian Associated Pool" as promulgated by the New Mexico Oil Conservation Division Order Nos. R-9922, R-9922-A, R-9922-B, R-9922-C, R-9922-D and R-9922-E and the general rules for the Associated Gas Pools of Southeast New Mexico as promulgated by Division Order No. R-5353. These rules require wells to be located no closer than 660' to the outer boundary of the proration/spacing unit and no closer than 330' to the governmental quarter/quarter section line. Indian Hills Unit Gas Com Well No. 38 location is unorthodox because the producing interval and the bottom hole location infringe upon the 660 foot setback from the eastern outer boundary of the 320 acre "stand-up" gas proration unit dedicated to the West half of Section 29 (please see Attachment #1A - Well Location and Acreage Dedication Plats, Attachment #1B - Section 29 Quarter, Quarter Distance Map, Attachment #2 - Location Verification Map and Attachment #3 - Vicinity Map). Based on the proposed directional plan, it is expected that the top of the Upper Pennsylvanian formation will be penetrated at 1198' FSL & 2622' FWL in Section 29, (please see Attachment #4 - Directional Plat supplied by Baker Inteq, Marathon's proposed directional drilling company for the well).

Participating Area:

The proposed well is located within the Indian Hills Unit Upper Pennsylvanian Participating Area (see Attachment #5). The Indian Hills Unit is operated by Marathon Oil Company. Indian Hills Unit Gas Com Well No. 38 is proposed to be dedicated to a proration unit consisting of the West half of Section 29, Township 21 South, Range 24 East. The ownership of the West half 320 acre proration unit is identical to the East half of Section 29 which offsets the proposed unorthodox location in the Upper Pennsylvanian formation. Marathon Oil Company has a 93.32385%

working interest in both the West and East halves of Section 29. Attachment #6 "Working Interest Ownership of Section 29" details the complete ownership of all working interest owners for this section.

Directional Wellbore:


The Indian Hills Unit Gas Com Well No. 38 is proposed as a directionally drilled wellbore. Marathon's development of East Indian Basin has relied heavily on directionally drilled wellbores due to the extreme topographical relief in the Seven Rivers Hills and Azotea Mesa plateaus (please see Attachment #7 - "East Indian Basin" Topographical Map). As a result, there are only a few wells that have been able to be drilled vertically to a standard target. A BLM surface use specialist performed an onsite inspection and all locations for a standard vertical wellbore in the S/2, SW/4 (UL "M" and "N") in Section 29 were condemned due to topographical constraints and habitat destruction for access roads and rights of way. The S/2 of the SW/4 of section 29, T-21-S, R-24-E is characterized by steep topographic features identified as "The Tepee" and a northwest - southeast trending arroyo that courses into Rocky Arroyo. Efforts to locate a suitable standard location in the south half of section 29 have been condemned due to directives by the BLM in the Carlsbad Resource Management Plan Amendment and Record of Decision, October 1997 which restricts construction on slopes greater than 20% and proximity of the 100 year floodplain of Rocky Arroyo. We are advised by the BLM to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of the floodplain development wherever there is a practical alternative. This portion of section 29 also falls within the viewshed of NM state highway 137, which has been designated as a Scenic By-Way by the state of New Mexico, and a Back Country Road by the BLM. Guidelines for these designations prohibit significant surface disturbance and require an effort to maintain the visual resources in as pristine a quality as possible. "The Tepee" conceals the proposed surface location and related separation facilities from the viewing public.

Geologic Issues:

The Indian Basin Upper Pennsylvanian Associated Pool is predominantly composed of dolomite and limestone sequences. With current technology, only the dolomite sequences have proved productive and economic. The proposed location for the Indian Hills Unit Gas Com Well No. 38 is expected to encounter minimal limestone because of dolomitic facies in all offsetting wells. Furthermore, the proposed penetration point at 1198' FSL & 2622' FWL in Section 29 is structurally equivalent to a standard vertical wellbore in the SE/4, SW/4. By moving the bottom hole location further to the east in the quarter section (downdip) and requesting an unorthodox location, we expect to encounter the oil pay reservoir at a higher stratigraphic position, within the upper Canyon where the best reservoir characteristics (porosity, permeability) are found.

The attached structural cross section is oriented west - east. It is located parallel and less than 1000' south of the section 29 south line, thus in the vicinity of the proposed Indian Hills Unit # 38 BHL. The cross section includes pink colored intervals that indicate porosity development. The cross section indicates a local increase in pay thickness as we move from the west (IB State 32 # 4) to the east (Indian Hills Unit # 22).

Reservoir Management Plan:

 There are currently two (2) wells, the Indian Hills Unit Gas Com Well Nos. 3 (API #30-015-10553) and 13 (API #30-015-30274), that produce from the Indian Basin Upper Pennsylvanian Associated Pool in the West half of Section 29.

The East half of Section 29 currently has two (2) producing Upper Pennsylvanian wells, the Indian Hills Unit Gas Com Well Nos. 27 (API #30-015-31406) and 14 (API #30-015-30624). In

addition, the Indian Hills Unit Gas Com Well No. 47 is proposed to be directionally drilled in the first quarter of 2003 at the following surface hole location: 2316' FSL & 2004' FEL, Section 29, Township 21 South, Range 24 East to a bottom hole location at 700' FSL & 700 FEL, Section 29, Township 21 South, Range 24 East (BHL).

Marathon is entering its final anticipated infill development phase of the Indian Basin Upper Pennsylvanian Associated Gas Pool. The objective of this program is to infill drill the oil column from the current ~160-acre well density to an ~80-acre well density. It is Marathon's belief that the oil zone should be developed on tighter spacing than the current ~160 acre development of the gas zone. The proposed ~80-acre infill program will improve oil recovery while minimizing both economic and reservoir waste.

Based on an 80-acre drainage radius of the existing wells, the proposed location balances the distance between the BHL's of existing wells. Attachment 8 is a structure map showing 80-acre drainage areas around all of the current and future Upper Pennsylvanian producers. With the placement of the proposed Indian Hills Unit # 38 BHL, Marathon can maximize and adequately drain reserves from Section 29.

It is Marathon's belief that the proposed unorthodox location represents a superior location in regard to optimal reservoir drainage. The BHL of the Upper Pennsylvanian in the Indian Hills Unit Gas Com Well No. 38 provides a well balanced and near equal inter-well spacing between the existing wells. This 'equal' inter-well spacing will minimize well-to-well interference and hence maximize reserve recovery.

Notifications:

It is Marathon's understanding that since the working interest and mineral ownership is the same in the gas proration unit for the proposed well and the affected offset gas proration unit, no waivers or notifications to offset owners are required.

Should you have any questions/comments/concerns, please contact me at (800) 351-1417.

Respectfully,

A handwritten signature in black ink, appearing to read "Walter Dueease", written in a cursive style.

Walter Dueease

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102

Revised February 10, 1994

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
P.O. BOX 2088, SANTA FE, N.M. 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
	33685	Indian Basin Upper Penn. Assoc.
Property Code	Property Name	Well Number
	INDIAN HILLS UNIT GAS COM.	38
OGRID No.	Operator Name	Elevation
14021	MARATHON OIL COMPANY	3775'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	29	21-S	24-E		2333'	SOUTH	2020'	EAST	EDDY

Bottom Hole Location If Different From Surface

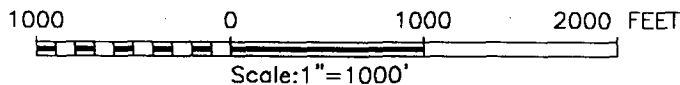
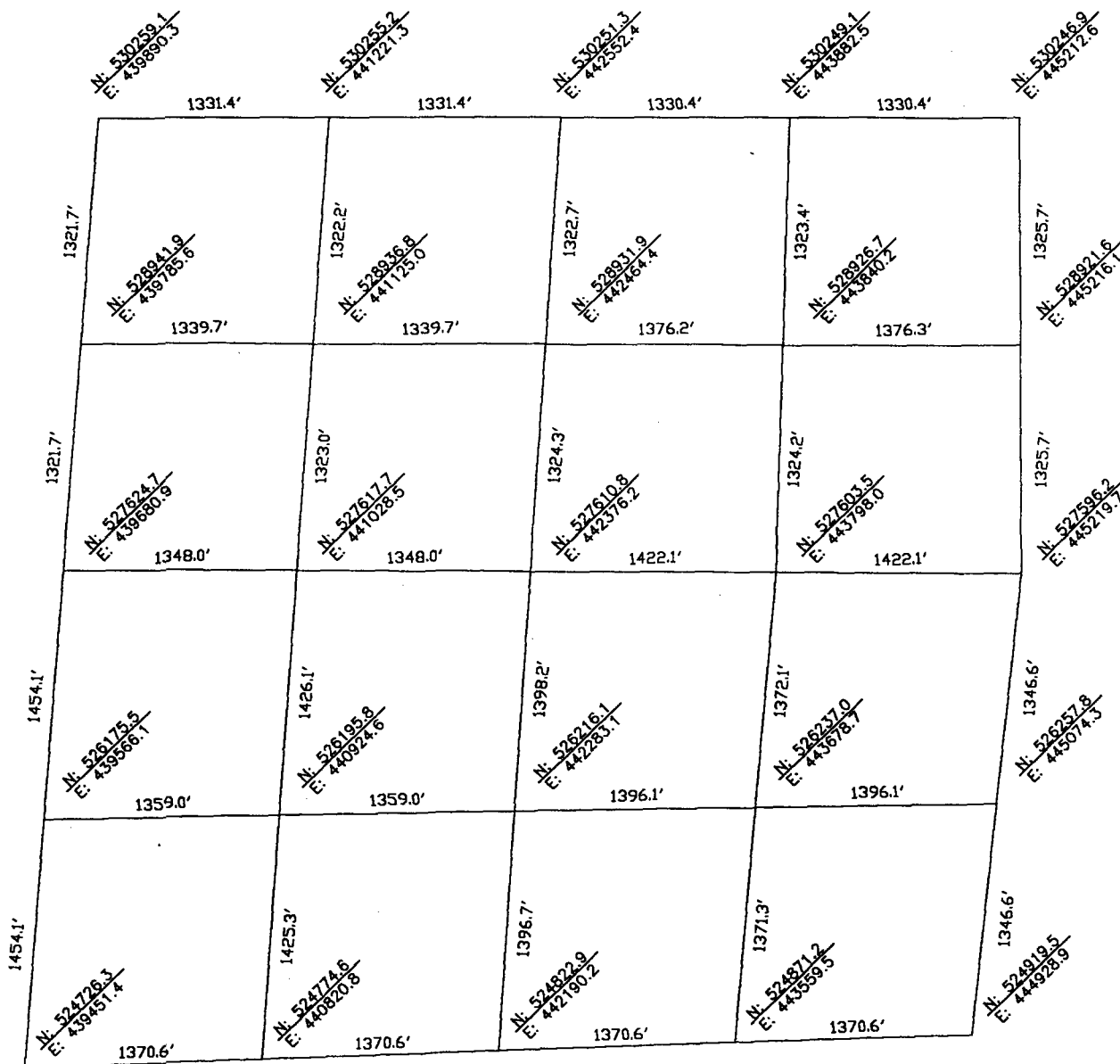
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	29	21-S	24-E		965'	SOUTH	2445'	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320 W/2			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Jerry Fletcher</i> Signature Jerry Fletcher Printed Name Engineer Tech. Title 1/22/03 Date</p> <p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>SEPTEMBER 20, 2002</p> <p>Date Surveyed Signature & Seal of Professional Surveyor GARY EIDSON 02.11.0578 Certificate No. RONALD J. EIDSON 3239 GARY EIDSON 12841</p>
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SECTION 29, TOWNSHIP 21 SOUTH, RANGE 24 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



NOTE:
DISTANCES ARE SURFACE VALUES.
COORDINATE VALUES ARE RELATIVE
TO THE NEW MEXICO COORDINATE
SYSTEM, EAST ZONE, NAD 27

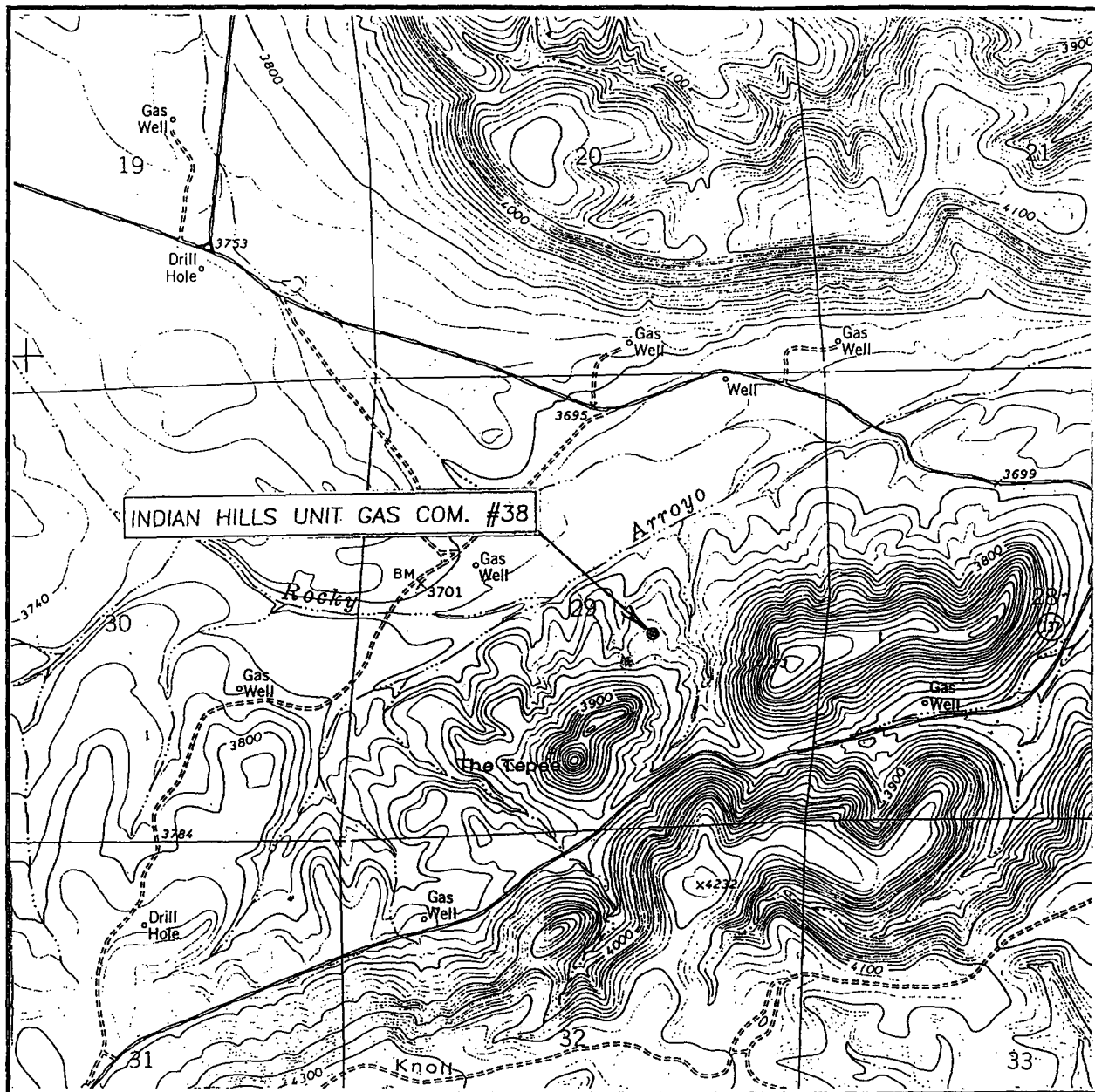
MARATHON OIL COMPANY

SECTION 29, TOWNSHIP 21 SOUTH, RANGE 24 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: N/A	Sheet 1 of 1 Sheets
W.O. Number: 02.13.0854	Drawn By: A.W.B
Date: 11/11/02	DISK: CD#8
MARATHON	Scale: 1"=1000'

JOHN WEST SURVEYING COMPANY
412 N. DAL PASO - HOBBS, NEW MEXICO - 505-393-3117

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 20'
MARTHA CREEK, N.M

SEC. 29 TWP. 21-S RGE. 24-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 2333' FSL 2020' FEL

ELEVATION 3775'

OPERATOR MARATHON OIL COMPANY

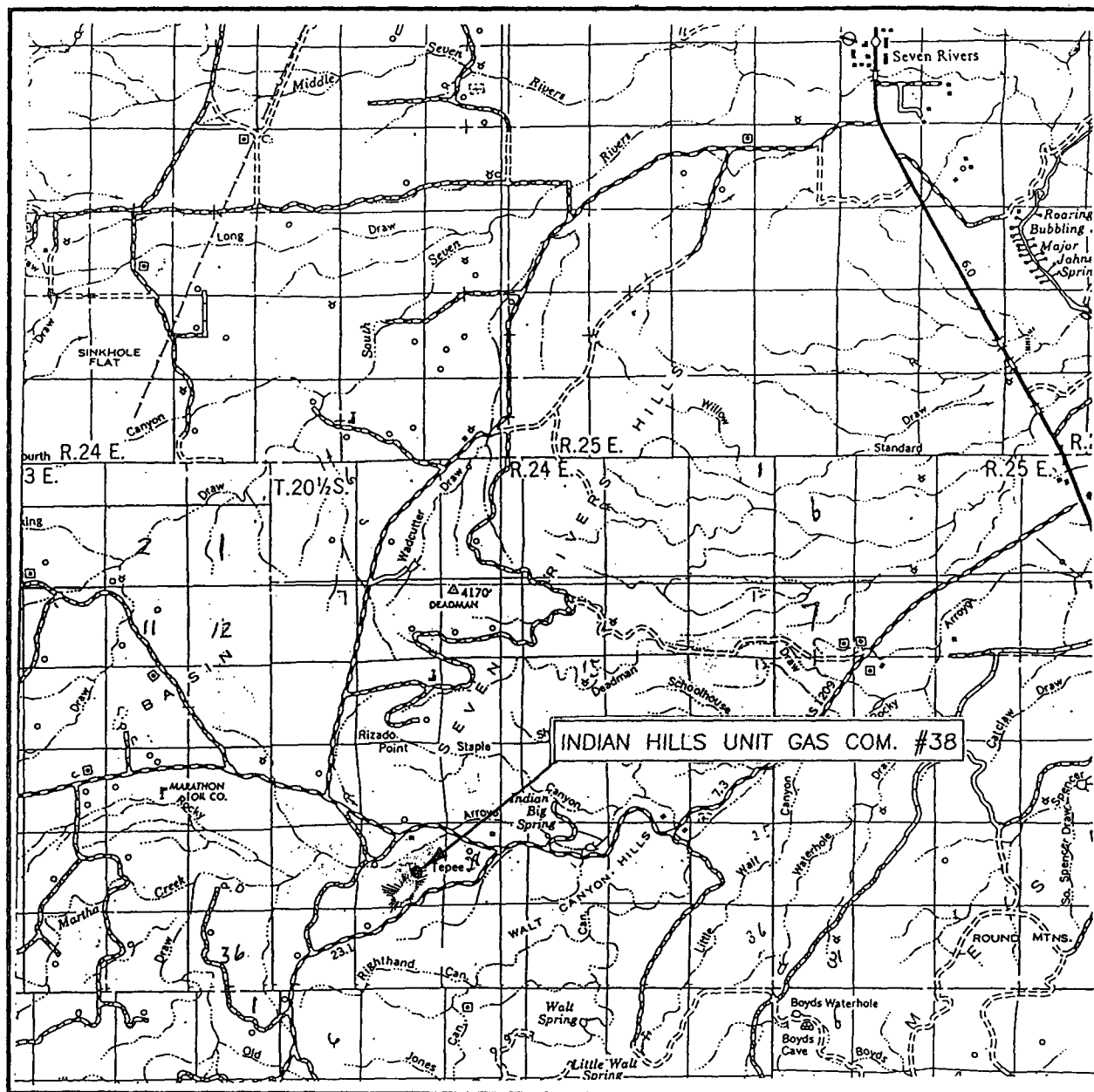
LEASE INDIAN HILLS UNIT

U.S.G.S. TOPOGRAPHIC MAP

MARTHA CREEK, N.M

JOHN WEST SURVEYING
HOBBS, NEW MEXICO
(505) 393-3117

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 29 TWP. 21-S RGE. 24-ESURVEY N.M.P.M.COUNTY EDDYDESCRIPTION 2333' FSL 2020' FELELEVATION 3775'OPERATOR MARATHON OIL COMPANYLEASE INDIAN HILLS UNIT

JOHN WEST SURVEYING
 HOBBS, NEW MEXICO
 (505) 393-3117

Marathon Oil Company

Structure : Indian Hills Unit 38

Slot : slot #1

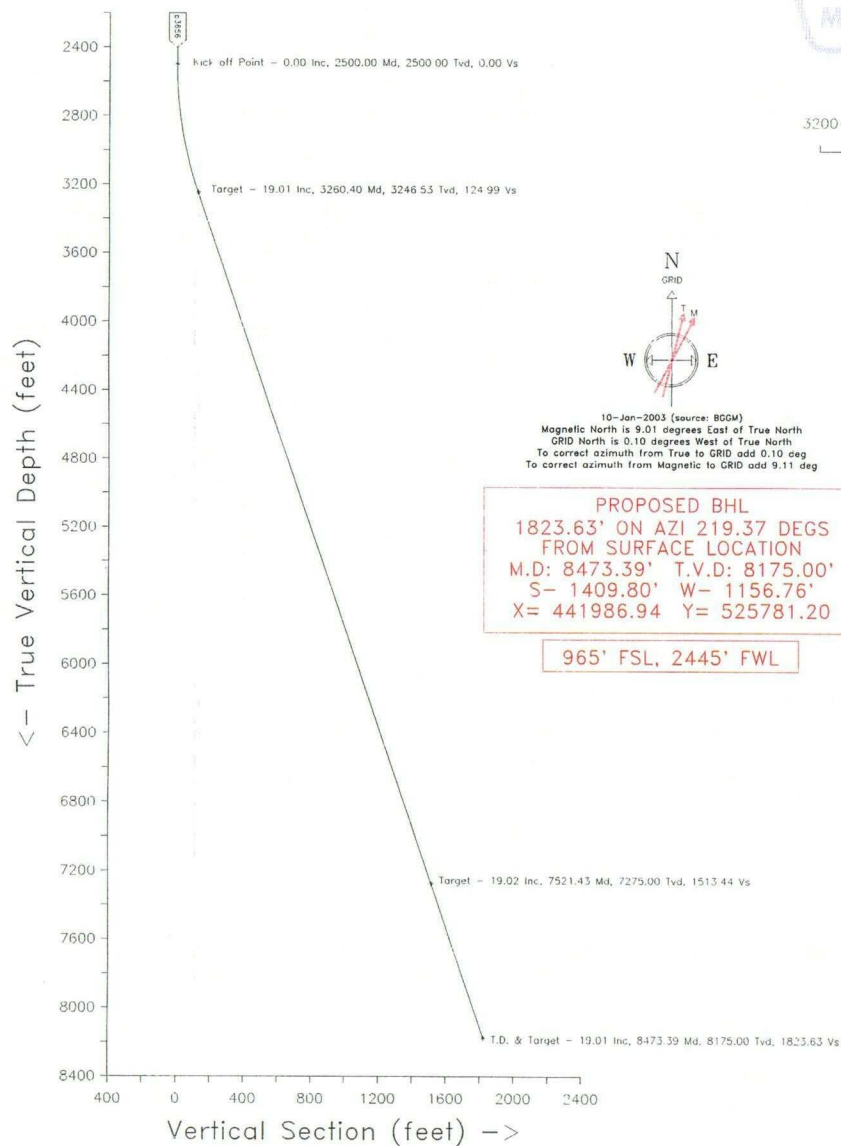
Field : INDIAN BASIN

Location : Eddy County New Mexico

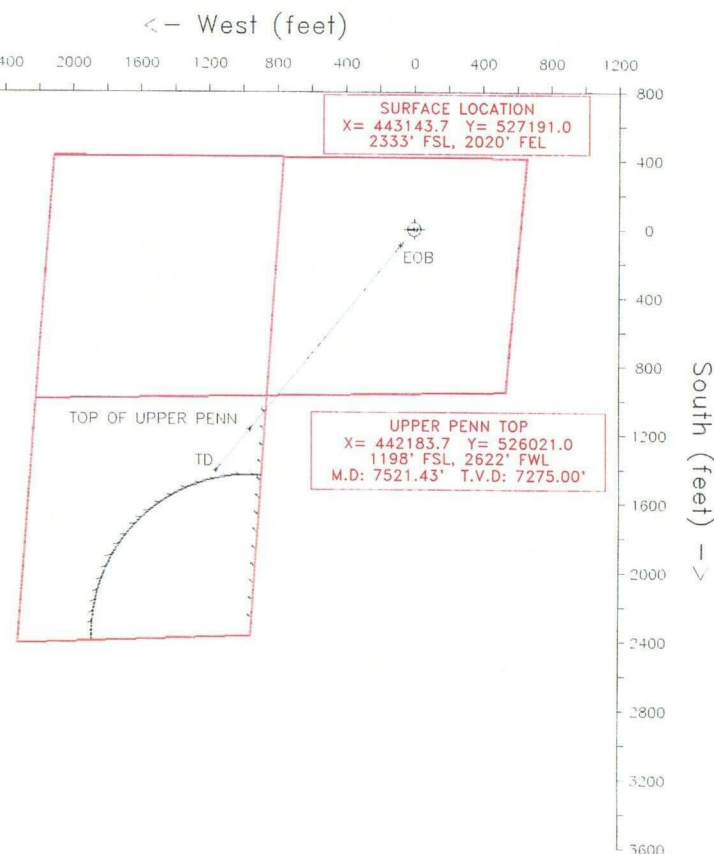


INTEQ

Created By kellym
Date plotted : 10-Jan-2003
Plot Reference is Plan 2 1/10/03.
Coordinates are in feet reference slot #1.
True Vertical Depths are reference rotary table.
ihu38ll
--- Baker Hughes INTEQ ---



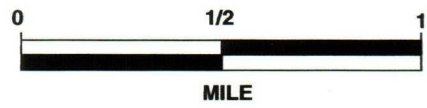
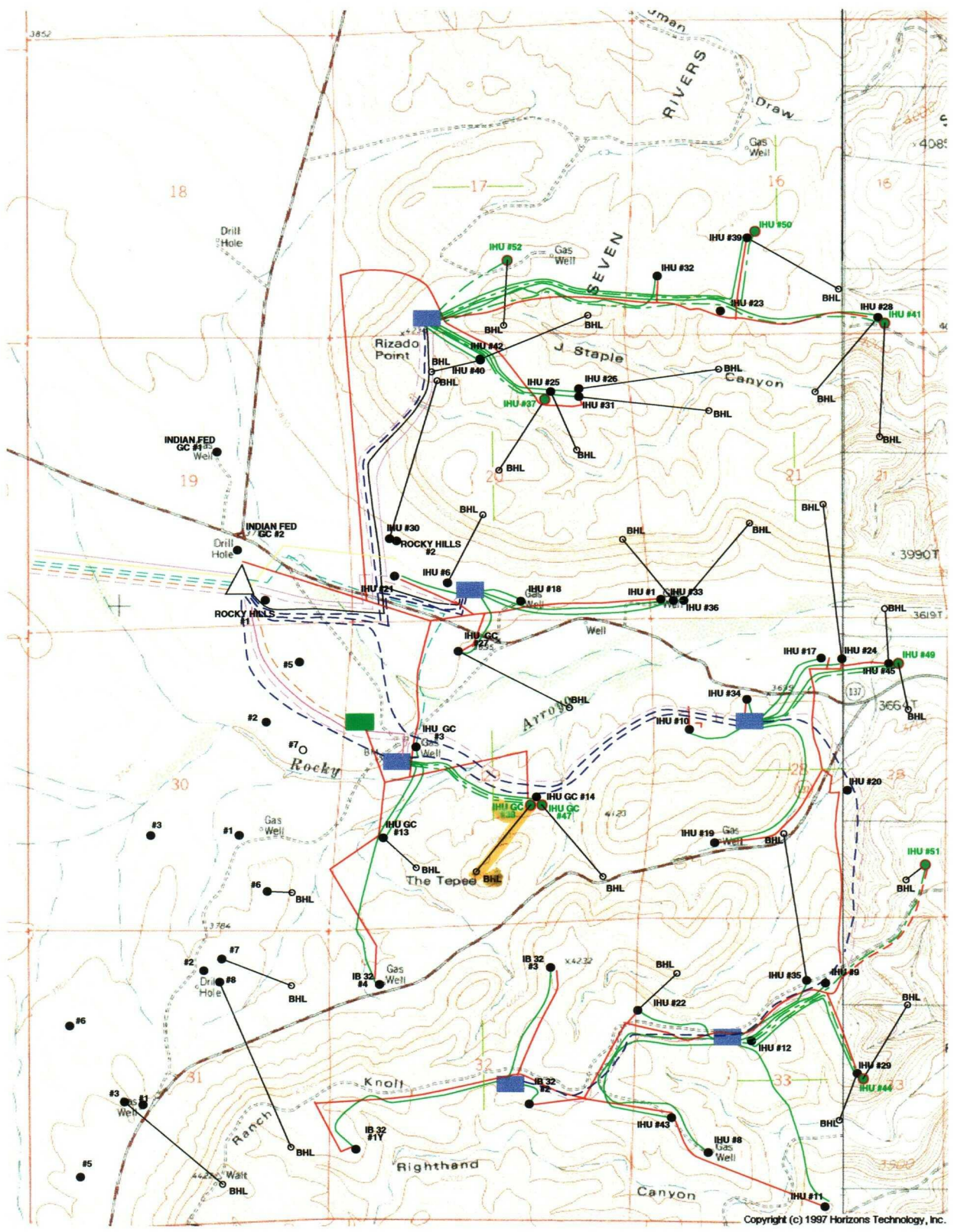
Azimuth 219.37 with reference 0.00 N, 0.00 E from slot #1



WELL PROFILE DATA								
Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100
Tie on	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP	2500.00	0.00	219.37	2500.00	0.00	0.00	0.00	0.00
Target EOB	3260.40	19.01	219.37	3246.53	-96.63	-79.28	124.99	2.50
Target TOP OF UPPER PE	7521.43	19.02	219.37	7275.00	-1170.00	-960.00	1513.44	0.00
T.D. & Target TD	8473.39	19.01	219.37	8175.00	-1409.80	-1156.76	1823.63	0.00

Working Interest Ownership of Section 29

Marathon Oil Company	93.32385%
Claremont Corporation	1.40937%
Texas Independent Exploration	1.28125%
Tandem Energy Corporation	1.28125%
Devon Energy	1.15313%
Nolan Brunson, Jr.	0.56250%
Nearburg Exploration	0.42615%
H. Hanagan	0.28125%
Hanagan Properties	<u>0.28125%</u>
Total Working Interest	100.00%



MARATHON OIL COMPANY
SOUTHERN BUSINESS UNIT
EAST INDIAN BASIN
 EDDY COUNTY, NEW MEXICO

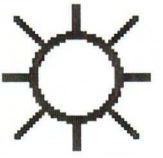


LEGEND	
	PRIMARILY OIL TARGETS
	80 ACRE AREA
	UPPER PENN INTERVAL

Marathon Oil Company		
INDIAN BASIN FIELD PROPOSED WELLS - 2003		
		11/11/2002
Ginny Larke	Scale 1:11662.18	80acre.GPF

IHU 38 PROPOSED LOCATION

1



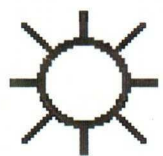
MARATHON OIL COMPANY
INDIAN BASIN 32 STATE 4

2



MARATHON OIL
INDIAN BASIN STATE 3-32

3



MARATHON OIL
INDIAN HILLS UNIT 22

