

DATE IN 1/14/02	SOURCE 2/3/02	ENGINEER MS	LOGGED IN RW	TYPE NSL	APP NO. 201555225
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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.

Print or Type Name

Signature

Attorney

Title

Date

KELLAHIN & KELLAHIN

Attorneys At Law

P.O. Box 2265

Santa Fe, N.M. 87504-2265

t.kellahin@worldnet.att.net

e-mail Address

1/14/02



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

January 11, 2002

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

***RE: Indian Hills Unit Well No. 42 Unorthodox Location  
475' FNL & 2522' FEL, Sec. 20, Township 21 South, Range 24 East (SHL),  
283' FSL & 142' FEL, Sec. 17, Township 21 South, Range 24 East (BHL)  
Indian Basin Upper Pennsylvanian Associated Pool***

Dear Mr. Stogner,

By means of this application, Marathon Oil Company respectfully requests non-standard location approval for the proposed Indian Hills Unit Well No. 42 with a surface location of 475' FNL & 2522' FEL, Section 20, Township 21 South, Range 24 East, and a bottom hole location of 283' FSL & 142' FEL, Section 17, Township 21 South, Range 24 East, and to be dedicated to a standard spacing unit consisting of the south half of Section 17. Marathon is proposing to drill this well to a primary unorthodox location in the Upper Pennsylvanian formation with secondary unorthodox locations in the Wolfcamp and Strawn formations. This will be a directionally drilled well.

Marathon proposes to complete the Indian Hills Unit Well No. 42 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, and R-9922-D and the general rules for the Associated Gas Pools of Southeast New Mexico as promulgated by Division Order No. R-5533. These rules require wells to be located no closer than 660 feet to the outer boundary of the proration/spacing unit and no closer than 330 feet to the governmental quarter/quarter section line. Indian Hills Unit Well No. 42 location is unorthodox because it is less than 660 feet from the southern and eastern outer boundary of the proposed 320-acre "lay-down" gas proration unit located in the south half of Section 17 (please see Attachment #1a, 1b, and 1c - Well Location and Acreage Dedication Plats for the Upper Pennsylvanian, Wolfcamp, and Strawn formations, respectively). Based on the proposed directional plan, it is expected that the top of the Upper Pennsylvanian formation will be penetrated at 134' FSL & 538' FEL in Section 17, and the base of the formation will be encountered at 203' FSL & 343' FEL in Section 17 (please see Attachment #2 - Directional Plat supplied by Baker Inteq, Marathon's proposed directional drilling company for the well).

The Indian Hills Unit Well No. 42 will also penetrate the Wolfcamp and Strawn formations. The Wolfcamp and Strawn formations are both secondary targets that may have hydrocarbon potential and could be completed after the Upper Pennsylvanian formation is depleted. The Wolfcamp penetration is classified as a wildcat test because the well is greater than 1 mile from any Wolfcamp pool (it appears that the closest Wolfcamp production is over four miles away in Unit Letter 'P' of Section 30, Township 20 South, Range 25 East). The Strawn penetration is classified as a development test because the well is less than one mile from the "Indian Basin Strawn Pool" as promulgated by the New Mexico Oil Conservation Division Order Nos. R-9844, R-10324, and R-10844. In either formation, a 660' setback is required from all outer boundaries. Indian Hills Unit Well No. 42 is unorthodox in both formations because it infringes upon the 660' outer boundary setback (see Attachment #2)

In support of this application, specific details will be provided for the proposed unorthodox location. These details will include the Participating Area surrounding this location, the purpose of the directional wellbore, how the well fits into Marathon's reservoir management plan, and why the proposed location is geologically superior to a standard location in Section 17.

### **Participating Area**

The proposed well is located within the Indian Hills Unit that is operated by Marathon. Indian Hills Unit Well No. 42 is proposed to be dedicated to a standard spacing unit consisting of the south half of Section 17, Township 21 South, Range 24 East. The ownership of the proposed spacing unit is identical to Sections 16, 20, and 21 which offset the proposed unorthodox location in the Wolfcamp, Upper Pennsylvanian, and Strawn formations. Marathon Oil Company has a 99.54544% working interest while Nearburg Exploration has a 0.45456% working interest.

In early December 2001, Marathon applied to expand the Indian Hills Unit Upper Pennsylvanian Participating Area to include the south half of Sections 16 and 17, Township 21 South, Range 24 East (please see Attachment #3 – Indian Hills Unit Upper Pennsylvanian Participating Area). Attachment #3 shows the unit boundary, the existing Upper Pennsylvanian Participating Area as well as the proposed Upper Pennsylvanian Participating Area (Marathon expects the expansion of the Participating Area to be approved by late January). It should be noted that Section 17 is referred to as the Indian Hills Unit Gas Com 'A' because of a communitization agreement that only covers the Morrow formation. When the Indian Hills Unit was originally formed, the 40-acre tract (which includes all depths) in Unit Letter 'F' of Section 17 did not enter into the unit and today remains separate from the unit. The communitization agreement was required for the Morrow in 1968, when the Indian Hills Unit Gas Com. 'A' No. 6 was re-entered and ultimately completed in the Morrow after a failed Upper Pennsylvanian test in 1967. The 40-acre tract has continued to remain separate from the unit.

There is currently no communitization agreement for the Upper Pennsylvanian formation in Section 17, nor is one required for the proposed standard, 320-acre spacing unit in the south half of the section. Finally, there is currently no Participating Area in the Indian Hills Unit for the Wolfcamp or Strawn formation. At such time that a potential recompletion is proven commercial, Marathon will have a new Participating Area established.

### **Directional Wellbore:**

The Indian Hills Unit Well No. 42 is proposed as a directionally drilled wellbore. Marathon's development of Sections 16, 17, 20, and 21, Township 21 South, Range 24 East, has relied heavily on directionally drilled wellbores because of the high topographical relief caused by the Seven Rivers Azotea Mesa (please see Attachment #3A – "East Indian Basin" Topographical Map). As a result, there are only a few wells on the Mesa that have been able to be drilled vertically to a standard target. The only surface location Marathon was able to find for a vertical well in the southeast quarter of Section 17 was very close to the Indian Hills Unit Gas Com. 'A' Well No. 6. As that well was a dry hole in the Upper Pennsylvanian formation (please see the Geology section below), the location was deemed unacceptable. In an effort to minimize surface disturbance of the Mesa, Marathon and the BLM found the proposed surface location that can be used to drill two wells. Marathon plans to directionally drill the Indian Hills Unit Well No. 40 from a surface location approximately 24' southeast of the Indian Hills Unit Well No. 42 surface location.

### **Reservoir Management Plan:**

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.

It is Marathon's belief that the proposed unorthodox location represents a superior location in regards to both reservoir drainage and geologic risk (discussed below). The BHL of the Upper Pennsylvanian in Indian Hills Unit Well No. 42 provides a well balanced and near equal inter-well spacing between the existing Indian Hills Unit Well Nos. 25, 26, 31, 32, and the planned 2002 drill well Indian Hills Unit Well No. 40 (please see Attachment #4 – Indian Basin Field, Proposed Wells for 2002). This 'equal' inter-well spacing will minimize well-to-well interference and hence maximize reserves recovery.

Marathon has also requested unorthodox location approval for the Wolfcamp and Strawn formations because there is a possibility these formations could have productive intervals



in Indian Hills Unit Well No. 42. The potential of encountering a productive Wolfcamp carries a high risk factor. Marathon has strong geologic control of the Wolfcamp because it overlies the Upper Pennsylvanian formation. Only Indian Hills Unit Well No. 25 appears to have economic production potential in the Wolfcamp. The Strawn formation has also shown limited potential on certain open hole logs but, like the Wolfcamp, has not been production tested in the Indian Hills Unit. Based on the wells in the Indian Basin Strawn Gas Pool, the Strawn formation may be able to produce 0.4 BCF per well. Risked reserve calculations have indicated that neither formation (or even in combination) could economically support drilling a new well solely for those two horizons. However, when tested in conjunction with the Upper Pennsylvanian formation, these formations represent an opportunity to recover reserves that would otherwise not be recovered.

### **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 Well No. 42 is an attempt to further delineate and develop the northern extent of the productive dolomite horizons in the Indian Hills Unit.

Based on open hole logs from offsetting wells, it is Marathon's current interpretation that a rapid and complete transition from dolomite to limestone facies occurs in the southern half of Section 17. Reference is again made to Attachment #4 – Indian Basin Field Map. A dark blue line shows the dolomite to limestone interface. Areas of the map that are white represent primarily dolomite facies while the blue shaded areas represent primarily limestone facies. Also included with this application, is a lithology map from Marathon's Stratamodel of the Indian Basin area (please see Attachment #5). Attachment #5 shows the northern portion of the Indian Hills Unit. Based on the number of feet of dolomite encountered in existing wells and geologic depositional models, the Stratamodel has also predicted a rapid transition to dolomite in the southern half of Section 17. Finally, a cross-section of open hole logs has been attached (please see Attachment #6). The cross-section between Indian Hills Unit Wells No. 6, 25, and 32 also illustrates the rapid transition from dolomite to limestone. Productive dolomite is colored yellow on the cross-section. Indian Hills Unit Gas Com 'A' Well No. 6 encountered almost entirely limestone facies with only approximately 10' of non-productive dolomite (which is why the well was drilled and subsequently abandoned in 1967) while the two other wells, Indian Hill Units Well Nos. 25 and 32, are almost entirely dolomite facies and have 437' and 284' of productive dolomite respectively.

Marathon believes that the transition to limestone occurs somewhere north of the southern line of Section 17 and south of Indian Hills Unit Well No. 6. Because of the geologic uncertainty in where the transition happens, Marathon strongly believes the best bottom hole location to encounter economic and productive dolomite, as well as to efficiently drain the reservoir, is the proposed unorthodox location herein.

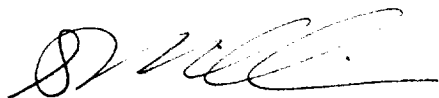
**Notifications:**

†

It is Marathon's understanding that because the gas spacing units towards which the Indian Hills Unit Well No. 42 is unorthodox are identical in ownership to that of the proposed, standard, 320-acre gas spacing unit, no waivers or notifications are required.

Should you have any questions/comments/concerns, please contact me at (915) 687-8306.

Respectfully,

A handwritten signature in black ink, appearing to read 'S. Millican', with a stylized flourish at the end.

Steven F. Millican  
Operations Engineer  
Indian Basin Asset Team  
Marathon Oil Company

DISTRICT I  
P.O. Box 1880, Hobbs, NM 88241-1880

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

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

DISTRICT IV  
P.O. Box 2088, Santa Fe, N.M. 87504-2088

State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

Form C-102  
Revised February 10, 1994  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code 33985	Pool Name Indian Basin Upper Penn. Assoc.
Property Code	Property Name INDIAN HILLS UNIT	Well Number 42
OGRID No. 14021	Operator Name MARATHON OIL COMPANY	Elevation 4205'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	20	21-S	24-E		475	NORTH	2522	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
P	17	21-S	24-E		283	SOUTH	142	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320 S/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>Standard Upper Penn. Producing Window</p> <p>Project Area</p> <p>SEC 17</p> <p>SEC 20</p> <p>U.P. Base</p> <p>U.P. T.D.</p> <p>4203.4'</p> <p>4178.0'</p> <p>4189.1'</p> <p>475'</p> <p>2522'</p> <p>442'</p> <p>SURF LOC.</p> <p>NON STANDARD BHL</p> <p>GEODETTIC COORDINATES NAD 27 NME SURF Y = 535039.5 LOC. X = 442227.1 BH. Y = 535547.9 LOC. X = 443990.7</p> <p>ATTACHMENT # 1-A</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Jerry Fletcher</i> Signature</p> <p>Jerry Fletcher Printed Name</p> <p>Engineer Tech. Title</p> <p>11/12/01 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 5, 2001</p> <p>Date Surveyed</p> <p>AWB</p> <p>Signature &amp; Seal of Professional Surveyor</p> <p>RONALD J. EDSON</p> <p>11/02/01</p> <p>01.11/1000</p> <p>Certificate No. RONALD J. EDSON 3238 GARY EDSON 12641</p>
--	---

DISTRICT I  
P.O. Box 1880, Hobbs, NM 88241-1880

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

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

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

State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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Santa Fe, New Mexico 87504-2088

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Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
		Wolfcamp (Wildcat)
Property Code	Property Name	Well Number
	INDIAN HILLS UNIT	42
OGRID No.	Operator Name	Elevation
14021	MARATHON OIL COMPANY	4205'

Surface Location

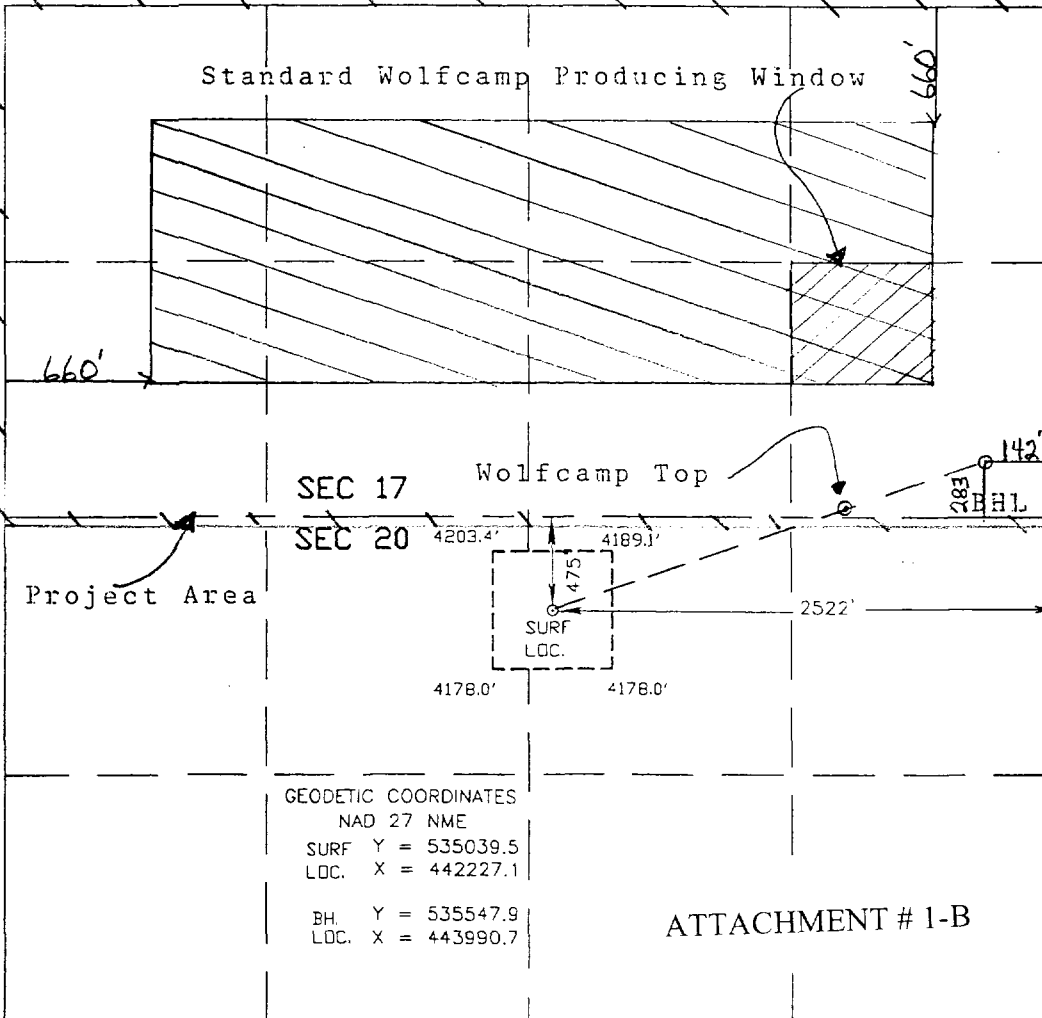
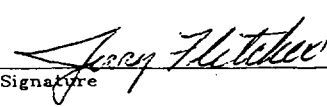
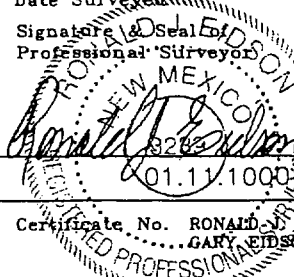
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	20	21-S	24-E		475	NORTH	2522	EAST	EDDY

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
P	17	21-S	24-E		283	SOUTH	142	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320 S/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>Standard Wolfcamp Producing Window</p> <p>Project Area</p> <p>SEC 17</p> <p>SEC 20</p> <p>Wolfcamp Top</p> <p>4203.4'</p> <p>4189.1'</p> <p>4178.0'</p> <p>4178.0'</p> <p>475'</p> <p>142'</p> <p>2522'</p> <p>SURF LOC.</p> <p>BHL</p> <p>GEODETC COORDINATES NAD 27 NME SURF Y = 535039.5 LOC. X = 442227.1 BH. Y = 535547.9 LOC. X = 443990.7</p> <p>ATTACHMENT # 1-B</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p> Signature</p> <p>Jerry Fletcher Printed Name</p> <p>Engineer Tech. Title</p> <p>11/12/01 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 5, 2001</p> <p>Date Surveyed</p> <p>AWB</p> <p>Signatures &amp; Seal Professional Surveyor</p> <p> RONALD J. EDSON 11/02/01</p> <p>Certificate No. RONALD J. EDSON 3239 GARY EDSON 12641</p>
---	--

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

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WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number		Pool Code		Pool Name	
				Indian Basin Strawn	
Property Code		Property Name			Well Number
		INDIAN HILLS UNIT			42
OGRID No.		Operator Name			Elevation
14021		MARATHON OIL COMPANY			4205'

Surface Location

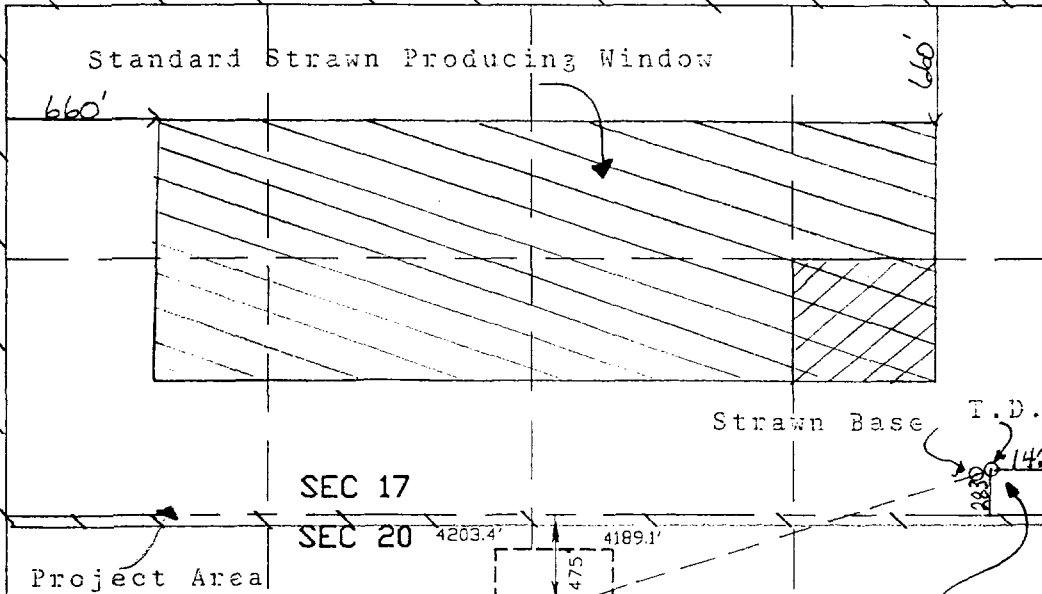
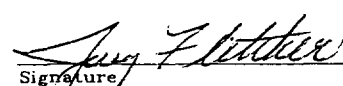
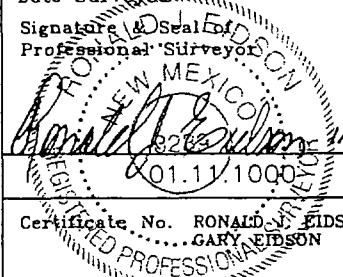
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	20	21-S	24-E		475	NORTH	2522	EAST	EDDY

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
P	17	21-S	24-E		283	SOUTH	142	EAST	EDDY

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

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OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>Standard Strawn Producing Window</p>  <p>660'</p> <p>475'</p> <p>Strawn Base T.D. 142'</p> <p>SEC 17</p> <p>SEC 20</p> <p>Project Area</p> <p>4203.4'</p> <p>4189.1'</p> <p>2522'</p> <p>4178.0'</p> <p>4178.0'</p> <p>SURF LOC.</p> <p>NON Standard BEL</p>		<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p> Signature</p> <p>Jerry Fletcher Printed Name</p> <p>Engineer Tech. Title</p> <p>11/12/01 Date</p>
<p>GEODETTIC COORDINATES</p> <p>NAD 27 NME</p> <p>SURF Y = 535039.5</p> <p>LOC. X = 442227.1</p> <p>BH. Y = 535547.9</p> <p>LOC. X = 443990.7</p>		<p><b>SURVEYOR CERTIFICATION</b></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 5, 2001</p> <p>Date Surveyed</p> <p>AWB</p> <p>Signature</p> <p>Professional Surveyor</p> <p> RONALD J. EDISON 11/02/01</p> <p>Certificate No. RONALD J. EDISON 3239 GARY EDISON 12641</p>

ATTACHMENT # 1-C

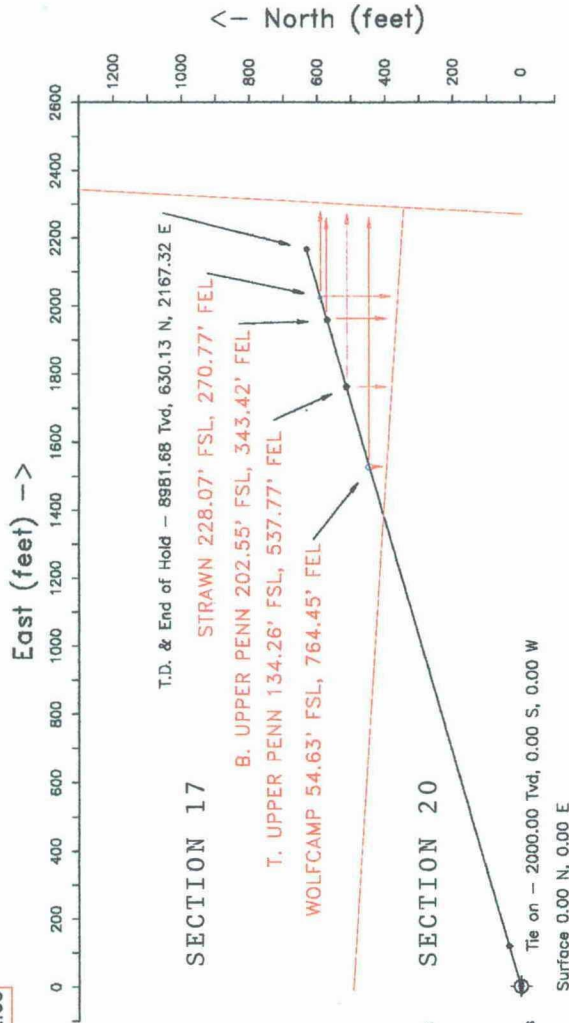
# Marathon Oil Company

Structure : Indian Hills Unit 42 Slot : slot #1  
Field : INDIAN BASIN Location : Eddy County New Mexico



PROPOSED BHL  
2257.06' ON AZI 73.79 DEG  
FROM SURFACE LOCATION  
M.D: 9350.0' T.V.D: 8981.68'

## ATTACHMENT # 2

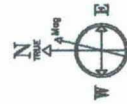


### WELL PROFILE DATA

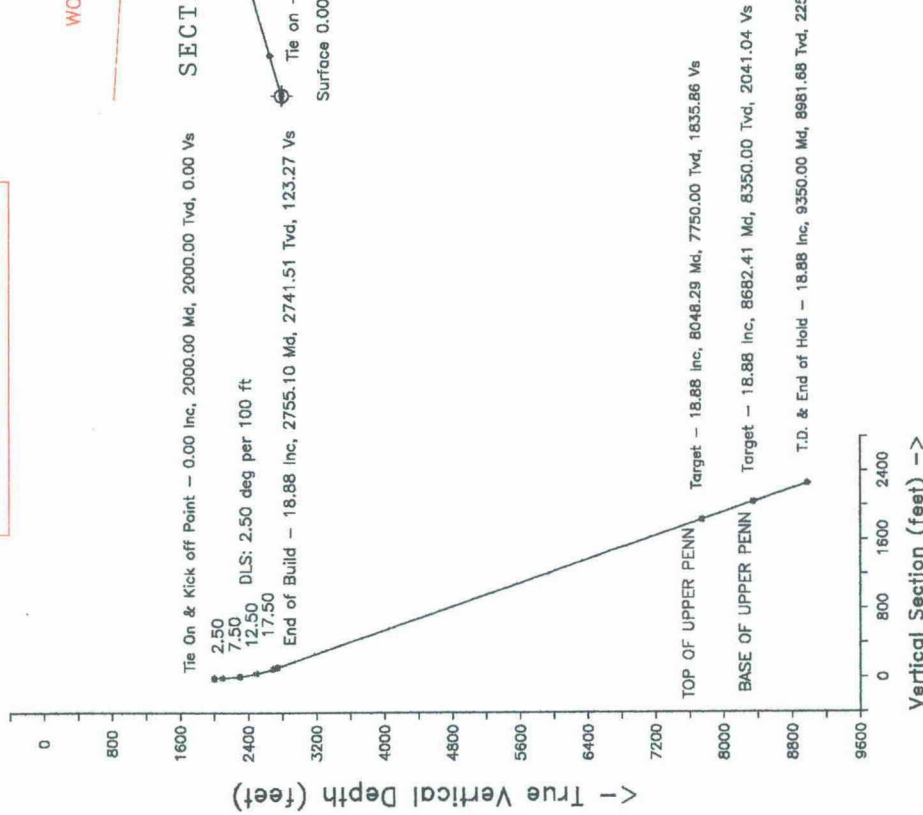
Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100
KOP	2000.00	0.00	73.79	2000.00	0.00	0.00	0.00	0.00
End of Build	2755.10	18.88	73.79	2741.51	34.42	118.37	123.27	2.50
Target	8048.29	18.88	73.79	7750.00	512.54	1762.86	1835.86	0.00
Target	8682.41	18.88	73.79	8350.00	569.82	1959.88	2041.04	0.00
T.D. & End of Hold	9350.00	18.88	73.79	8981.68	630.13	2167.32	2257.06	0.00



APPROVAL  
Operations:  
Client:  
Date:



8-Nov-2001 (Issued 89800)  
Magnetic North is 9.14 degrees East of TRUE North  
To convert azimuth from Magnetic to TRUE add 9.14 deg

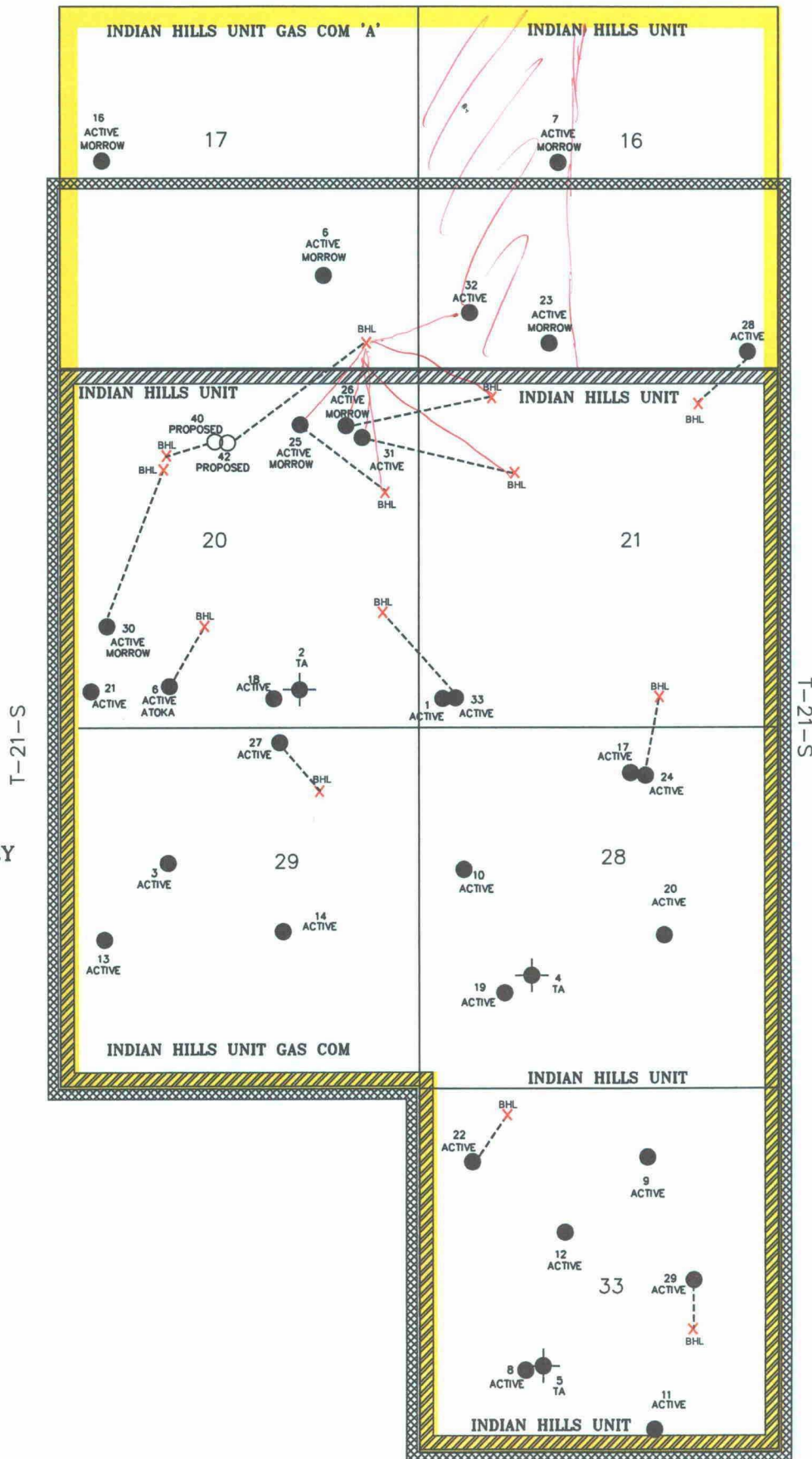


Vertical Section (feet) -->  
Azimuth 73.79 with reference 0.00 N, 0.00 E from slot #1

Created by planner  
Date plotted : 29-Nov-2001  
Plot Reference is P12DJRH.  
Coordinates are in feet reference slot #1.  
True Vertical Depths are reference rotary table.  
marhu4211  
Baker Hughes INTEQ

ATTACHMENT NO. 3  
 INDIAN HILLS UNIT  
 UPPER PENNSYLVANIAN PARTICIPATING AREA  
 EDDY COUNTY, NEW MEXICO

R-24-E



T-21-S

T-21-S

INDIAN HILLS UNIT BOUNDARY



PROPOSED UPPER  
 PENNSYLVANIAN  
 PARTICIPATING AREA



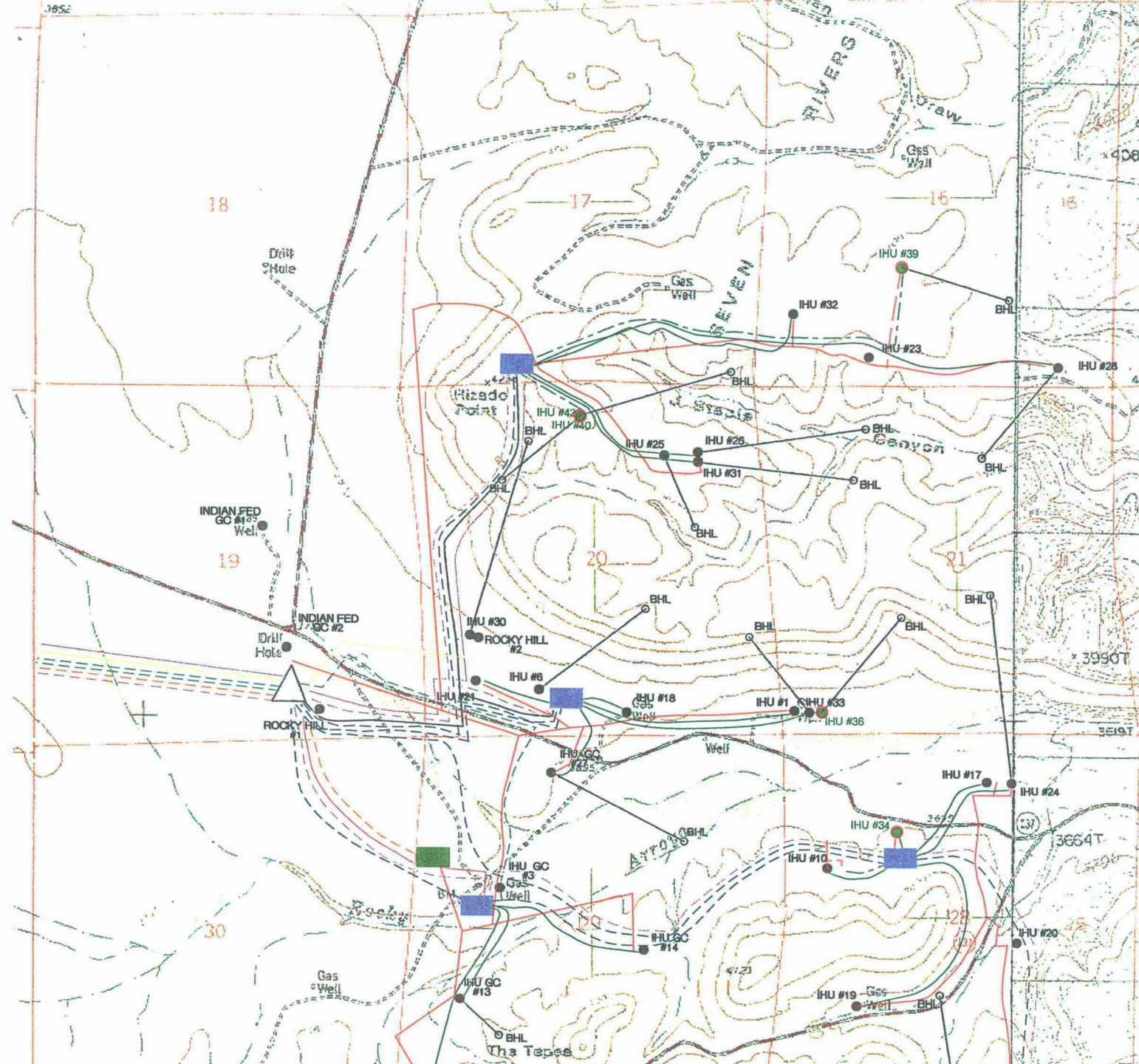
EXISTING UPPER  
 PENNSYLVANIAN  
 PARTICIPATING AREA

NOT TO SCALE

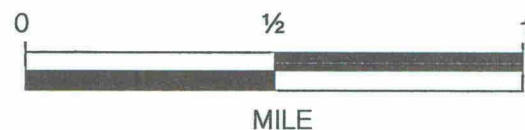
R-24-E

1/8/02  
 IRU42NSL.DWG  
 BY: V. L. LARKE





- PRODUCING WELLS
- PENDING WELLS
- PLANNED WELLS
- CONTINGENT WELLS
- EXISTING DUAL FLOWLINES
- - - PROPOSED DUAL FLOWLINES
- EXISTING ELECTRICAL LINES
- - - PROPOSED ELECTRIC LINES
- - - FLUID GATHERING SYSTEM
- OIL GATHERING SYSTEM
- PRORATION UNIT ORIENTATION
- - - LOW PRESSURE GAS GATHERING SYSTEM
- - - HIGH PRESSURE GAS GATHERING SYSTEM
- - - COMPRESSOR FUEL LINE
- - - COMPRESSOR DISCHARGE LINE
- - - PROPOSED MORROW GAS GATHERING SYSTEM
- - - SWD INJECTION LINE
- == == ROADWAY
- △ CENTRAL FACILITY
- SATELLITE STATIONS
- COMPRESSOR STATION

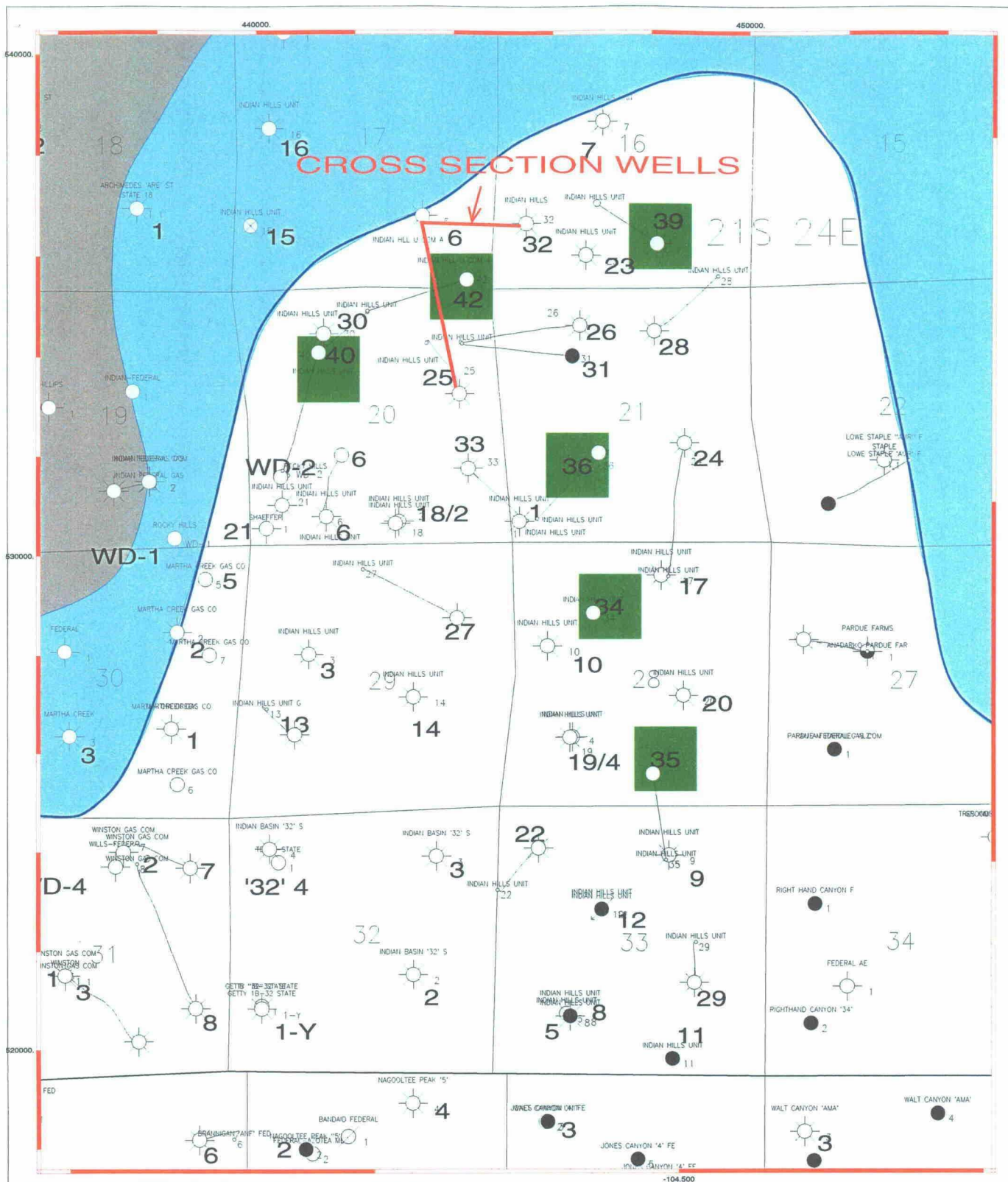


MARATHON OIL COMPANY  
SOUTHERN BUSINESS UNIT

# EAST INDIAN BASIN EDDY COUNTY, NEW MEXICO

ATTACHMENT # 3A



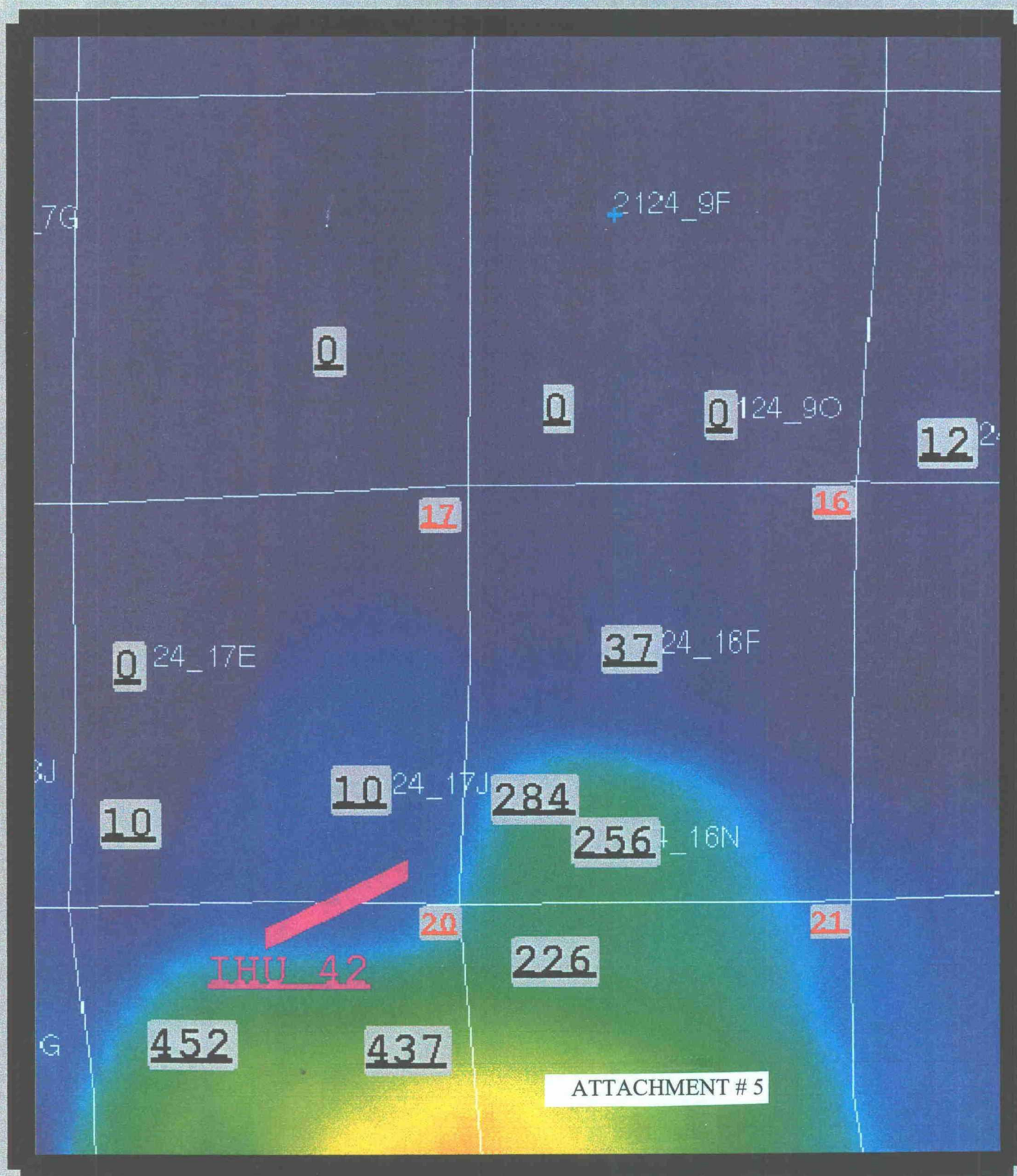




# EAST INDIAN BASIN

FEET OF POROSITY ABOVE 5% IN PRODUCTIVE INTERVAL

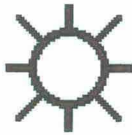
THICKNESS: yellow = 400' blue = 0'



452 = ft of dolomite in productive interval.



1



MARATHON OIL COMPANY  
INDIAN HILLS UNIT 25  
30015311940000

TD 10400.0 ft  
021.0S 024.0E 020  
4184.0 ft KB

2



MARATHON  
INDIAN HILLS UNIT 6-A  
30015200060000

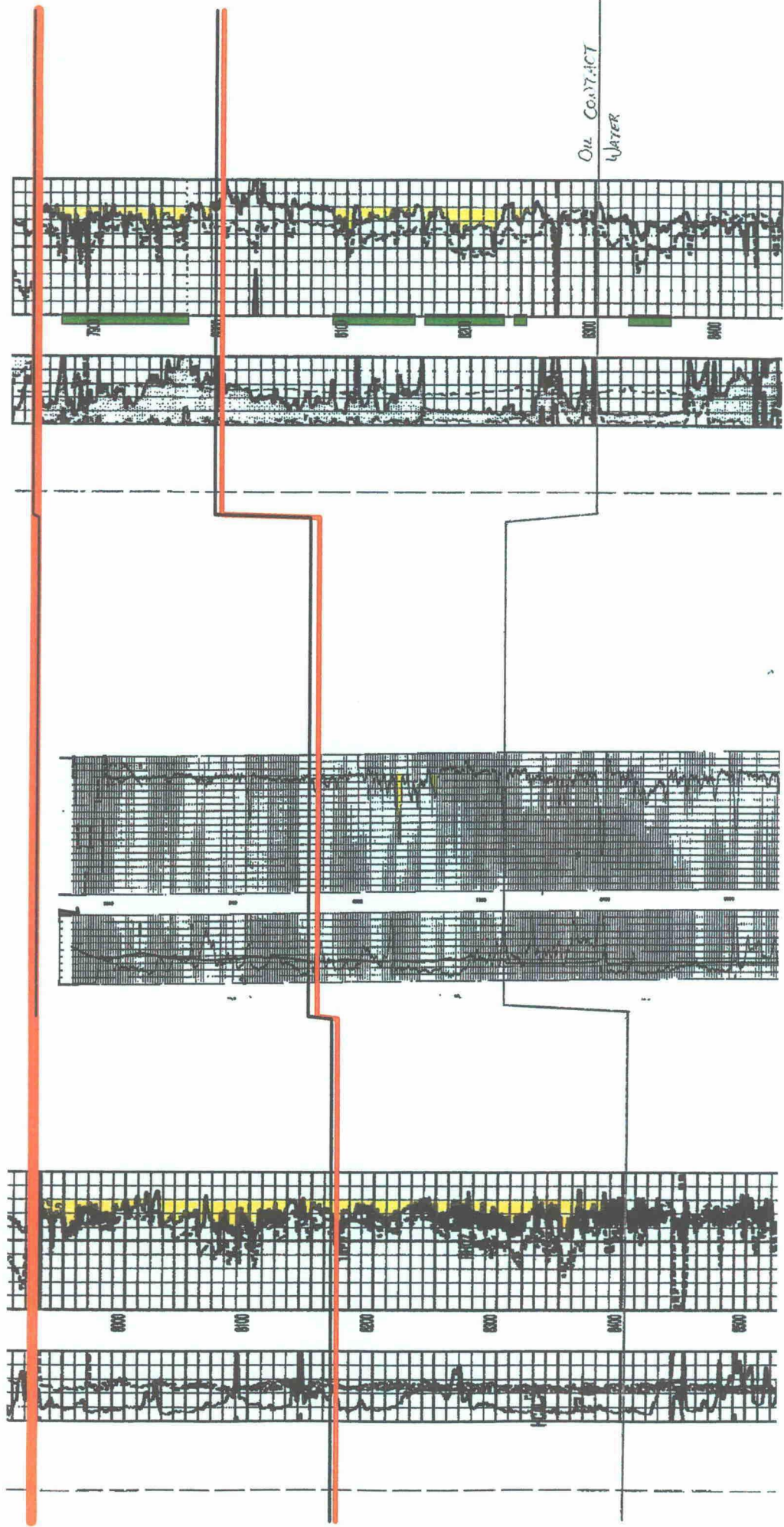
01-18-1967  
TD 10183.0 ft  
021.0S 024.0E 017  
4220.0 ft KB

3



MARATHON OIL COMPANY  
INDIAN HILLS UNIT 32  
30015315910000

02-16-2001  
TD 8730.0 ft  
021.0S 024.0E 016  
4203.0 ft KB



## Stogner, Michael

---

**From:** Dueease Jr, Walter J. [WJDueease@MarathonOil.com]

**Sent:** Tuesday, July 02, 2002 3:48 PM

**To:** Stogner, Michael

**Subject:** RE: Indian Hills Unit # 42 NSL

Please see the attached powerpoint from Inteq.

The last e-mail was sent through your tie from the EMNRD website, sorry for the delay.

W

-----Original Message-----

**From:** Stogner, Michael [mailto:MSTOGNER@state.nm.us]

**Sent:** Tuesday, July 02, 2002 4:43 PM

**To:** Dueease Jr, Walter J.

**Subject:** RE: Indian Hills Unit # 42 NSL

Your June 28th e-mail is the last communication I've received on this matter. How was this information sent?

-----Original Message-----

**From:** Dueease Jr, Walter J. [mailto:WJDueease@MarathonOil.com]

**Sent:** Tuesday, July 02, 2002 3:41 PM

**To:** Stogner, Michael

**Subject:** RE: Indian Hills Unit # 42 NSL

You should have them by now. I sent them to you earlier this morning. Please let me know if they did not make it.

Thanks.

W

-----Original Message-----

**From:** Stogner, Michael [mailto:MSTOGNER@state.nm.us]

**Sent:** Tuesday, July 02, 2002 3:37 PM

**To:** Dueease Jr, Walter J.

**Subject:** RE: Indian Hills Unit # 42 NSL

Please have the x-y's to be converted into section line footages for the formation tops.  
Thanks.

-----Original Message-----

**From:** Dueease Jr, Walter J. [mailto:WJDueease@MarathonOil.com]

**Sent:** Friday, June 28, 2002 11:55 AM

**To:** Stogner, Michael

**Subject:** RE: Indian Hills Unit # 42 NSL

Mike,

I'm told the Artesia office was waiting to assign an API number once an order was prepared.

7/2/2002

Yes, the SHL has not changed. After looking at the distances from the SHL to the penetration points as noted on the INTEQ plats, one might believe that that we did not cross the section line into Sec. 17. However the section line is skewed so much that that is not the case. John West Engineering provided INTEQ with X-Y coordinates for us to intersect the Upper Penn across the section line in Sec. 17. If you like I could arrange for the X-Y's to be converted into lease line footages for the formation tops.

Please advise,

Walt

-----Original Message-----

**From:** Stogner, Michael [mailto:MSTOGNER@state.nm.us]

**Sent:** Friday, June 28, 2002 11:40 AM

**To:** Dueease Jr, Walter J.

**Subject:** RE: Indian Hills Unit # 42 NSL

One other simple little matter, is the surface location still 475' FNL & 2522' FEL of Sec. 20?

-----Original Message-----

**From:** Dueease Jr, Walter J. [mailto:WJDueease@MarathonOil.com]

**Sent:** Thursday, June 27, 2002 1:29 PM

**To:** mstogner@state.nm.us

**Subject:** Indian Hills Unit # 42 NSL

Mike,

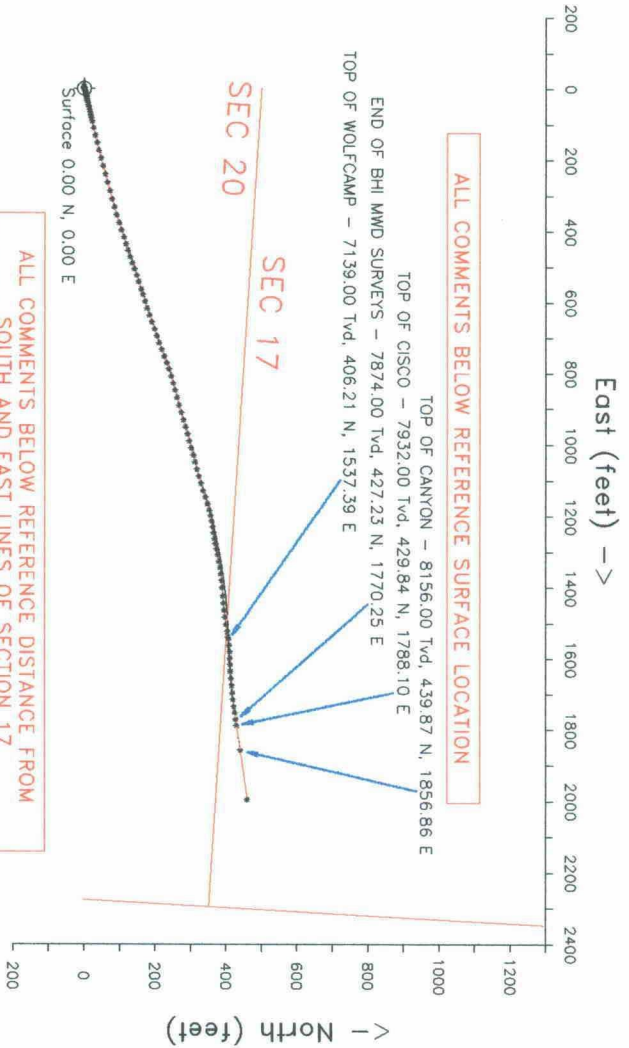
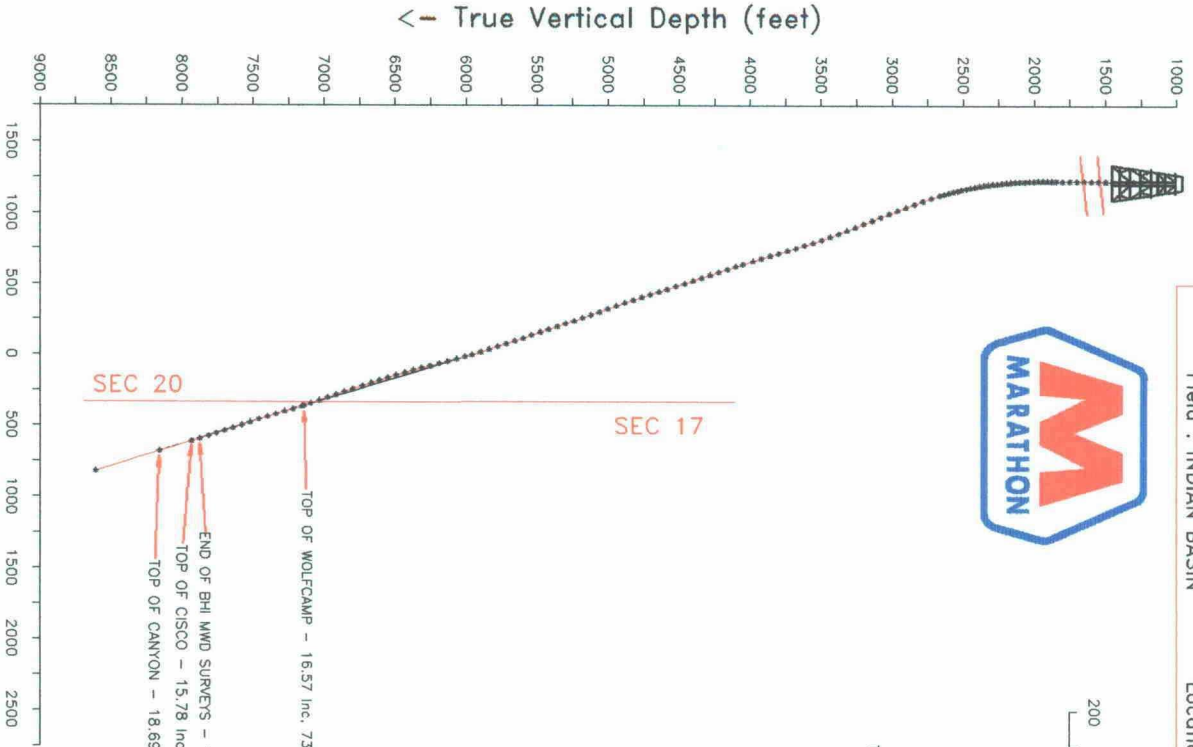
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Thanks,

Walt <<IHU42form-sl.doc>> <<IHU42form-sl.ppt>> <<IHU #42nsl.doc>>

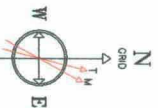
# Marathon Oil Company

Structure : Indian Hills Unit 42 Slot : slot #1  
Field : INDIAN BASIN Location : Eddy County New Mexico



INTEQ

28-Apr-2002 (source BHOA)  
Magnetic North is 8.09 degrees East of True North  
Coordinates are in feet reference slot #1.  
True Vertical Depths are reference rotary table.  
To correct azimuth from Magnetic to GRID add 8.19 deg



Created By Kellym

Date plotted : 27-Jun-2002

Plot Reference is FORM.

Coordinates are in feet reference slot #1.

True Vertical Depths are reference rotary table.

--- Baker Hughes INTEQ ---

**Stogner, Michael**

---

**From:** Dueease Jr, Walter J. [WJDueease@MarathonOil.com]  
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**To:** Stogner, Michael  
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Mike,

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-----Original Message-----

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**Sent:** Thursday, June 27, 2002 1:29 PM  
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**Subject:** Indian Hills Unit # 42 NSL

Mike,

Please see the attachments per your request.

Thanks,

Walt <<IHU42form-sl.doc>> <<IHU42form-sl.ppt>> <<IHU #42nsl.doc>>



## Stogner, Michael

---

**From:** Dueease Jr, Walter J. [WJDueease@MarathonOil.com]

**Sent:** Tuesday, July 02, 2002 9:59 AM

**To:** mstogner@state.nm.us

**Subject:** Indian Hills Unit # 42

Mike,

I asked INTEQ to convert the plat to reflect the penetration points from the section lines of Sec. 17. I hope that this will help you.

Thanks,

Walt

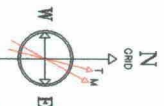
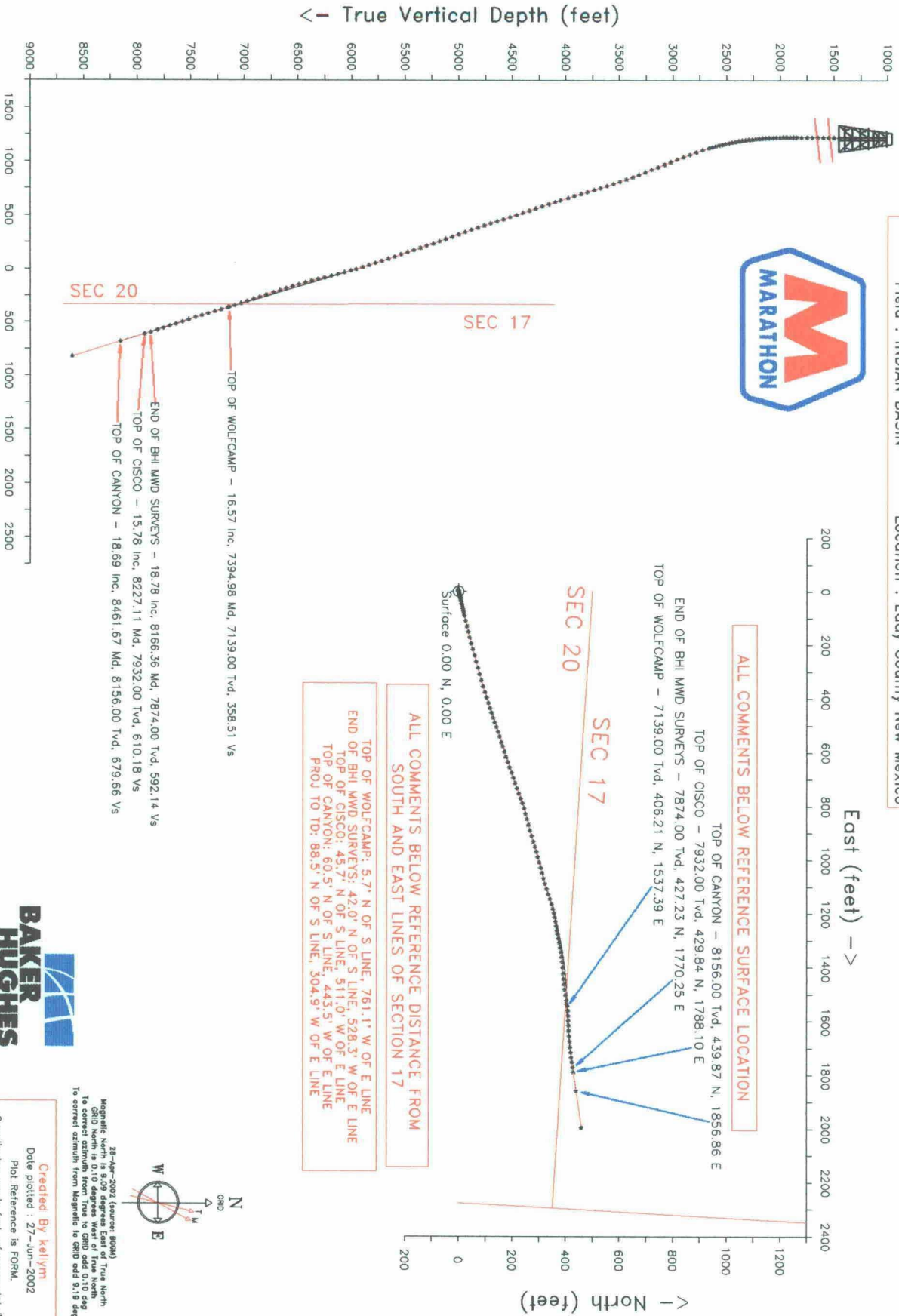
<<ihu42dis.ppt>>

7/3/2002



# Marathon Oil Company

Structure : Indian Hills Unit 42 Slot : slot #1  
Field : INDIAN BASIN Location : Eddy County New Mexico



28-Apr-2002 (source BGM)  
Magnetic North is 9.09 degrees East of True North  
To correct azimuth from magnetic to true add 9.09 deg  
To correct azimuth from magnetic to grid add 9.19 deg

Created By Kellym

Date plotted : 27-Jun-2002  
Plot Reference is FORM.

Coordinates are in feet reference slot #1.  
True Vertical Depths are reference rotary table.

--- Baker Hughes INTEQ ---



Azimuth 82.62 with reference 352.55 N, 1182.83 E from slot #1

**Stogner, Michael**

---

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Your June 28th e-mail is the last communication I've received on this matter. How was this information sent?

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**Subject:** RE: Indian Hills Unit # 42 NSL

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**Sent:** Thursday, June 27, 2002 1:29 PM

**To:** mstogner@state.nm.us

**Subject:** Indian Hills Unit # 42 NSL

Mike,

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Thanks,

Walt <<IHU42form-sl.doc>> <<IHU42form-sl.ppt>> <<IHU #42nsl.doc>>

**Stogner, Michael**

---

**From:** Stogner, Michael  
**Sent:** Tuesday, July 02, 2002 2:37 PM  
**To:** 'Dueease Jr, Walter J.'  
**Subject:** RE: Indian Hills Unit # 42 NSL

Please have the x-y's to be converted into section line footages for the formation tops. Thanks.

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**From:** Dueease Jr, Walter J. [mailto:WJDueease@MarathonOil.com]  
**Sent:** Friday, June 28, 2002 11:55 AM  
**To:** Stogner, Michael  
**Subject:** RE: Indian Hills Unit # 42 NSL

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## Stogner, Michael

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**Subject:** RE: Indian Hills Unit # 42 NSL

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**Sent:** Thursday, June 27, 2002 1:29 PM

**To:** mstogner@state.nm.us

**Subject:** Indian Hills Unit # 42 NSL

Mike,

Please see the attachments per your request.

Thanks,

Walt <<IHU42form-sl.doc>> <<IHU42form-sl.ppt>> <<IHU #42nsl.doc>>

**Stogner, Michael**

---

**From:** Stogner, Michael  
**Sent:** Friday, June 28, 2002 10:40 AM  
**To:** 'Dueease Jr, Walter J.'  
**Subject:** RE: Indian Hills Unit # 42 NSL

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**Sent:** Thursday, June 27, 2002 1:29 PM  
**To:** mstogner@state.nm.us  
**Subject:** Indian Hills Unit # 42 NSL

Mike,

Please see the attachments per your request.

Thanks,

Walt <<IHU42form-sl.doc>> <<IHU42form-sl.ppt>> <<IHU #42nsl.doc>>



## Stogner, Michael

---

**From:** Stogner, Michael  
**Sent:** Friday, June 28, 2002 10:37 AM  
**To:** 'Dueease Jr, Walter J.'  
**Subject:** RE: Indian Hills Unit # 42 NSL

One quick question. what is the API No. on this well?

-----Original Message-----

**From:** Dueease Jr, Walter J. [mailto:WJDueease@MarathonOil.com]  
**Sent:** Thursday, June 27, 2002 1:29 PM  
**To:** mstogner@state.nm.us  
**Subject:** Indian Hills Unit # 42 NSL

Mike,

Please see the attachments per your request.

Thanks,

Walt <<IHU42form-sl.doc>> <<IHU42form-sl.ppt>> <<IHU #42nsl.doc>>

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**To:** mstogner@state.nm.us

**Subject:** Indian Hills Unit # 42 NSL

Mike,

Please see the attachments per your request.

Thanks,

Walt <<IHU42form-sl.doc>> <<IHU42form-sl.ppt>> <<IHU #42nsl.doc>>

6/28/2002

Mike,

We spudded the Indian Hills Unit on 4/4/02 and directionally drilled to 8985' with an estimated Strawn top at 8938'. During drilling, we encountered severe lost circulation problems at 8258' and attempted to log the well at TD. We stuck our logging tools at 8854' and after attempting to wash over the logging tools we left the FMI, density, resistivity tools as well as 2 joints of washpipe in the hole. At this point, we elected to plug back and sidetrack. While setting plugs on top of the washpipe and logging tools we became stuck at 8600' and left 7 joints of HWDP and 3 joints of 2-7/8" AOH tubing. We finally set an abandonment plug at 7815' and a kick-off plug at 5945'.

We sidetracked the original well bore at 6170' and resumed directional drilling. We encountered severe losses again at 8239' and drilled to a TD of 8935'. We encountered the following formation tops in the sidetracked wellbore. Wolfcamp – 7935' (md), Cisco – 8227' (md), Canyon – 8462' (md).

Due to the severe losses in the sidetracked hole and the expense that we had incurred on the well, we elected to TD in the base of the Penn and not pursue the Strawn. The unstable hole conditions (lost circulation) were problematic and we were unable to generate any directional data from our MWD after 7874' (tvd), 8166' (md). Therefore our survey data as noted on the plan view after this point is a projection of the last 769' of the hole. You will also note that we did not cut the Strawn in the sidetrack.

Please refer to the attached survey data from INTEQ for referencing the penetration points for the Wolfcamp, Indian Basin Upper Pennsylvanian Associated Pool (Cisco and Canyon) and the plan views of the directional hole.

I apologize for the detail but I thought it might be of some help when you reference our application for your order. When you are able to issue an API number, please send it my way.

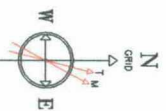
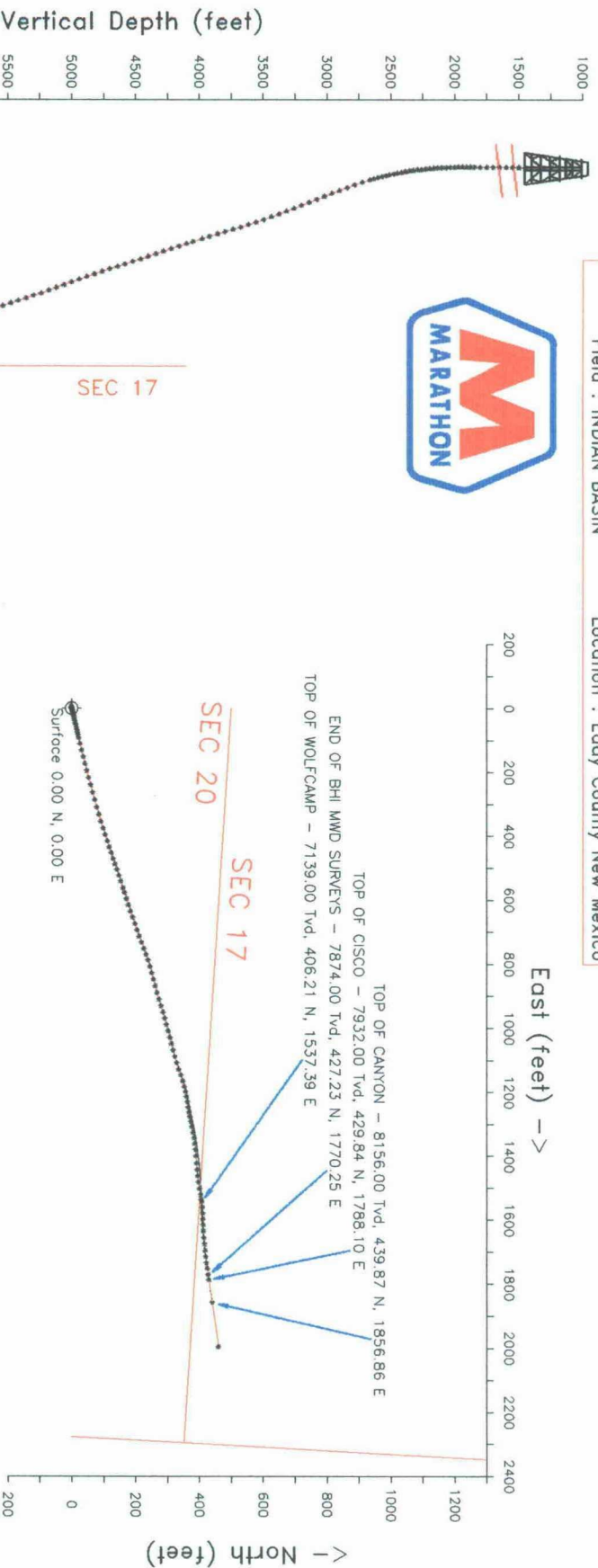
Should you have any questions, please call me at (800) 351-1417.

Thanks,

Walter

# Marathon Oil Company

Structure : Indian Hills Unit 42  
Field : INDIAN BASIN  
Slot : slot #1  
Location : Eddy County New Mexico



28-Apr-2002 (Source: BGRU)  
Magnetic North is 8.09 degrees East of True North  
To correct azimuth from True to GRID add 0.10 deg  
To correct azimuth from Magnetic to GRID add 8.19 deg

Vertical Section (feet) →

Azimuth 82.62 with reference 352.55 N, 1182.83 E from slot #1



Created By Kellym  
Date plotted : 27-Jun-2002  
Plot Reference is FORM.  
Coordinates are in feet reference slot #1.  
True Vertical Depths are reference rotary table.  
th42form  
--- Baker Hughes INTEQ ---

Marathon Oil Company  
Indian Hills Unit 42

slot #1  
INDIAN BASIN  
Eddy County New Mexico

S U R V E Y L I S T I N G

by  
Baker Hughes INTEQ

Your ref : SIDETRACK  
Our ref : svy1963  
License :

Date printed : 27-Jun-2002  
Date created : 31-May-2002  
Last revised : 26-Jun-2002

Field is centred on n32 30 0.000,w104 30 0  
Structure is centred on 442227.100,535039.500,999.00000,N

Slot location is n32 28 14.866,w104 31 14.391  
Slot Grid coordinates are N 535039.500, E 442227.100  
Slot local coordinates are 0.00 N 0.00 E

Projection type: mercator - New Mexico East (3001), Spheroid: Clarke - 1866  
Reference North is Grid North

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect	G R I D E a s t i n g	C O O R D S N o r t h i n g
0.00	0.00	0.00	0.00	0.00N	0.00E	0.00	442227.10	535039.50
50.00	0.24	26.23	50.00	0.09N	0.05E	0.07	442227.15	535039.59
100.00	0.19	0.62	100.00	0.27N	0.09E	0.15	442227.19	535039.77
150.00	0.14	4.27	150.00	0.41N	0.10E	0.19	442227.20	535039.91
200.00	0.11	337.93	200.00	0.52N	0.09E	0.21	442227.19	535040.02
250.00	0.05	345.32	250.00	0.59N	0.06E	0.12	442227.16	535040.09
300.00	0.24	359.63	300.00	0.71N	0.06E	0.38	442227.16	535040.21
350.00	0.06	330.42	350.00	0.84N	0.04E	0.38	442227.14	535040.34
400.00	0.02	41.97	400.00	0.87N	0.03E	0.11	442227.13	535040.37
450.00	0.11	186.56	450.00	0.83N	0.04E	0.25	442227.14	535040.33
500.00	0.13	201.76	500.00	0.73N	0.01E	0.07	442227.11	535040.23
550.00	0.18	207.57	550.00	0.60N	0.05W	0.10	442227.05	535040.10
600.00	0.16	200.28	600.00	0.47N	0.11W	0.06	442226.99	535039.97
650.00	0.19	183.93	650.00	0.32N	0.14W	0.12	442226.96	535039.82
700.00	0.13	208.21	700.00	0.19N	0.17W	0.18	442226.93	535039.69
750.00	0.15	219.96	750.00	0.09N	0.24W	0.07	442226.86	535039.59
800.00	0.17	218.13	800.00	0.02S	0.33W	0.04	442226.77	535039.48
850.00	0.16	235.46	850.00	0.12S	0.43W	0.10	442226.67	535039.38
900.00	0.14	232.59	900.00	0.20S	0.54W	0.04	442226.56	535039.30
950.00	0.11	233.14	950.00	0.26S	0.62W	0.06	442226.48	535039.24
1000.00	0.13	237.51	1000.00	0.32S	0.71W	0.04	442226.39	535039.18
1050.00	0.05	287.62	1050.00	0.34S	0.78W	0.21	442226.32	535039.16
1100.00	0.05	290.46	1100.00	0.33S	0.82W	0.00	442226.28	535039.17
1150.00	0.06	99.88	1150.00	0.33S	0.82W	0.22	442226.28	535039.17
1200.00	0.05	225.68	1200.00	0.35S	0.81W	0.20	442226.29	535039.15

All data in feet unless otherwise stated. Calculation uses minimum curvature method.  
Coordinates from slot #1 and TVD from rotary table.

Bottom hole distance is 2047.62 on azimuth 77.02 degrees from wellhead.

Vertical section is from N 0.00 E 0.00 on azimuth 76.22 degrees.

Grid is mercator - New Mexico East (3001).

Grid coordinates in FEET and computed using the Clarke - 1866 spheroid

Presented by Baker Hughes INTEQ

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect	G R I D Easting	C O O R D S Northing	
1250.00	0.27	281.51	1250.00	0.34S	0.49	-0.99	442226.16	535039.16	
1300.00	0.36	276.01	1300.00	0.30S	0.19	-1.24	442225.89	535039.20	
1350.00	0.40	278.92	1349.99	0.25S	0.09	-1.55	442225.56	535039.25	
1400.00	0.45	275.46	1399.99	0.21S	0.11	-1.90	442225.20	535039.29	
1450.00	0.52	274.55	1449.99	0.17S	0.14	-2.30	442224.77	535039.33	
1500.00	0.61	272.61	1499.99	0.14S	0.18	-2.77	442224.28	535039.36	
1550.00	0.58	265.04	1549.99	0.15S	0.17	-3.28	442223.76	535039.35	
1600.00	0.67	256.46	1599.98	0.24S	0.26	-3.82	442223.23	535039.26	
1650.00	0.48	241.92	1649.98	0.41S	0.48	-4.31	442222.76	535039.09	
1700.00	0.46	237.27	1699.98	0.62S	0.09	-4.71	442222.41	535038.88	
1750.00	0.40	248.01	1749.98	0.79S	0.20	-5.07	442222.07	535038.71	
1800.00	0.40	240.53	1799.98	0.94S	0.10	-5.41	442221.76	535038.56	
1845.00	0.80	254.30	1844.97	1.10S	0.94	-5.88	442221.32	535038.40	
1877.00	0.30	226.50	1876.97	1.22S	1.73	-6.17	442221.05	535038.28	
1909.00	0.20	191.40	1908.97	1.33S	0.56	-6.27	442220.97	535038.17	
1941.00	0.35	101.70	1940.97	1.41S	1.26	-6.20	442221.06	535038.09	
1973.00	0.62	77.80	1972.97	1.39S	1.04	-5.94	442221.32	535038.11	
2005.00	1.58	79.50	2004.96	1.28S	3.00	-5.33	442221.93	535038.22	
2037.00	1.80	76.40	2036.95	1.08S	0.74	-4.39	442222.85	535038.42	
2069.00	2.70	78.80	2068.93	0.81S	2.83	-3.13	442224.08	535038.69	
2101.00	3.40	74.30	2100.88	0.41S	1.37W	2.31	-1.43	442225.73	535039.09
2133.00	4.00	69.30	2132.81	0.24N	0.59E	2.13	0.63	442227.69	535039.74
2165.00	4.70	74.90	2164.72	0.98N	2.90E	2.56	3.05	442230.00	535040.48
2198.00	5.30	72.20	2197.60	1.80N	5.65E	1.95	5.92	442232.75	535041.30
2230.00	6.00	75.00	2229.44	2.68N	8.68E	2.35	9.06	442235.78	535042.18

All data in feet unless otherwise stated. Calculation uses minimum curvature method.

Coordinates from slot #1 and TVD from rotary table.

Bottom hole distance is 2047.62 on azimuth 77.02 degrees from wellhead.

Vertical section is from N 0.00 E 0.00 on azimuth 76.22 degrees.

Grid is mercator - New Mexico East (3001).

Grid coordinates in FEET and computed using the Clarke - 1866 spheroid

Presented by Baker Hughes INTEQ

Marathon Oil Company  
Indian Hills Unit 42, slot #1  
INDIAN BASIN, Eddy County New Mexico

SURVEY LISTING Page 3  
Your ref : SIDETRACK  
Last revised : 26-Jun-2002

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect	G R I D Easting	C O O R D S Northing
2262.00	6.24	75.70	2261.26	3.54N	0.79	12.48	442239.08	535043.04
2293.00	7.00	78.50	2292.05	4.34N	2.66	16.05	442242.56	535043.84
2325.00	8.00	75.70	2323.78	5.28N	3.33	20.22	442246.63	535044.78
2356.00	8.90	76.70	2354.44	6.36N	2.94	24.78	442251.05	535045.86
2388.00	9.50	77.40	2386.03	7.51N	1.91	29.89	442256.04	535047.01
2420.00	10.50	76.40	2417.54	8.77N	3.17	35.45	442261.45	535048.27
2451.00	11.10	77.10	2447.99	10.10N	1.98	41.26	442267.10	535049.60
2482.00	12.00	75.70	2478.36	11.56N	3.04	47.46	442273.14	535051.06
2514.00	12.70	77.80	2509.62	13.12N	2.60	54.31	442279.80	535052.62
2546.00	13.50	77.10	2540.79	14.70N	2.55	61.56	442286.88	535054.20
2577.00	14.20	76.70	2570.89	16.38N	2.28	68.98	442294.10	535055.88
2609.00	15.10	77.40	2601.85	18.20N	2.87	77.07	442301.99	535057.70
2641.00	15.80	77.80	2632.69	20.03N	2.21	85.59	442310.32	535059.53
2673.00	16.60	77.40	2663.42	21.94N	2.52	94.52	442319.04	535061.44
2736.00	18.40	77.00	2723.50	26.14N	2.86	113.46	442337.51	535065.64
2800.00	19.60	76.70	2784.02	30.89N	1.88	134.29	442357.80	535070.39
2862.00	20.50	75.70	2842.26	35.96N	1.55	155.55	442378.44	535075.46
2926.00	20.90	75.70	2902.13	41.55N	0.63	178.17	442400.36	535081.05
2989.00	20.70	75.30	2961.02	47.15N	0.39	200.54	442422.02	535086.65
3053.00	21.40	74.60	3020.75	53.12N	1.16	223.52	442444.22	535092.62
3117.00	22.20	74.60	3080.17	59.43N	1.25	247.28	442467.13	535098.93
3180.00	21.80	75.70	3138.58	65.48N	0.91	270.87	442489.94	535104.98
3245.00	22.10	73.60	3198.87	71.92N	1.29	295.16	442513.37	535111.42
3309.00	22.20	74.30	3258.15	78.59N	0.44	319.27	442536.56	535118.09
3372.00	21.60	73.60	3316.60	85.08N	1.04	342.75	442559.14	535124.58

All data in feet unless otherwise stated. Calculation uses minimum curvature method.  
Coordinates from slot #1 and TVD from rotary table.

Bottom hole distance is 2047.62 on azimuth 77.02 degrees from wellhead.

Vertical section is from N 0.00 E 0.00 on azimuth 76.22 degrees.

Grid is mercator - New Mexico East (3001).

Grid coordinates in FEET and computed using the Clarke - 1866 spheroid

Presented by Baker Hughes INTEQ



Marathon Oil Company  
Indian Hills Unit 42, slot #1  
INDIAN BASIN, Eddy County New Mexico

SURVEY LISTING Page 4  
Your ref : SIDETRACK  
Last revised : 26-Jun-2002

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect	G R I D E a s t i n g	C O O R D S N o r t h i n g
3435.00	21.20	72.90	3375.26	91.70N	0.75	365.70	442581.15	535131.20
3499.00	20.30	72.50	3435.11	98.45N	1.42	388.34	442602.80	535137.95
3562.00	19.60	72.20	3494.33	104.96N	1.12	409.78	442623.28	535144.46
3625.00	18.80	72.50	3553.82	111.25N	1.28	430.45	442643.03	535150.75
3689.00	17.90	71.10	3614.57	117.53N	1.57	450.54	442662.17	535157.03
3752.00	16.90	71.80	3674.68	123.53N	1.62	469.31	442680.03	535163.03
3816.00	16.90	71.50	3735.92	129.39N	0.14	487.86	442697.69	535168.89
3880.00	17.20	70.70	3797.11	135.47N	0.60	506.55	442715.44	535174.97
3943.00	17.10	70.70	3857.31	141.61N	0.16	525.04	442732.97	535181.11
4007.00	17.10	70.10	3918.48	147.92N	0.28	543.76	442750.70	535187.42
4070.00	17.40	71.50	3978.64	154.06N	0.81	562.36	442768.34	535193.56
4143.00	17.80	71.80	4048.23	161.01N	0.56	584.36	442789.29	535200.51
4197.00	17.80	73.80	4099.64	165.89N	1.13	600.84	442805.06	535205.39
4261.00	18.50	73.20	4160.46	171.55N	1.13	620.75	442824.17	535211.05
4324.00	19.00	71.80	4220.11	177.64N	1.07	640.96	442843.49	535217.14
4388.00	18.80	71.10	4280.66	184.24N	0.47	661.62	442863.14	535223.74
4451.00	18.90	70.70	4340.28	190.90N	0.26	681.88	442882.37	535230.40
4515.00	18.90	70.40	4400.83	197.80N	0.15	702.51	442901.92	535237.30
4578.00	18.70	70.80	4460.47	204.55N	0.38	722.72	442921.07	535244.05
4642.00	18.50	70.80	4521.13	211.26N	0.31	743.04	442940.35	535250.76
4706.00	18.90	69.00	4581.75	218.31N	1.10	763.43	442959.61	535257.81
4769.00	18.50	69.00	4641.43	225.55N	0.63	783.47	442978.47	535265.05
4832.00	18.40	71.10	4701.19	232.35N	1.07	803.29	442997.21	535271.85
4895.00	17.70	71.10	4761.09	238.68N	1.11	822.73	443015.68	535278.18
4958.00	18.60	72.90	4820.95	244.73N	1.68	842.30	443034.34	535284.23

All data in feet unless otherwise stated. Calculation uses minimum curvature method.

Coordinates from slot #1 and TVD from rotary table.

Bottom hole distance is 2047.62 on azimuth 77.02 degrees from wellhead.

Vertical section is from N 0.00 E 0.00 on azimuth 76.22 degrees.

Grid is mercator - New Mexico East (3001).

Grid coordinates in FEET and computed using the Clarke - 1866 spheroid

Presented by Baker Hughes INTEQ

Marathon Oil Company  
Indian Hills Unit 42, slot #1  
INDIAN BASIN, Eddy County New Mexico

SURVEY LISTING Page 5  
Your ref : SIDETRACK  
Last revised : 26-Jun-2002

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect	G R I D E a s t i n g	C O O R D S N o r t h i n g
5022.00	19.10	75.00	4881.52	250.45N	1.32	862.96	443054.21	535289.95
5085.00	19.60	75.70	4940.96	255.72N	0.87	883.83	443074.41	535295.22
5148.00	20.00	75.30	5000.24	261.07N	0.67	905.17	443095.07	535300.57
5212.00	20.60	74.30	5060.26	266.89N	1.08	927.37	443116.49	535306.39
5275.00	20.20	73.20	5119.31	273.03N	0.88	949.30	443137.58	535312.53
5338.00	19.30	72.80	5178.60	279.26N	1.44	970.56	443157.93	535318.76
5401.00	18.90	73.60	5238.14	285.22N	0.76	991.15	443177.67	535324.72
5464.00	18.60	74.60	5297.79	290.77N	0.70	1011.38	443197.14	535330.27
5527.00	18.30	74.30	5357.55	296.11N	0.50	1031.31	443216.35	535335.61
5591.00	18.70	73.90	5418.25	301.67N	0.66	1051.60	443235.88	535341.17
5654.00	19.20	74.30	5477.83	307.28N	0.82	1072.05	443255.56	535346.78
5717.00	19.20	75.70	5537.33	312.64N	0.73	1092.76	443275.57	535352.14
5781.00	19.30	76.40	5597.75	317.73N	0.39	1113.86	443296.05	535357.23
5844.00	18.90	74.60	5657.28	322.88N	1.13	1134.47	443316.00	535362.38
5907.00	18.90	72.80	5716.89	328.61N	0.93	1154.86	443335.59	535368.11
5970.00	18.40	70.00	5776.58	335.03N	1.63	1174.93	443354.68	535374.53
6033.00	18.20	71.80	5836.39	341.50N	0.95	1194.62	443373.37	535381.00
6096.00	17.50	73.20	5896.36	347.31N	1.30	1213.89	443391.78	535386.81
6159.00	17.40	74.60	5956.46	352.55N	0.69	1232.76	443409.93	535392.05
6211.00	16.30	76.74	6006.23	356.29N	2.43	1247.83	443424.53	535395.79
6273.00	15.30	80.30	6065.89	359.67N	2.25	1264.69	443441.06	535399.17
6337.00	14.90	79.20	6127.68	362.63N	0.77	1281.33	443457.47	535402.13
6400.00	14.70	80.90	6188.59	365.41N	0.76	1297.39	443473.32	535404.91
6464.00	14.20	82.00	6250.56	367.79N	0.89	1313.29	443489.11	535407.29
6527.00	14.10	80.20	6311.65	370.17N	0.72	1328.64	443504.32	535409.67

All data in feet unless otherwise stated. Calculation uses minimum curvature method.  
Coordinates from slot #1 and TVD from rotary table.

Bottom hole distance is 2047.62 on azimuth 77.02 degrees from wellhead.

Vertical section is from N 0.00 E 0.00 on azimuth 76.22 degrees.

Grid is mercator - New Mexico East (3001).

Grid coordinates in FEET and computed using the Clarke - 1866 spheroid

Presented by Baker Hughes INTEQ

Marathon Oil Company  
Indian Hills Unit 42, slot #1  
INDIAN BASIN, Eddy County New Mexico

SURVEY LISTING Page 6  
Your ref : SIDETRACK  
Last revised : 26-Jun-2002

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect	G R I D Easting	C O O R D S Northing
6589.00	14.60	77.80	6371.72	373.11N	1.25	1343.98	443519.40	535412.61
6650.00	15.80	76.00	6430.58	376.74N	2.11	1359.97	443534.98	535416.24
6713.00	16.90	78.20	6491.03	380.69N	2.00	1377.70	443552.26	535420.19
6776.00	16.70	82.70	6551.35	383.71N	2.09	1395.85	443570.21	535423.21
6837.00	17.50	83.40	6609.65	385.88N	1.35	1413.65	443588.01	535425.38
6898.00	18.40	85.90	6667.68	387.62N	1.94	1432.25	443606.73	535427.12
6962.00	18.60	86.20	6728.37	389.02N	0.35	1452.25	443626.98	535428.52
7034.00	18.10	85.90	6796.71	390.58N	0.71	1474.59	443649.60	535430.08
7098.00	18.50	84.50	6857.48	392.27N	0.93	1494.44	443669.62	535431.77
7159.00	19.10	82.70	6915.22	394.46N	1.37	1513.93	443689.15	535433.96
7221.00	19.00	82.40	6973.83	397.08N	0.23	1534.04	443709.22	535436.58
7283.00	19.20	80.10	7032.42	400.17N	1.26	1554.25	443729.27	535439.67
7347.00	18.60	79.90	7092.96	403.77N	0.94	1574.93	443749.68	535443.27
7395.00	17.85	81.45	7138.56	406.21N	1.87	1589.90	443764.49	535445.71
7411.00	17.60	82.00	7153.80	406.91N	1.87	1594.75	443769.31	535446.41
7475.00	16.60	85.20	7214.97	409.02N	2.14	1613.41	443788.01	535448.52
7538.00	16.50	86.90	7275.36	410.26N	0.78	1631.09	443805.91	535449.76
7602.00	16.80	88.00	7336.68	411.07N	0.68	1649.07	443824.23	535450.57
7665.00	17.30	88.30	7396.91	411.67N	0.81	1667.14	443842.69	535451.17
7729.00	18.10	86.90	7457.88	412.49N	1.42	1686.22	443862.13	535451.99
7793.00	19.10	84.10	7518.53	414.10N	2.09	1706.36	443882.47	535453.60
7857.00	18.70	85.20	7579.08	416.04N	0.84	1726.87	443903.11	535455.54
7920.00	18.20	85.50	7638.85	417.65N	0.81	1746.55	443922.98	535457.15
7983.00	18.20	83.80	7698.69	419.49N	0.84	1766.02	443942.57	535458.99
8046.00	17.80	82.70	7758.61	421.77N	0.83	1785.34	443961.90	535461.27

All data in feet unless otherwise stated. Calculation uses minimum curvature method.  
Coordinates from slot #1 and TVD from rotary table.

Bottom hole distance is 2047.62 on azimuth 77.02 degrees from wellhead.

Vertical section is from N 0.00 E 0.00 on azimuth 76.22 degrees.

Grid is mercator - New Mexico East (3001).

Grid coordinates in FEET and computed using the Clarke - 1866 spheroid

Presented by Baker Hughes INTEQ

Marathon Oil Company  
Indian Hills Unit 42, slot #1  
INDIAN BASIN, Eddy County New Mexico

SURVEY LISTING Page 7  
Your ref : SIDETRACK  
Last revised : 26-Jun-2002

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect	G R I D Easting	C O O R D S Northing
8103.00	17.30	80.30	7812.96	424.31N	1.54	1802.45	443978.90	535463.81
8166.00	17.20	81.70	7873.12	427.23N	0.68	1821.06	443997.35	535466.73
8227.00	17.20	81.70	7931.40	429.84N	0.00	1839.02	444015.20	535469.34
8462.00	17.20	81.70	8155.89	439.87N	0.00	1908.19	444083.96	535479.37
8935.00	17.20	81.70	8607.73	460.06N	0.00	2047.42	444222.37	535499.56

All data in feet unless otherwise stated. Calculation uses minimum curvature method.  
Coordinates from slot #1 and TVD from rotary table.  
Bottom hole distance is 2047.62 on azimuth 77.02 degrees from wellhead.  
Vertical section is from N 0.00 E 0.00 on azimuth 76.22 degrees.  
Grid is mercator - New Mexico East (3001).  
Grid coordinates in FEET and computed using the Clarke - 1866 spheroid  
Presented by Baker Hughes INTEQ

Marathon Oil Company  
Indian Hills Unit 42, slot #1  
INDIAN BASIN, Eddy County New Mexico

SURVEY LISTING Page 8  
Your ref : SIDETRACK  
Last revised : 26-Jun-2002

Comments in wellpath  
=====

MD	TVD	Rectangular Coords.	Comment
7395.00	7138.56	406.21N	1537.39E TOP OF WOLFCAMP
8166.00	7873.12	427.23N	1770.25E END OF BHT MWD SURVEYS
8227.00	7931.40	429.84N	1788.10E TOP OF CISCO
8462.00	8155.89	439.87N	1856.86E TOP OF CANYON

Targets associated with this wellpath  
=====

Target name	Geographic Location	T.V.D.	Rectangular Coordinates	Revised
BASE OF UPPER PENN		8350.00	556.70N	1977.97E 7-Nov-2001
TOP OF UPPER PENN	443990.700, 535547.900, 0.00000	7750.00	508.40N	1763.60E 7-Nov-2001

6-24-2002

- Talked w/ Walter

Drease @ 3:00 pm

- is sending me a copy  
of the directional  
survey w/ to be initiated.

## Stogner, Michael

---

**From:** Stogner, Michael  
**Sent:** Wednesday, May 15, 2002 6:47 PM  
**To:** 'Tom Kellahin'  
**Subject:** RE: Marathon's Indian Hillis 42

Tom, I still have the file here on my desk; however, more pressing matters seem to keep getting in its way. I'll try to have it out right after: (i) the Ocean, Arrington, TMBR/Sharpe Case is heard; (ii) the Richardson Order is drafted; and (iii) I find out what is important at the Engineering Bureau meeting on Monday. I'm sorry for the delay.

-----Original Message-----

**From:** Tom Kellahin [mailto:t.kellahin@worldnet.att.net]  
**Sent:** Wednesday, May 08, 2002 11:23 AM  
**To:** Michael E. Stogner  
**Subject:** Marathon's Indian Hillis 42

Dear Mike:

On February 28, 2002, I filed the supplemental information you asked for on February 14, 2002.

On March 27, 2002, you gave me verbal approval for the NSL.

I cannot find an order. Please let me know the status.

Thanks, Tom

**Stogner, Michael**

---

**From:** Tom Kellahin [t.kellahin@worldnet.att.net]  
**Sent:** Wednesday, May 08, 2002 11:23 AM  
**To:** Michael E. Stogner  
**Subject:** Marathon's Indian Hillis 42

Dear Mike:

On February 28, 2002, I filed the supplemental information you asked for on February 14, 2002.

On March 27, 2002, you gave me verbal approval for the NSL.

I cannot find an order. Please let me know the status.

Thanks, Tom

5/15/2002



TO: <b>Mike Stogner</b>	FROM: <b>Kellahin</b>	DATE: / /	DISTR. SEC. 1055
FAX #:	FAX #:	PAGES INCLUDING THIS PAGE:	
	PHONE #:		

## KELLAHIN AND KELLAHIN

ATTORNEYS AT LAW

EL PATIO BUILDING

117 NORTH SHADLURE

POST OFFICE BOX 2265

SANTA FE, NEW MEXICO 87501-2265

TELEPHONE (505) 982-4285

TELEFAX (505) 982-2047

W. THOMAS KELLAHIN

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

JASON KELLAHIN (RETIRED 1991)

February 28, 2002

Mr. Michael E. Stogner  
Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

HAND DELIVERED

RE: **Indian Hills Unit Well No. A42**  
**S/2 Section 17, T21S R24E**  
Indian Basin-Morrow Gas Pool  
Administrative Application of Marathon Oil Company for Approval  
of an Unorthodox Subsurface Location, Eddy County, New Mexico

Dear Mr. Stogner:

On behalf of Marathon Oil Company ("Marathon"), I am responding to your letter of February 14, 2002 in which you request that I submit additional information by February 28, 2002. In response, I have the following:

(1) Plat show the wells and owners

(2) You asked about the status of the Indian Basin-Upper Pennsylvania Land Office letter dated February 2002. Exhibits "B" and "C"

(3) While you may no longer require the working interest, royalty Exhibits "D" and "E"

(4) This application by Marathon does not cover the Wolfcamp or Strawn formations and the

(5) Attached is a letter from Steve Millican, Marathon, providing the information you request concerning the various formation tops. Exhibit "F"

Very truly yours,



W. Thomas Kellahin

cc: Marathon Oil Company  
Attn: Steven F. Millican

*Mike -*  
*MARATHON*  
*ASK me TO*  
*check on*  
*STATUS*

the  
date  
7,

under the  
this time.

*Tom*

**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

JASON KELLAHIN (RETIRED 1991)

TELEPHONE (505) 982-4285  
TELEFAX (505) 982-2047

February 28, 2002

Mr. Michael E. Stogner  
Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

**HAND DELIVERED**

RE: **Indian Hills Unit Well No. 342**  
**S/2 Section 17, T21S R24E**  
Indian Basin-Morrow Gas Pool  
Administrative Application of Marathon Oil Company for Approval  
of an Unorthodox Subsurface Location, Eddy County, New Mexico

Dear Mr. Stogner:

On behalf of Marathon Oil Company ("Marathon"), I am responding to your letter of February 14, 2002 in which you request that I submit additional information by February 28, 2002. In respond, I have the following:

- (1) Plat show the wells and owners Exhibit "A"
- (2) You asked about the statues of the expanding of the Participating area for the Indian Basin-Upper Pennsylvanian Pool. Attached are approvals from the State Land Office letter dated February 19, 2002 and the BLM dated February 27, 2002. Exhibits "B" and "C"
- (3) While you may no longer require it, attached is the notice letter and notice list for the working interest, royalty and overriding royalty owners in affected. Exhibits "D" and "E"
- (4) This application by Marathon does not seek location approval for either the Wolfcamp or Strawn formations and there is no PA for either at this time.
- (5) Attached is a letter from Steve Millican providing the information you request concerning the various formation tops. Exhibits "F"

Very truly yours,



W. Thomas Kellahin

fx: Marathon Oil Company  
Attn: Steven F. Millican

**EXHIBIT "C"**  
**INDIAN HILLS UNIT**  
**UPPER PENNSYLVANIAN PARTICIPATING AREA**  
**EDDY COUNTY, NEW MEXICO**

<b>Mineral Interest Owners</b> Sec. 16, S/2 17, 20 & 21:	
Marathon Oil Company	80.09601 %
Nearburg Exploration	.38582 %
<b>Royalty Interest Owner</b> S/2 Sec. 17 & all Sec. 20 & 21:	
Minerals Management Service	12.5 %
<b>Royalty Interest Owner - Section 18:</b>	
State of New Mexico	12.5 %
<b>Overriding Royalty Interest Owners</b> Section 16, S/2 17, 20 & 21:	
Marathon Oil Company	4.15580 %
Barbara B. Talento	.03038 %
Bonnie M. Morrison	.08101 %
Charles Hinton	.01977 %
Charles W. Perry, Jr.	.01187 %
Dorothy C. Frenzel	.01878 %
E. Bernard Johnston	.08848 %
Ellnor M. Chase	.00791 %
Hoover H. Wright	.01709 %
James P. Murphy	.00398 %
Jeffrey D. Landua	.00791 %
Joe B. Schutz	.01709 %
John C. Stanfield	.00791 %
Louis Dreyfus Natural Gas Corporation	1.00000 %
Marjorie F. Chase	.00198 %
Mary Ann Chase	.00198 %
Mary Ellen Johnston	.08645 %
New Mexico Oil Corporation	.02631 %
Parker Wilson	.03418 %
Ralph A. Shugart Trust	.13291 %
Richard P. Montoya	.06836 %
Rimco Partners, L.P. I	.05582 %
Rimco Partners, L.P. II	.09037 %
Rimco Partners, L.P. III	.03895 %
Roswell Museum & Foundation	.03164 %
Samuel Chase	.00198 %
Sandra Taylor Landua	.00791 %
Sarah Louise Harrington	.00633 %
Steve Chase	.00197 %
The Home-Stake Oil & Gas Company	.07822 %
Nancy Allen	.00844 %
Jamie E. Jennings	.00844 %
Susan Croft	.00844 %
Jane Armstrong	.00395 %

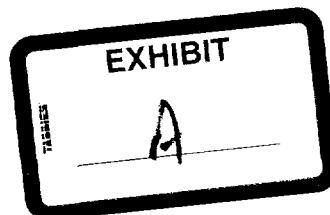
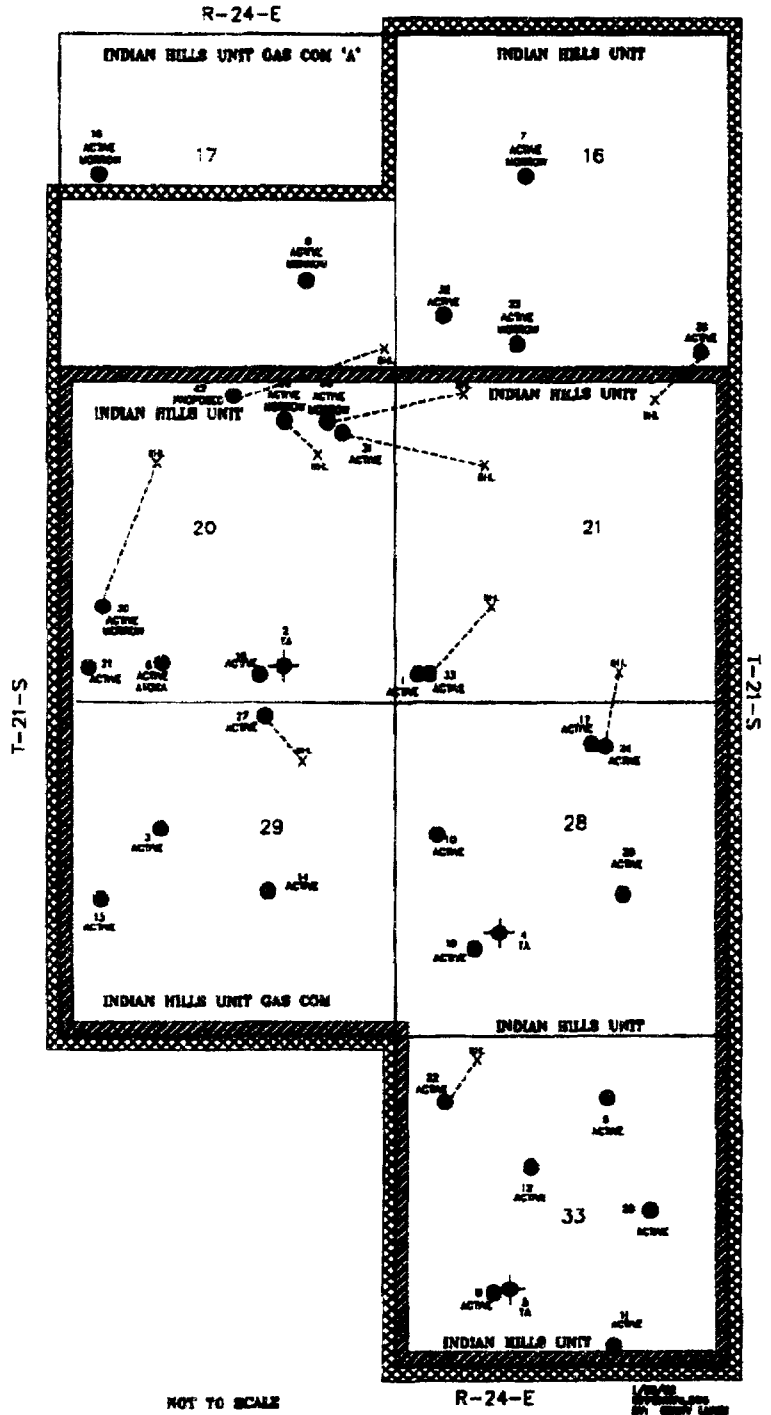
**INDIAN HILLS UNIT BOUNDARY**



**PROPOSED UPPER  
PENNSYLVANIAN  
PARTICIPATING AREA**



**EXISTING UPPER  
PENNSYLVANIAN  
PARTICIPATING AREA**



**COMMISSIONER'S OFFICE**

Phone (505) 827-5760

Fax (505) 827-5766

**ADMINISTRATION**

Phone (505) 827-5700

Fax (505) 827-5853

**GENERAL COUNSEL**

Phone (505) 827-5713

Fax (505) 827-4262

**PUBLIC AFFAIRS**

Phone (505) 827-1245

Fax (505) 827-5766



**New Mexico State Land Office  
Commissioner of Public Lands  
Ray Powell, M.S., D.V.M.**

**COMMERCIAL RESOURCES**

Phone (505) 827-5724

Fax (505) 827-6157

**MINERAL RESOURCES**

Phone (505) 827-5744

Fax (505) 827-4739

**ROYALTY MANAGEMENT**

Phone (505) 827-5772

Fax (505) 827-4739

**SURFACE RESOURCES**

Phone (505) 827-5793

Fax (505) 827-5711

February 19, 2002

Marathon Oil Company  
P.O. Box 552  
Midland, Texas 79702-0552

Attn: Ms. Ginny Larke

Re: Revised Fifth Revision Application  
Indian Hills Unit  
Upper Pennsylvanian Participating Area  
Eddy County, New Mexico

Dear Ms. Larke:

We are in receipt of your letter of February 11, 2002, regarding the correction to the above-captioned participating area.

Your corrected participating area is hereby accepted, and our files have been updated.

If you have any questions or if we may be of further help, please contact Pete Martinez at (505) 827-5791.

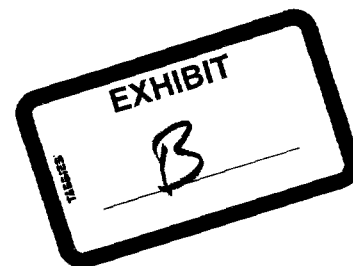
Very truly yours,

RAY POWELL, M.S., D.V.M.  
COMMISSIONER OF PUBLIC LANDS

BY: 

PETE MARTINEZ  
Oil/Gas and Minerals Division  
(505) 827-5791

RP/PM/cpm  
xc: Reader File



**"WE WORK FOR EDUCATION"**

310 Old Santa Fe Trail, P.O. Box 1140 Santa Fe, New Mexico 87504-1140



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Roswell Field Office  
2909 West Second Street  
Roswell, New Mexico 88201

IN REPLY REFER TO:

140800018501  
NMNM70964A  
3180 (06300)

FEB 27 2002

Marathon Oil Company  
Attn: K.W. Tatarzyn  
P.O. Box 552  
Midland, Texas 79702



Re: Indian Hills Unit Area  
Fifth Revision of the Upper Pennsylvanian Participating Area  
Eddy County, New Mexico

Dear Mr. Tatarzyn,

Pursuant to your letter and geological report dated February 11, 2002, we have reviewed your application and concur with your recommendation that the Upper Pennsylvanian participating area be expanded to include the following lands:

T. 21 S., R. 24 E., NMPM  
Section 16: All - 640 acres  
Section 17: S/2 - 343.86 acres  
Eddy County, New Mexico

This fifth revision is based on the completion of the Indian Hills Unit #32, located 1293' FSL and 650' FWL, Section 16, T. 21 S., R. 24 E., in the Upper Pennsylvanian formation effective June 23, 2001. This well was determined to be a paying well pursuant to Section 11 of the unit agreement by our letter dated January 15, 2002.

The fifth revision of the Upper Pennsylvanian participating area, Indian Hills Unit, Eddy County, New Mexico is hereby approved effective June 1, 2001. This participating area is assigned AFS# 891-008501. The purpose of this number is for the reporting of production to the Minerals Management Service (MMS).

You have also submitted a revised Exhibit B for the fifth revision of the Upper Pennsylvanian participating area which shows all the lands included in the participating area. It will be reviewed by Mary Lou Ormseth, 505-627-0258.

Copies of the approved application are being distributed to the appropriate agencies. One approved copy is returned to you for your records. You are requested to furnish all interested principals with the

evidence of this approval.

If you have any questions, please contact Alexis C. Swoboda, P.E. at 505-627-0228.

Sincerely,

A handwritten signature in black ink, appearing to read "Larry D. Bray". The signature is fluid and cursive, with the first name "Larry" and last name "Bray" clearly distinguishable.

Larry D. Bray  
Assistant Field Manager  
Lands and Minerals

February 25, 2002

Re: Application for an Unorthodox Well Location for the Indian Hills Unit Well No. 42

Surface Location: UL "B", 475' FNL and 2522' FEL, Section 20, T-21-S, R-24-E, Eddy County, New Mexico

Bottom Hole Location: UL "P", 283' FSL and 142' FEL, Section 17, T-21-S, R-24-E, Eddy County, NM

Dear Sir or Madam:

Marathon Oil Company plans to directionally drill the above referenced well to a primary unorthodox location in the Upper Penn formation with secondary unorthodox locations in the Wolfcamp and Strawn formations. This well does not conform to the 660' spacing requirement from the outer boundary of the Gas Proration Unit (GPU) for any of the three formations to be penetrated. This 660' set back is required by the Special Rules and Regulations for the Indian Basin Upper Pennsylvanian Associated Gas Pool, General Rules for the Associated Gas Pools of Southeast New Mexico, and Statewide Rule 104C. Based on the proposed directional plan, it is expected that the top of the Upper Penn formation will be penetrated at 134' FSL & 538' FEL of Section 17. The top of the Wolfcamp is expected to be penetrated at 55' FSL and 764' FEL of Section 17, and the top of the Strawn is expected to be penetrated at 228' FSL and 271' FEL of Section 17. The Wolfcamp and Strawn formations are secondary targets that may have hydrocarbon potential and could be completed after the Upper Pennsylvanian formation is depleted.

Marathon believes this unorthodox location is the optimum location for this well to minimize geological risk and optimize reservoir drainage. Since the location is unorthodox within the Indian Hills Unit Upper Pennsylvanian Participating Area, it poses no threat to the correlative rights of any interest owner. In layman's terms, Marathon believes that approval of this location will prevent waste and benefit all royalty interest owners, overriding royalty interest owners, and mineral interest owners in the Indian Hills Unit.

This letter is to inform you, as an offset operator or interest owner, of Marathon's intention to request administrative approval for this non-standard location. If you have an objection to this application, it must be filed, in writing, with the New Mexico Oil Conservation Division, 1220 S. St. Francis Dr., Santa Fe, New Mexico 87504, within 20 days from the date of this letter. Should you have no objection to this location, please sign below and return an executed copy of this letter to me in the envelope provided. The application for administrative approval for this location will be sent to the Oil Conservation Division in Santa Fe as soon as possible. If you have any questions or need more information, please call me at (915) 687-8321, or Steve Millican at (915) 687-8306.

Sincerely,

Ginny Larke  
Engineer Technician  
Indian Basin Asset Team

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_



Barbara B. Talento  
3758 Mauna Loa Street  
Brea, California 92823-6328

Bonnie M. Morrison  
C/O Norwest Bank New Mexico NA  
400 N. Pennsylvania Ave.  
Roswell, NM 88201-4754

Charles Hinton  
9426 Sanford  
Houston, TX 77031-3-2218

Charles W. Perry, Jr.  
P.O. Box 371  
Midland, TX 79702-0371

Dorothy C. Frenzel  
130 Abell Hanger Circle  
Midland, TX 79707-6140

E. Bernard Johnston  
2715 N. Kentucky # 16  
Roswell, NM 882051-5868

Elinor M. Chase  
1303 W. Kansas  
Midland, TX 79701-6036

Hoover H. Wright  
P.O. Box 2312  
Santa Fe, NM 87504-2312

James P. Murphy  
2817 Stutz Dr.  
Midland, TX 79705-4929

Jeffrey D. Landua  
P.O. Box 2296  
Brenham, TX 77834-2296

Joe B. Schutz  
P.O. Box 973  
Santa Fe, NM 87504-0973

John C. Stanfield  
2314 Maxwell  
Midland, TX 79705-4910

Louis Dreyfus Natural Gas Corporation  
14000 Quail Springs Parkway, Suite 600  
Oklahoma City, OK 73134





Marjorie F. Chase  
1303 W. Kansas  
Midland, TX 79701-6036

Mary Ann Chase  
89 Sunnyside Dr.  
Athens, OH 45701-1921

Mary Ellen Johnston  
2714 N. Kentucky # 16  
Roswell, NM 88201-5868

Nearburg Exploration Company  
3300 N. A Street  
Building 2 Suite 120  
Midland, TX 79705-5421

New Mexico Oil Corporation  
P.O. Box 1714  
Roswell, NM 88202-1714

Parker Wilson  
P.O. Box 1297  
Santa Fe, NM 87504-1297

Ralph A. Shugart Trust  
Elizabeth Duncan, Special Trustee  
300 S. Jackson, Suite 500  
Denver, Co 80209-3133

Richard P. Montoya  
1425 Galisteo  
Santa Fe, NM 87505-4669

Rimco Partners, L.P. I  
C/O Rimco Associates, Inc.  
22 Waterville Rd.  
Avon, Connecticut 06001-2066

Rimco Partners, L.P. II  
C/O Rimco Associates, Inc.  
22 Waterville Rd.  
Avon, Connecticut 06001-2066

Rimco Partners, L.P. III  
C/O Rimco Associates, Inc.  
6300 Bridgepoint Parkway  
Building 2, # 500  
Austin, TX 78730-5016

Roswell Museum & Foundation  
100 W. Eleventh Street  
Roswell, NM 88201-4910

Samuel Chase  
19 Bonita Street  
Sausalito, CA 94965-2113

Sandra Taylor Landua  
2004 Community Lane  
Midland, TX 79701-4016

Sarah Louise Harrington  
2602 Bay Meadows Dr.  
Roswell, N M 88201-5204

Steve Chase  
1303 W. Kansas  
Midland, TX 79701-6036

The Home-Stake Oil & Gas Company  
2800 First National Tower  
Tulsa, OK 74103

Nancy Allen  
3623 Overlook Dr.  
Dallas, TX 75205-0000

Jamie E. Jennings  
P.O. Box 670326  
Dallas, TX 75367-0326

Susan Croft  
6713 Deep Valley Lane  
Ft. Worth, TX 76132-1121

Jane Armstrong  
301 N. Colorado, Suite 108  
Midland, TX 79701-4608

Southern U.S. Business Unit  
Domestic Production



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

February 27, 2002

W. Thomas Kellahin  
Kellahin & Kellahin  
El Patio Building  
117 North Guadalupe  
Post Office Box 2265  
Santa Fe, New Mexico 87504-2265

RE: Indian Hills Unit Well No. 42  
Non-Standard Location Application

Dear Tom:

As a clarification requested by Mr. Stogner, below is a listing of the depths and footages of the three formations identified in the Baker Inteq directional wellbore plat included as Attachment #2 in our original non-standard application for Indian Hills Unit Well No. 42.

	MD	TVD	Footages
Wolfcamp Top:	7062'	6909'	55' FSL & 764' FEL
Upper Penn Top:	8048'	7750'	134' FSL & 538' FEL
Base of Upper Penn Dolomite:	8682'	8350'	203' FSL & 343' FEL
Base of Upper Penn:	8827'	8487'	228' FSL & 271' FEL
Strawn Top:	8827'	8487'	228' FSL & 271' FEL

Please note that the descriptor on Attachment #2 referred to as "B. Upper Penn" was insufficiently identified. That location and its corresponding depth reference the base of the Upper Pennsylvanian Dolomite, and hence the lowest possible porous reservoir rock. The true geologic base of the Upper Pennsylvanian formation is also the top of the Strawn formation.

In addition, today notification letters were sent via certified mail to all 34 overriding royalty owners in the Indian Hills Unit as requested by Mr. Stogner. Additional notification was provided the BLM, the State of New Mexico, and our one working interest partner. Copies of each of these letters can be provided upon request. Further, attached with this letter is a final revision of the plat illustrating all of the various working and royalty owners in the area requested by Mr. Stogner.

Finally, at this point in time, you should be in possession of both State and Federal approvals of the Revised Fifth Revision of the Indian Hills Unit Upper Pennsylvanian Participating Area.

Please let me know if there is anything else I can do to help expedite the processing of our application at (915) 687-8306.

Respectfully,

Steven F. Millican  
Operations Engineer  
Indian Basin Asset Team  
Marathon Oil Company

A subsidiary of USX Corporation





*Marathon.13*

# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**GARY E. JOHNSON**  
Governor  
**Betty Rivera**  
Cabinet Secretary

February 14, 2002

**Lori Wrotenbery**  
Director  
Oil Conservation Division

**Marathon Oil Company**  
c/o **W. Thomas Kellahin**  
**P. O. Box 2265**  
**Santa Fe, New Mexico 87504-2265**

**Telefax No. (505) 982-2047**

*Re: Administrative application for Marathon Oil Company's proposed Indian Hills Unit Well No. 42 to be directionally drilled to an unorthodox subsurface location within the S/2 equivalent of Section 17, Township 21 South, Range 24 East, NMPM, Eddy County, New Mexico.*

Dear Mr. Kellahin:

This letter acknowledges the receipt of your application filed on behalf of the operator, Marathon Oil Company (NMOCD application reference No. pKRV0-201555225) that was submitted on January 14, 2002.

I have reviewed your application with respect to notice and find the following variables that lead me to rule this application incomplete:

The subsurface location of this wellbore will be as close as 142 feet to Section 16, which section is 100 % State of New Mexico royalty.

Marathon's Indian Hills Unit Well No. 32 (API No. 30-015-31591), located at a previously approved unorthodox location 1293 feet from the South line and 660 feet from the West line (Unit M) of Section 16, is currently producing from the Indian Basin-Upper Pennsylvanian Associated Pool and is dedicated to a standard 320-acre stand-up spacing and proration unit comprising the W/2 of Section 16. This unit has not yet been placed in the Unit's participating area.

Your map indicates that Marathon's proposed upper-Pennsylvanian participating area will comprise the S/2 of Section 16.

Participating areas are never guaranteed and with this well being as close as 142 feet to Section 16, drainage could occur without adequate compensation to the royalty interest.

Marathon Oil Company  
c/o W. Thomas Kellahin  
February 14, 2002  
Page 2

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Also, there is currently no Wolfcamp or Strawn participating area with the Indian Hills Unit. If production were encountered within either zone, more then likely only the S/2 of Section 17 would be placed in a participating area, if at all.

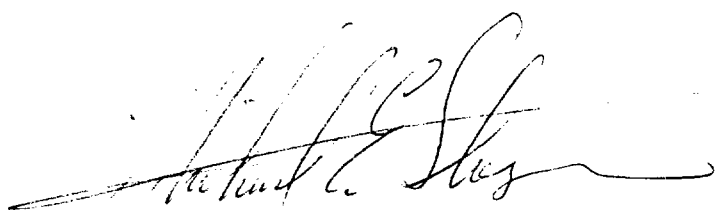
In order to assure that correlative rights of all affected interest owners is adequately protected under Section 70-2-11 NMSA 1878, please identify on a plat and show percentages of all interests (royalty, overriding royalty, and working) in the S/2 of Section 17, and all of Sections 16, 20, and 21 and provide notice to all parties listed.

Further, so that I may draft an order in this matter additional information is needed. What is the corresponding depth of the top of Wolfcamp to the expected 54.63' FSL & 764.45' FEL location shown on the Baker-Hughes proposed wellbore schematic? Also on this schematic you show the base of the Upper-Pennsylvanian to be 8,682 feet at a corresponding subsurface location 202.55' FSL & 343.42' FEL and an unidentified Strawn entry at 228.07' FSL & 270.77' FEL. Assuming the base of the upper-Pennsylvanian is also the top of the Strawn, what is this Strawn entry depicting?

Since the submitted application is insufficient, the application remains incomplete as of February 14, 2002. Please submit the above stated information and proof of notice by Thursday, February 28, 2002.

The Division cannot proceed with your application until the required information is submitted. Upon receipt, the Division will continue to process your application. The additional information can be faxed to (505) 476-3471, or mailed to the Division in Santa Fe. If the necessary information is not submitted, your application will be returned to you.

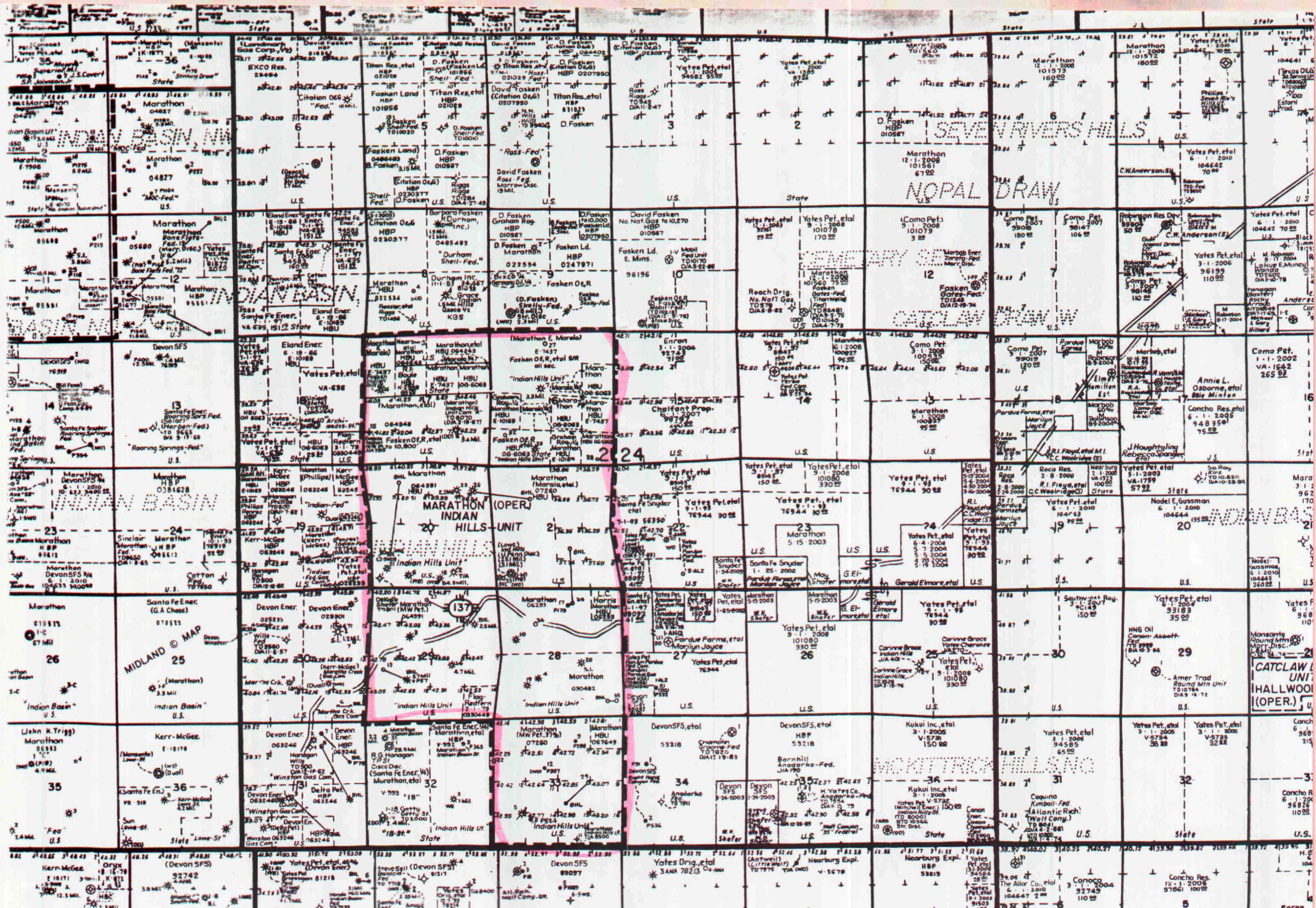
Sincerely,

A handwritten signature in black ink, appearing to read "Michael E. Stogner", with a long horizontal flourish extending to the right.

Michael E. Stogner  
Chief Hearing Officer/Engineer

cc: New Mexico Oil Conservation Division – Artesia  
New Mexico State Land Office – Santa Fe  
U. S. Bureau of Land Management - Carlsbad







Unit Name: Indian Hills

Contract Number: 14-08-0001-8501

Automatic Elimination Date: No Elimination, all Unit Lands in PA on or before  
July 2, 1968

Operator: Marathon Oil Company

PARTICIPATING AREAS (PA)

Name: Initial Lower Pennsylvanian (Morrow)

Well Name: Indian Hills Unit No. 7

Location: SE $\frac{1}{4}$ NW $\frac{1}{4}$  Sec. 16, T. 21 S., R. 24 E.

Legal PA Description: All Sec. 16, T. 21 S., R. 24 E.

Effective Date: September 25, 1968

PA Total Acres: 640.00

Name: 1st Revision Lower Pennsylvanian (Morrow)

Well Name: Indian Hills Unit No. 6-A

Location: NE $\frac{1}{4}$ SE $\frac{1}{4}$  Sec. 17, T. 21 S., R. 24 E.

Legal PA Description: All Sec. 17, T. 21 S., R. 24 E. - 640.00 acres

Effective Date: October 1, 1968

PA Total Acres: 1,280.00





INDIAN HILLS UNIT AREA

14-08-0001-8501

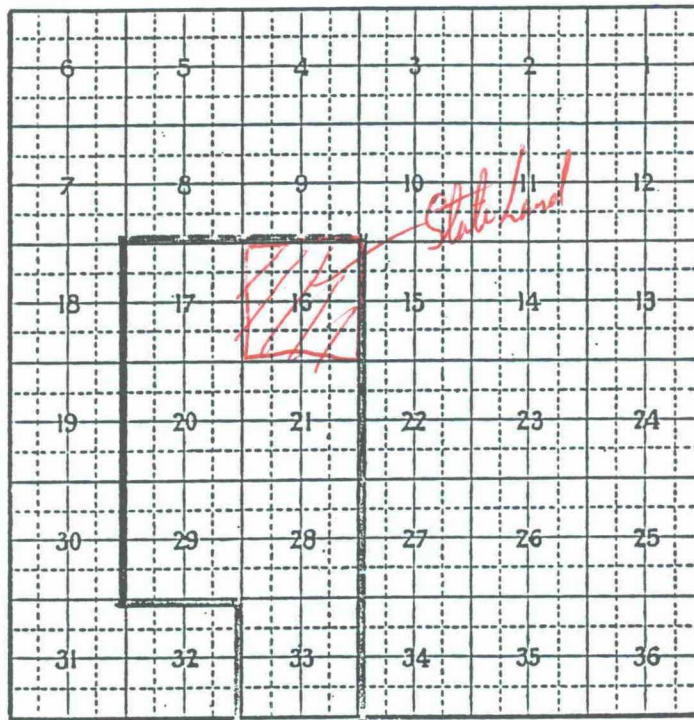
APPROVED: February 20, 1963

EFFECTIVE: February 20, 1963

EXPLORATORY

Eddy County, New Mexico

 gulram, inc.  
petroleum engineering and government regulation consultants



T  
21  
S

R 24 E

Unit Lands

Federal 3,640.00 acres

State 840.00 acres

Total 4,480.00 acres

Unit Name: Indian Hills

Contract Number: 14-08-0001-8501

Automatic Elimination Date: No Elimination, all unit lands in PA on or before  
July 2, 1968

Operator: Marathon Oil Company

PARTICIPATING AREAS (PA)

Name: Initial Upper Pennsylvanian

Well Name: Indian Hills Unit No. 1

Location: SW $\frac{1}{4}$ SW $\frac{1}{4}$  Sec. 21, T. 21 S., R. 24 E.

Legal PA Description: E $\frac{1}{2}$  Sec. 20, All Sec. 21, N $\frac{1}{2}$  Sec. 28, NE $\frac{1}{4}$  Sec. 29,  
T. 21 S., R. 24 E.

Effective Date: June 14, 1963

PA Total Acres: 1,440.00

Name: 1st Revision Upper Pennsylvanian

Well Name: Teepee State No. 1 (Hanagan Petroleum Corporation)

Location: NW $\frac{1}{4}$ NW $\frac{1}{4}$  Sec. 32, T. 21 S., R. 24 E.

Legal PA Description: S $\frac{1}{2}$  Sec. 29, T. 21 S., R. 24 E. - 320.00 acres

Effective Date: January 1, 1964

PA Total Acres: 1,760.00

Name: 2nd Revision Upper Pennsylvanian

Well Name: Indian Federal No. 1 (Penroc Oil Corporation)

Location: SW $\frac{1}{4}$ NE $\frac{1}{4}$  Sec. 19, T. 21 S., R. 24 E.

Legal PA Description: W $\frac{1}{2}$  Sec. 20, NW $\frac{1}{4}$  Sec. 29, T. 21 S., R. 24 E. - 480.00 acres

Effective Date: February 1, 1964

PA Total Acres: 2,240.00

Name: 3rd Revision Upper Pennsylvanian

Well Name: Walt Canyon Unit No. 2 (Atlantic Richfield Company)

Location: NW $\frac{1}{4}$ NW $\frac{1}{4}$  Sec. 4, T. 22 S., R. 24 E.

Legal PA Description: S $\frac{1}{2}$  Sec. 33, T. 21 S., R. 24 E. - 320.00 acres

Effective Date: July 1, 1964

PA Total Acres: 2,560.00

(Continued)



Unit Name: Indian Hills

PARTICIPATING AREAS (PA)

Name: 4th Revision Upper Pennsylvanian

Well Name: Indian Hills Unit No. 4

Location: NE $\frac{1}{4}$ SW $\frac{1}{4}$  Sec. 28, T. 21 S., R. 24 E.

Legal PA Description: S $\frac{1}{2}$  Sec. 28, N $\frac{1}{2}$  Sec. 33, T. 21 S., R. 24 E. - 640.00 acres

Effective Date: December 1, 1965

PA Total Acres: 3,200.00



BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION OF NEW MEXICO FOR  
THE PURPOSE OF CONSIDERING:

CASE No. 2748  
Order No. R-2420

APPLICATION OF RALPH LOWE  
FOR APPROVAL OF THE INDIAN  
HILLS UNIT AGREEMENT, EDDY  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on February 6, 1963, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 6th day of February, 1963, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Ralph Lowe, seeks approval of the Indian Hills Unit Agreement covering 4,480 acres, more or less, of State and Federal lands in Township 21 South, Range 24 East, NMPM, Eddy County, New Mexico.

(3) That approval of the proposed Indian Hills Unit Agreement will in principle tend to promote the conservation of oil and gas and the prevention of waste.

IT IS THEREFORE ORDERED:

(1) That the Indian Hills Unit Agreement is hereby approved.

(2) That the plan under which the unit area shall be operated shall be embraced in the form of a unit agreement for the development and operation of the Indian Hills Unit Area, and such plan shall be known as the Indian Hills Unit Agreement Plan.

(3) That the Indian Hills Unit Agreement Plan is hereby approved in principle as a proper conservation measure; provided, however, that notwithstanding any of the provisions contained in said unit agreement, this approval shall not be considered as waiving or relinquishing, in any manner, any right, duty, or obligation which is now, or may hereafter be, vested in the Oil Conservation Commission of New Mexico by law relative to the supervision and control of operations for the exploration and development of any lands committed to the Indian Hills Unit, or relative to the production of oil or gas therefrom.

(4) (a) That the unit area shall be:

NEW MEXICO PRINCIPAL MERIDIAN

EDDY COUNTY, NEW MEXICO  
TOWNSHIP 21 SOUTH, RANGE 24 EAST

Section 16: All  
Section 17: All  
Section 20: All  
Section 21: All  
Section 28: All  
Section 29: All  
Section 33: All

containing 4,480 acres, more or less.

(b) That the unit area may be enlarged or contracted as provided in said plan; provided, however, that administrative approval for expansion or contraction of the unit area must also be obtained from the Secretary-Director of the Commission.

(5) That the unit operator shall file with the Commission an executed original or executed counterpart of the Indian Hills Unit Agreement within 30 days after the effective date thereof. In the event of subsequent joinder by any party or expansion or contraction of the unit area, the unit operator shall file with the Commission within 30 days thereafter counterparts of the unit agreement reflecting the subscription of those interests having joined or ratified.

(6) That this order shall become effective upon the approval of said unit agreement by the Commissioner of Public Lands for the State of New Mexico and the Director of the United States Geological Survey, and shall terminate ipso facto upon the termination of said unit agreement. The last unit operator shall notify the Commission immediately in writing of such termination.

(7) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

-3-

CASE No. 2748

Order No. R-2420

DONE at Santa Fe, New Mexico, on the day and year herein-  
above designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

JACK M. CAMPBELL, Chairman

E. S. WALKER, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

esr/

County Eddy

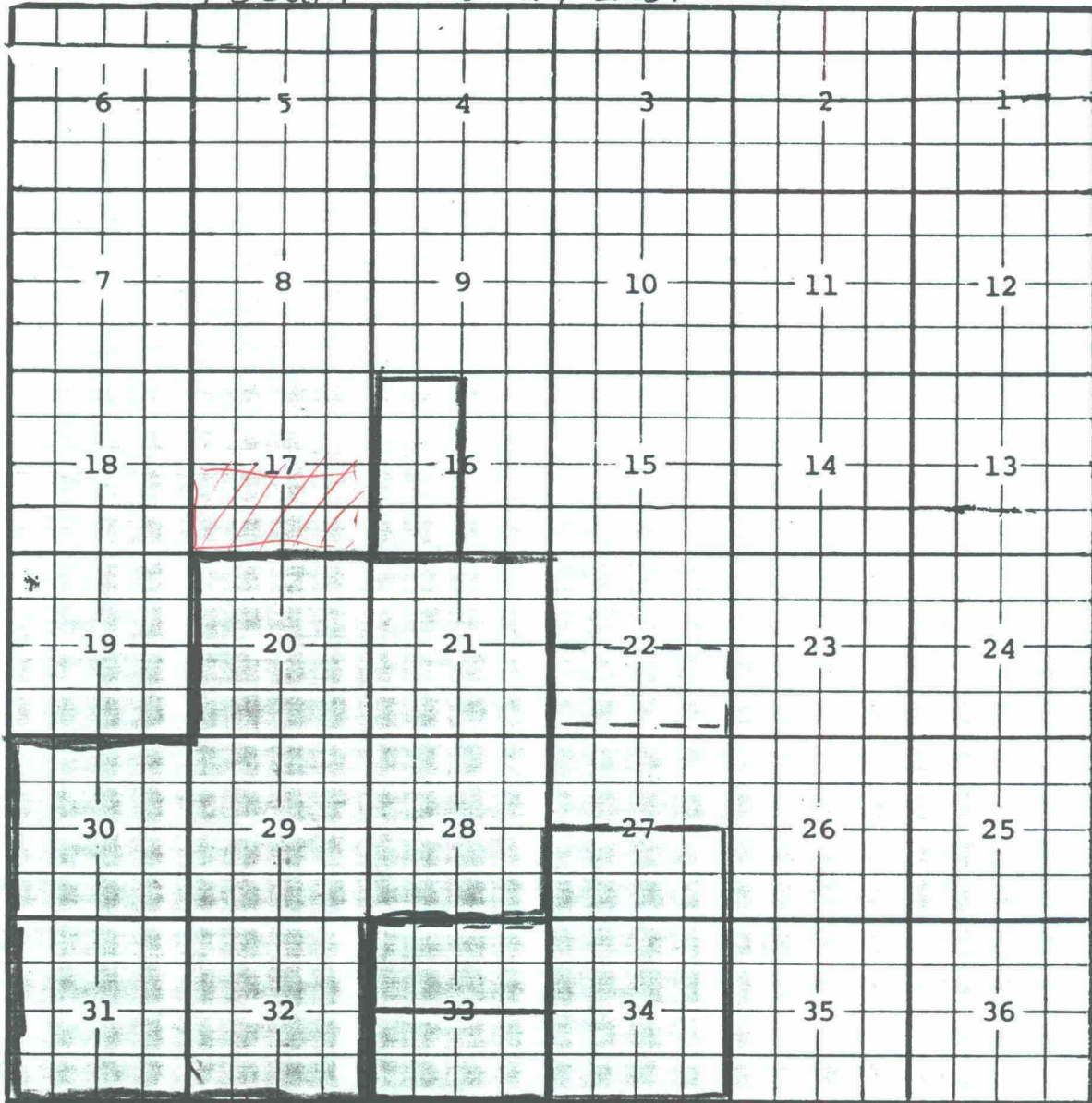
Pool Indian Basin-Upper Pennsylvanian  
Associated

TOWNSHIP

21 South

Range 24 East

NMPM



Ext:  $\frac{5}{2}$  Sec. 27, All Sec. 34 (R-9963, 9-20-93)

Ext:  $\frac{5}{2}$  Sec. 33 (R-10518, 10-20-95) Ext:  $\frac{N}{2}$  Sec. 33 (R-10664, 9-16-96)

Ext: All Secs. 20, 21, 28, 29, 30, 31, 32 (R-9922-D, 12-7-98)

Ext:  $\frac{W}{2}$  Sec. 16 (R-11678, 10-23-01)



Pool Indian Basin-Strawn Gas

NMPM



Description: S/2 Sec. 9 (R-9844, 2-8-93)

Ext: 1/2 Sec. 8 (R-10324, 3-7-95) Ext: 1/2 Sec. 10 (R-10844, 2-16-97)

CMD : ONGARD 02/13/02 12:31:  
 OG6ACRE C102-DEDICATE ACREAGE OGOMES -TP  
 Page No :

API Well No : 30 15 31591 Eff Date : 06-23-2001  
 Pool Idn : 33685 INDIAN BASIN;UPPER PENN (ASSOC)  
 Prop Idn : 6409 INDIAN HILLS UNIT Well No : 03  
 Spacing Unit : 54833 OCD Order : Simultaneous Dedication:  
 Sect/Twp/Rng : Acreage : 320.00 Revised C102? (Y/N) :  
 Dedicated Land:

S	Base	U/L	Sec	Twp	Rng	Acreage	L/W	Ownership	Lot	Idn
	C	16	21S	24E	40.00	N	ST			
	D	16	21S	24E	40.00	N	ST			
	E	16	21S	24E	40.00	N	ST			
	F	16	21S	24E	40.00	N	ST			
	K	16	21S	24E	40.00	N	ST			
	L	16	21S	24E	40.00	N	ST			
	M	16	21S	24E	40.00	N	ST			
	N	16	21S	24E	40.00	N	ST			

E0005: Enter data to modify or PF keys to scroll

PF01 HELP PF02 PF03 EXIT PF04 GoTo PF05 PF06 CONFIRM  
 PF07 BKWD PF08 FWD PF09 PF10 LAND PF11 NXTSEC PF12 RECONF

CMD : ONGARD 02/13/02 12:31:  
 OG6ACRE C102-DEDICATE ACREAGE OGOMES -TP  
 Page No :

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S	Base	U/L	Sec	Twp	Rng	Acreage	L/W	Ownership	Lot	Idn
	C	16		21S	24E	40.00	N	ST		
	D	16		21S	24E	40.00	N	ST		
	E	16		21S	24E	40.00	N	ST		
	F	16		21S	24E	40.00	N	ST		
	K	16		21S	24E	40.00	N	ST		
	L	16		21S	24E	40.00	N	ST		
	M	16		21S	24E	40.00	N	ST		
	N	16		21S	24E	40.00	N	ST		

E0005: Enter data to modify or PF keys to scroll

PF01 HELP PF02 PF03 EXIT PF04 GoTo PF05 PF06 CONFIRM  
 PF07 BKWD PF08 FWD PF09 PF10 LAND PF11 NXTSEC PF12 RECONF

CMD : ONGARD 02/13/02 12:31:  
OG6IWC INQUIRE WELL COMPLETIONS OGOMES -TP

API Well No : 30 15 31591 Eff Date : 06-23-2001 WC Status : A  
Pool Idn : 33685 INDIAN BASIN;UPPER PENN (ASSOC)  
OGRID Idn : 14021 MARATHON OIL CO  
Prop Idn : 6409 INDIAN HILLS UNIT

Well No : 032  
GL Elevation: 4177

	U/L	Sec	Township	Range	North/South	East/West	Prop/Act(P/
	---	---	---	---	---	---	---
B.H. Locn : M	16	21S	24E	FTG 1293	F S FTG	660 F W	P

Lot Identifier:  
Dedicated Acre: 320.00  
Lease Type : S  
Type of consolidation (Comm, Unit, Forced Pooling - C/U/F/O) :

M0025: Enter PF keys to scroll

PF01 HELP	PF02	PF03 EXIT	PF04 GoTo	PF05	PF06
PF07	PF08	PF09	PF10 NEXT-WC	PF11 HISTORY	PF12 NXTREC

CMD :  
OG5SECTONGARD  
INQUIRE LAND BY SECTION02/13/02 13:47:  
OGOMES -TP  
PAGE NO:

Sec : 16 Twp : 21S Rng : 24E Section Type : NORMAL

D 40.00 CS E07437 0002 CCS RESOURCES, IN U 09/15/63	C 40.00 CS E07437 0002 CCS RESOURCES, IN U 09/15/63	B 40.00 CS E07437 0002 CCS RESOURCES, IN U 09/15/63	A 40.00 CS E07437 0002 CCS RESOURCES, U 09/15/6
E 40.00 CS E07437 0002 CCS RESOURCES, IN U 09/15/63	F 40.00 CS E07437 0002 CCS RESOURCES, IN U 09/15/63 A	G 40.00 CS E07437 0002 CCS RESOURCES, IN U 09/15/63	H 40.00 CS OG6063 0002 CCS RESOURCES, U 10/20/6

PF01 HELP  
PF07 BKWDPF02  
PF08 FWDPF03 EXIT  
PF09 PRINTPF04 GoTo  
PF10 SDIVPF05  
PF11PF06  
PF12

CMD :  
OG5SECTONGARD  
INQUIRE LAND BY SECTION02/13/02 13:47:  
OGOMES -TP  
PAGE NO:

Sec : 16 Twp : 21S Rng : 24E Section Type : NORMAL

L 40.00 CS E10169 0003 MANSANTO OIL CO & U 06/19/66 A	K 40.00 CS E07437 0002 CCS RESOURCES, IN U 09/15/63 A	J 40.00 CS OG6063 0002 CCS RESOURCES, IN U 10/20/69	I 40.00 CS E07437 0002 CCS RESOURCES, U 09/15/6
M 40.00 CS OG6063 0002 CCS RESOURCES, IN U 10/20/69 A	N 40.00 CS OG6063 0002 CCS RESOURCES, IN U 10/20/69 A	O 40.00 CS E10169 0003 MANSANTO OIL CO & U 06/19/66	P 40.00 CS OG6063 0002 CCS RESOURCES, U 10/20/6 A

PF01 HELP  
PF07 BKWDPF02  
PF08 FWDPF03 EXIT  
PF09 PRINTPF04 GoTo  
PF10 SDIVPF05  
PF11PF06  
PF12

CMD : ONGARD 02/14/02 08:37:  
OG6IPRD INQUIRE PRODUCTION BY POOL/WELL OGOMES -TQ  
Page No:

OGRID Identifier : 14021 MARATHON OIL CO  
Pool Identifier : 33685 INDIAN BASIN;UPPER PENN (ASSOC)  
API Well No : 30 15 31591 Report Period - From : 01 1998 To : 12 2001

API Well No	Property Name	Prodn. Days MM/YY Prod	Production Volumes Gas Oil Water St
30 15 31591		06 01 8	95713 4884 161345 P
30 15 31591	INDIAN HILLS UNIT	07 01 31	371028 20481 137470 P
30 15 31591	INDIAN HILLS UNIT	08 01 31	240250 19188 316212 P
30 15 31591	INDIAN HILLS UNIT	09 01 30	215997 15844 281514 P
30 15 31591	INDIAN HILLS UNIT	10 01 31	199364 10017 297891 P
30 15 31591	INDIAN HILLS UNIT	11 01 30	211428 12627 245506 P

Reporting Period Total (Gas, Oil) : 1333780 83041 1439938

M0025: Enter PF keys to scroll

PF01 HELP PF02 PF03 EXIT PF04 GoTo PF05 PF06 CONFIRM  
PF07 BKWD PF08 FWD PF09 PF10 NXTPOOL PF11 NXTOGD PF12

CMD : ONGARD 02/14/02 08:37:  
 OG6IPRD INQUIRE PRODUCTION BY POOL/WELL OGOMES -TQ  
 Page No:

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30 15 31591	INDIAN HILLS UNIT	09 01 30	215997 15844 281514	P
30 15 31591	INDIAN HILLS UNIT	10 01 31	199364 10017 297891	P
30 15 31591	INDIAN HILLS UNIT	11 01 30	211428 12627 245506	P

Reporting Period Total (Gas, Oil) : 1333780 83041 1439938

M0001: This is the last page

PF01 HELP PF02 PF03 EXIT PF04 GoTo PF05 PF06 CONFIRM  
 PF07 BKWD PF08 FWD PF09 PF10 NXTPOOL PF11 NXTOGD PF12



CMD :  
OG5SECT

ONGARD  
INQUIRE LAND BY SECTION

02/13/02 12:21:  
OGOMES -TP  
PAGE NO:

Sec : 17 Twp : 21S Rng : 24E Section Type : NORMAL

D 40.00 CS E07437 0002 CCS RESOURCES, IN C U 09/15/63	C 40.00  Federal owned C U	B 40.00  Federal owned C U	A 40.00  Federal owned C U
E 40.00 CS E07437 0002 CCS RESOURCES, IN C U 09/15/63 A	F 40.00 CS K02959 0001 MAX H CHRISTENSEN C 12/18/72	G 40.00 CS E07437 0002 CCS RESOURCES, IN C U 09/15/63	H 40.00 CS OG6063 0002 CCS RESOURCES, C U 10/20/6

PF01 HELP	PF02	PF03 EXIT	PF04 GoTo	PF05	PF06
PF07 BKWD	PF08 FWD	PF09 PRINT	PF10 SDIV	PF11	PF12

CMD :  
OG5SECTONGARD  
INQUIRE LAND BY SECTION02/13/02 12:21:  
OGOMES -TP  
PAGE NO:

Sec : 17 Twp : 21S Rng : 24E Section Type : NORMAL

4 41.03  Federal owned C U	3 41.25  Federal owned C U	2 43.63  Federal owned C U A	1 46.49  Federal owned C U
5 41.82 <u>82.85</u> Federal owned C U A	6 42.04 <u>83.29</u> Federal owned C U	7 42.37 <u>86.00</u> Federal owned C U	8 45.23 <u>91.72</u> Federal owned C U

PF01 HELP  
PF07 BKWDPF02  
PF08 FWDPF03 EXIT  
PF09 PRINTPF04 GoTo  
PF10 SDIVPF05  
PF11PF06  
PF12343.86

PKRVO-201555225

***New Mexico Oil Conservation Division---Engineering Bureau***  
**Administrative Application Process Documentation**

**Date Application Received:** 1-14-2002

**Date of Preliminary Review:** 2-19-2002  
(Note: Must be within 10-days of received date)

**Results:** Application Complete ☒ Application Incomplete

**Date Incomplete Letter Sent:** 2-14-2002

**Deadline to Submit Requested Information:** 2-28-2002

**Phone Call Date:** \_\_\_\_\_  
(Note: Only applies if requested data is not submitted within the 7-day deadline)

**Phone Log Completed?** Yes No

**Date Application Processed:** \_\_\_\_\_

**Date Application Returned:** \_\_\_\_\_  
(Note: Only as a last resort & only after repeated attempts by the Division to obtain the necessary information to process the application)



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**Bill Richardson**  
Governor  
**Joanna Prukop**  
Cabinet Secretary

**Lori Wrotenbery**  
Director  
Oil Conservation Division

May 22, 2003

**Marathon Oil Company**  
**P. O. Box 552**  
**Midland, Texas 79702-0552**  
**Attention: Steve Millican**  
[SFMillican@MarathonOil.com](mailto:SFMillican@MarathonOil.com)

## *Administrative Order NSL-4755-A (BHL) (SD)*

Dear Mr. Millican:

Reference is made to the following: (i) your application filed with the New Mexico Oil Conservation Division ("Division") on April 16, 2003 (*administrative application reference No. pKRV0-310738106*); and (ii) the Division's records in Santa Fe, including the file on Division Administrative Order NSL-4755 (BHL): all concerning Marathon Oil Company's ("Marathon") request for an exception to Rule 2 (b) of the "*Special Rules and Regulations for the Indian Basin-Upper Pennsylvanian Associated Pool*", as promulgated by New Mexico Oil Conservation Division ("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 and Regulations for the Associated Oil and Gas Pools of Northwest New Mexico and Southeast New Mexico*," as promulgated by Division Order No. R-5353, as amended, for its proposed Indian Hills Unit Well No. 52 to be drilled as an upper Pennsylvanian infill well to an unorthodox subsurface location within an existing standard 343.86-acre lay-down spacing and proration unit comprising Lots 1 through 8 (S/2 equivalent) of Section 17, Township 21 South, Range 24 East, NMPM, Indian Basin-Upper Pennsylvanian Associated Pool (33685), Eddy County, New Mexico.

This unit is currently dedicated to Marathon's Indian Hills Unit Well No. 42 (**API No. 30-015-32355**), located on the surface 475 feet from the North line and 2522 feet from the East line (Lot 2/Unit B) of Section 20, Township 21 South, Range 24 East, NMPM, Eddy County, New Mexico, and completed within the Indian Basin-Upper Pennsylvanian Associated Pool at an unorthodox sub-surface location within Lot 8 (SE/4 SE/4 equivalent - Unit P) of Section 17, see Division Administrative Order NSL-4755 (BHL), dated July 3, 2002.

It is our understanding the proposed Indian Hills Unit Well No. 52, because of topographic reasons, will be spud at a surface location 1265 feet from the South line and 2073 feet from the East line (Lot 7/Unit O) of Section 17, and drilled directionally to the south to a targeted-bottomhole location at an approximate depth 8,700 feet (TVD) 69 feet from the South line and 2089 feet from the East line (Lot 7/Unit O) of Section 17. The wellbore is to intersect

the top of the Upper-Pennsylvanian interval at an approximate depth of 7,900 feet (TVD) 280 feet from the South line and 2073 feet from the East line (Lot 7/Unit O) of Section 17. The proposed well will be unorthodox in that the entire producing interval will be closer than the standard setback distance of 660 from the South line of Section 17. Further, this bottom-hole location has been chosen by Marathon to optimize reservoir drainage and minimize geological risk.

This application has been duly filed under the provisions of Division Rule 104.F and Rule 2 (c) of the Division's associated pool rules.

By the authority granted me under the provisions of Division Rule 104.F (2) and the applicable provisions of the special rules governing the Indian Basin-Upper Pennsylvanian Associated Pool, the above-described unorthodox sub-surface location for the Indian Hills Unit Well No. 52 within the S/2 equivalent of Section 17 is hereby approved.

Further, the aforementioned well and spacing unit will be subject to all existing rules, regulations, policies, and procedures applicable to the Indian Basin-Upper Pennsylvanian Associated Pool.

Marathon is hereby authorized to simultaneously dedicate production attributed to the Indian Basin-Upper Pennsylvanian Associated Pool from the aforementioned Indian Hills Unit Wells No. 42 and 52. Furthermore, Marathon is permitted to produce the allowable assigned the subject 343.86-acre spacing and proration unit from both wells in any proportion.

Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

Sincerely,



Lori Wrotenbery  
Director

LW/MES/kv

cc: New Mexico Oil Conservation Division - Artesia  
U. S. Bureau of Land Management - Carlsbad  
File: NSL-4755 (BHL) ✓