

DATE IN : 10/10/00	SUSPENSE 10/30/00	ENGINEER MS	LOGGED BY NW	TYPE NSL
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

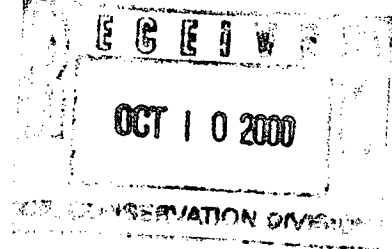
29345564

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
 [DD-Directional Drilling] [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 - Directional Drilling

☒ NSL ☐ NSP ☐ DD ☐ SD

Check One Only for [B] and [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

[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] INFORMATION / DATA SUBMITTED IS COMPLETE - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

Kay Maddox
Print or Type Name

Signature

Regulatory Agent
Title

10/5/2000
Date



Mid-Continent Region
Exploration/Production

Conoco Inc.
10 Desta Drive, Suite 100W
Midland, TX 79705-4500
(915) 686-5400

October 5, 2000

New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Attn: Michael Stogner

**RE: Request For Amendment of NSL Order # 4430 to include Horizontal Sidetrack
Hardy State 36 No. 27, Section 36, T-20-S, R-37-E, J
Current Non-standard Surface Location: 2200' FSL & 1650' FEL
Proposed Standard Bottom Hole Location: 1900' FLS & 700' FEL
North Hardy Strawn Pool (96893)
Lea County, New Mexico**

Dear Mr. Stogner:

Conoco, Inc. is requesting approval to drill and complete a 1000' horizontal sidetrack in the Strawn formation from the existing Hardy State No. 27 wellbore. Conoco Inc. is proposing the horizontal sidetrack well as a means to develop Strawn reserves that are believed to be inaccessible in the current completion. The proposed horizontal well will be initiated at the existing non-standard surface location of 2200' FSL & 1650' FEL in Section 36 and will terminate at a standard location of 1900' FSL & 700' FEL in Section 36, T-20-S, R-37-E. (See attached C-102)

Initially the Hardy 36 No. 27 well was permitted at a standard 40 acre South Cass pool well location. At the time the drilling application was submitted placement of the No. 27 well in the South Cass pool was required by the BLM. Following evaluation of the open hole logs it was determined that the primary Strawn reservoir was dolomitic, characteristic of the North Hardy Strawn pool. This data and offset well logs was immediately presented to NMOC District Geologist Paul Kautz and he was in agreement that the well should be re-assigned to the 160 acre North Hardy Strawn pool which requires 660' outer boundary setbacks. This action caused the location of the Hardy 36 No. 27 well to be non-standard in the North Hardy Strawn Pool. An application for an unorthodox location was made and granted with NSL Order # 4430 dedicating the SE/4 of Section 36 as a standard 160-acre oil spacing and proration unit.

During initial completion of the No. 27 well a lower Strawn zone from 7684' to 7724' was perforated and acid fractured with 23,000 gallons of 20% HCL crosslinked acid. Immediately after stimulating the lower Strawn interval, a retrievable bridge plug was set above the lower Strawn zone and a second Strawn zone from 7627' to 7647' was perforated and stimulated with 5,000 gallons of 20% HCL. The post treatment pressure data from the second stimulation job indicated that the acid treatment of the upper interval had channeled down into the lower Strawn zone and did not effectively stimulate the upper Strawn pay. Since both treatments were tagged with different radioactive isotopes, post treatment gamma ray logs were run and confirmed that channeling had occurred during the second stimulation job. (See attached copies of logged interval)

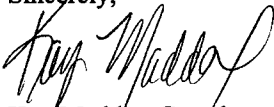
After evaluating the post treatment gamma ray logs, a second attempt at completing the upper Strawn zone was made by spotting 1,600 gals of HCL across the interval and re-shooting the zone using deep penetrating perforating charges. The post treatment pressure data from this stimulation job indicated that the treatment had again channeled down into the lower zone. The decision was then made to produce the well and perform a pressure buildup test to determine the well's potential and to evaluate the completion skin. On May 11th, Conoco initiated swabbing operations in an attempt to unload the well. During the following six days the well would flow during the day then after several hours would die off and load up.

On May 18th a production log was run to determine which of the two Strawn pay intervals were productive. The log indicated that all hydrocarbons were being produced from the lowest most interval of the upper Strawn perforations and the lower interval was non-productive. A pressure build-up test was performed and analysis indicated a partial completion with a positive skin of 0.8. (See attached test) This data re-confirmed the ineffectiveness of the previous stimulation treatments. On May 10th, the well was placed on artificial lift using an electrical submersible pump producing at a rate of approximately 300 to 400 BOPD.

After evaluating several alternatives Conoco is proposing the horizontal sidetrack as the most appropriate method for recovery of reserves discovered from the drilling of the No. 27 wellbore. In addition to effectively accessing the reserves evident on logs in the existing vertical wellbore, the horizontal sidetrack has a second objective of developing new potential reserves not currently accessible with the vertical completion. The well path is designed to horizontally sidetrack in the porous dolomite at 7640'. The sidetrack will attempt to remain in this zone, if it remains porous for the entire 1000' lateral length. If the porosity terminates, the drill bit will be deviated downward to intersect the lower Strawn porosity interval at 7700'. This will enable Conoco to evaluate possible porosity development in this zone away from the vertical No. 27 wellbore. A probabilistic volumetric reserve assessment, in conjunction with seismic interpretation, indicates that the isolated interval may contain reserves of 230 MBO. Conoco would like to access these potential reserves through the proposed lateral.

Conoco respectfully requests that NSL Order #4430 be amended to include the non-standard location acreage that will be affected by this sidetrack. The Hardy "36" State #27 is 440' off the north boundary of the 160 acre proration unit rather than the required 660'. Conoco is the only operator that could be affected by this order. No notification is required. If you have any further questions please call me at (915) 686-5798.

Sincerely,



Kay Maddox, Regulatory Agent
Conoco, Inc.

10 Desta Dr., Suite 100W
Midland, TX 79705

e-mail: M-kay.Maddox@usa.Conoco.com

Enclosures

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
PO Drawer DD, Artesia, NM 88211-0719

District III
1000 Rio Brazos Rd. Aztec, NM 87410

District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102

Revised February 21, 1994
instructions on back

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-34794	2 Pool Code 96893	3 Pool Name North Hardy Strawn
4 Property Code 13396	5 Property Name Hardy "36" State	6 Well Number #27
7 OGRID No. 005073	8 Operator Name Conoco Inc., 10 Desta Drive, Ste. 100W, Midland, TX 79705-4500	9 Elevation 3493'

10 Surface Location

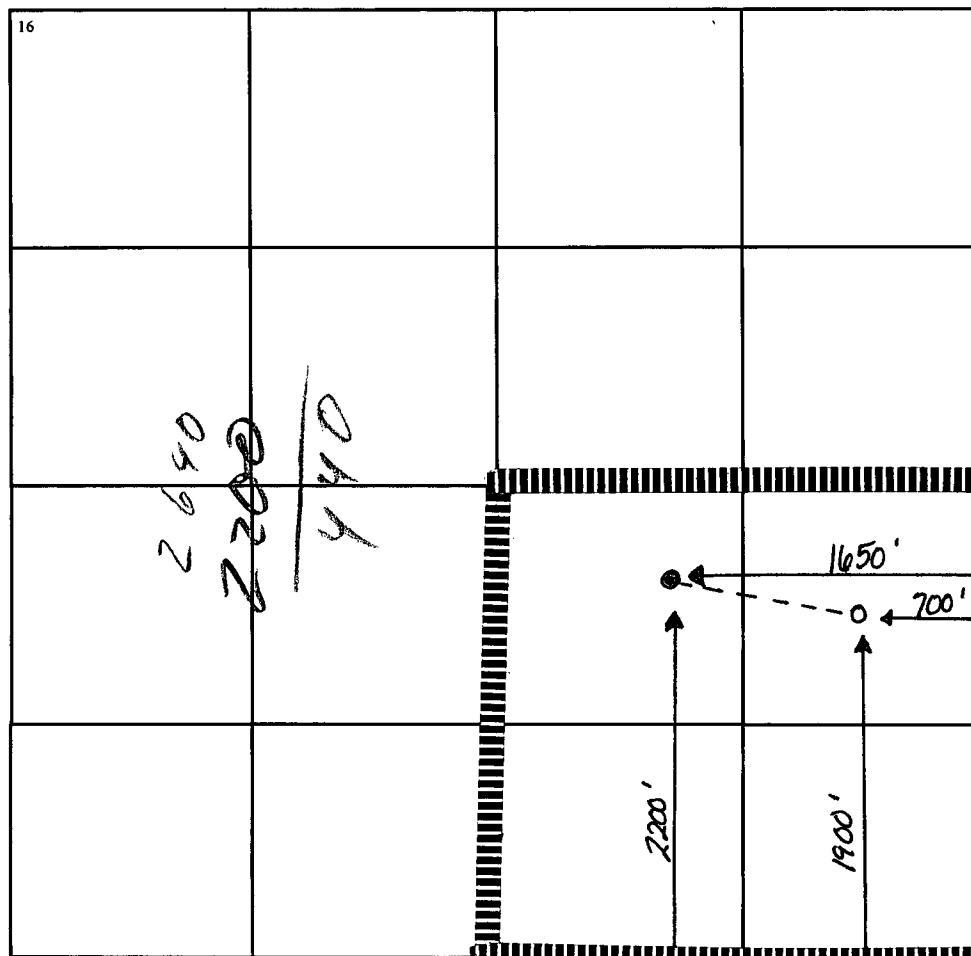
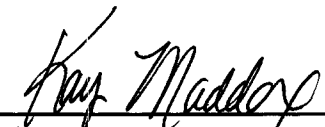
UL or lot no. J	Section 36	Township 20S	Range 37E	Lot Idn	Feet from the 2200'	North/South line South	Feet from the 1650'	East/West line East	County Lea
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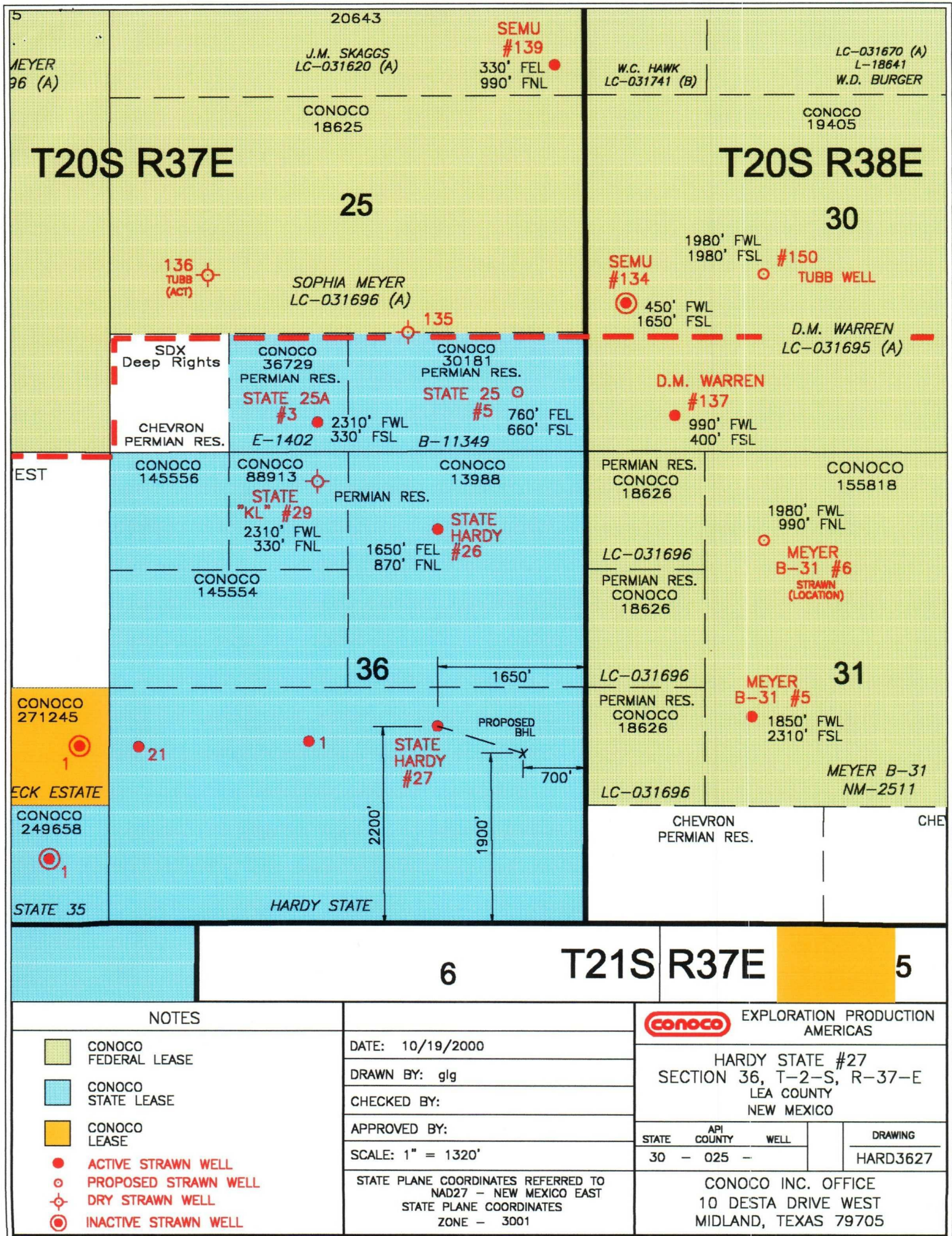
11 Bottom Hole Location If Different From Surface

UL or lot no. I	Section 36	Township 20S	Range 37E	Lot Idn	Feet from the 1900'	North/South line South	Feet from the 700'	East/West line East	County Lea
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12 Dedicated Acres 160	13 Joint or Infill	14 Consolidation Code	15 Order No. Amendment To NSL #4430
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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

16 	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief  Signature Kay Maddox Printed Name Regulatory Agent Title October 3, 2000 Date
	18 SURVEYOR CERTIFICATION 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. Date of Survey Signature and Seal of Professional Surveyor:
	Certificate Number





**NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT**

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

April 5, 2000

**Conoco, Inc.
10 Desta Drive - Suite 100W
Midland, Texas 79705
Attention: Kay Maddox**

Telefax No. (915) 686-5780

Administrative Order NSL-4430

Dear Ms. Maddox:

Reference is made to the following: (i) your application dated April 4, 2000; (ii) your telephone conversations with Mr. Michael E. Stogner, Engineer/Chief Hearing Officer with the New Mexico Oil Conservation Division ("Division") in Santa Fe on Tuesday, April 4, 2000 and Wednesday, April 5, 2000; and (iii) the Division's records in Santa Fe, including the file in Case No. 12182: all concerning Conoco, Inc.'s request for an exception to Rule 4 of the "*Temporary Special Pool Rules for the North Hardy-Strawn Pool*," as promulgated by Division Order No. R-11221, issued in Case No. 12182 dated July 12, 1999, for the existing Hardy "36" State Well No. 27 (API No. 30-025-34794), located at an unorthodox oil well location 2200 feet from the South line and 1650 feet from the East line (Unit J) of Section 36, Township 20 South, Range 37 East, NMPM, Lea County, New Mexico.

The SE/4 of Section 36, being a standard 160-acre oil spacing and proration unit within the governing limits of the North Hardy-Strawn Pool, is to be dedicated to this well.

The subject application has been duly filed under the provisions of Division Rule 104.F, revised by Division Order No. R-11231, issued by the New Mexico Oil Conservation Commission in Case No. 12119 on August 12, 1999, and the applicable provisions of the rules governing this pool.

It is our understanding that the "*Application for Permit to Drill*" ("APD"), dated December 9, 1999, submitted by Conoco, Inc. for the State "36" State Well No. 27 was applied and approved for the Undesignated South Cass-Strawn Pool, even though the well location was closer to the North Hardy-Strawn Pool boundary (440 feet north) than the boundary of the South Cass-Strawn Pool (990 feet west). Under the rules governing the South Cass-Strawn Pool [Division Rule 104.B (1), which requires 40-acre oil spacing and proration units and for wells to be located no closer than 330 feet to the outer boundary of such unit] this location was considered to be standard for the 40-acre tract comprising the NW/4 SE/4 of Section 36.

The Division further understands that this well now is to be placed in the closer North Hardy-Strawn Pool, whereby, pursuant to Rule 4 of the special pool rules, the location is considered to be

Administrative Order NSL-4430

Conoco Inc.

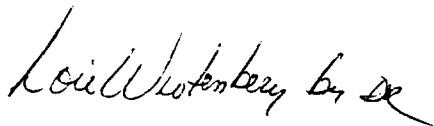
April 5, 2000

Page 2

unorthodox.

By the authority granted me under the provisions of: (i) Rule 5 of these special pool rules; and (ii) Division Rule 104.F (2), the unorthodox oil well location within the Undesignated North Hardy-Strawn Pool of Conoco, Inc.'s existing Hardy "36" State Well No. 27 is hereby approved.

Sincerely,

A handwritten signature in cursive script, appearing to read "Lori Wrotenberg", followed by a small flourish or mark.

Lori Wrotenberg

Director

LW/MES/kv

cc: New Mexico Oil Conservation Division - Hobbs
New Mexico State Land Office - Santa Fe
File: Case No. 12182
W. Thomas Kellahin, Legal Counsel for Conoco, Inc. - Santa Fe

ZodiacTM

Well Test Interpretation

Company: Conoco, Inc.
Well: Hardy 36 State #27, Bu #1

Test Date: Apr 20 to 28, 2000
Report No: 425913

ROCK / WELLBORE DESCRIPTION

Porosity, %	15	Water Saturation, %	29
Net Thickness, ft	23 (upper zone only)	Wellbore Radius, ft	0.36 (8.75" bit)

FLUID DESCRIPTION

Gas Liquid Ratio, scf/bbl	800 (estimated)	Reference Pressure, psia	1285 and 1935
Liquid Gas Ratio, bbl/mmscf	--	Oil Viscosity, cp	0.693 (Bo= 1.235)
Water Cut, %	0.0	Gas Viscosity, cp	0.01409 (Bg= 0.001855)
Oil Gravity, deg API @ 60 F	40	Water Viscosity, cp	--
Gas Gravity	0.85	Total Form. Vol. Factor, rvb/scf	1.904
N2/CO2/H2S, mole %	--	Total Compressibility, 1/psi	9.266 E-05
Water Salinity, ppm	--		

COMPLETION CONFIGURATION

Total Depth, ft	7907	Packer Depth, ft	7557
Casing Size, in / WT, lbs/ft	7 / 23	Shot Density / Dia, in	
Tubing Length, ft / ID, in	7572 / 2.441	Perforated Intervals, ft	7627 to 7647 7684 to 7724

TEST CONDITIONS

Wellhead Pressure, psig	113 to 767	Instrument Depth, ft / No.	7564 / SLSR-794
Bottomhole Pressure, psia	1285 to 2587	Max. Temperature, deg F	112
Final GAS Rate, mscf/d	540 (estimated)	Equivalent Prod. Time, hrs	29.40
Final OIL Rate, stb/d	675	Total Shutin Time, hrs	189.84
Final WATER Rate, stb/d	--		

COMMENTS

Test data collected by the Midland Testing District, Mr. Roy Cherry.

A complete listing of the data collected can be found in field data report #6198182.

ZodiacTM

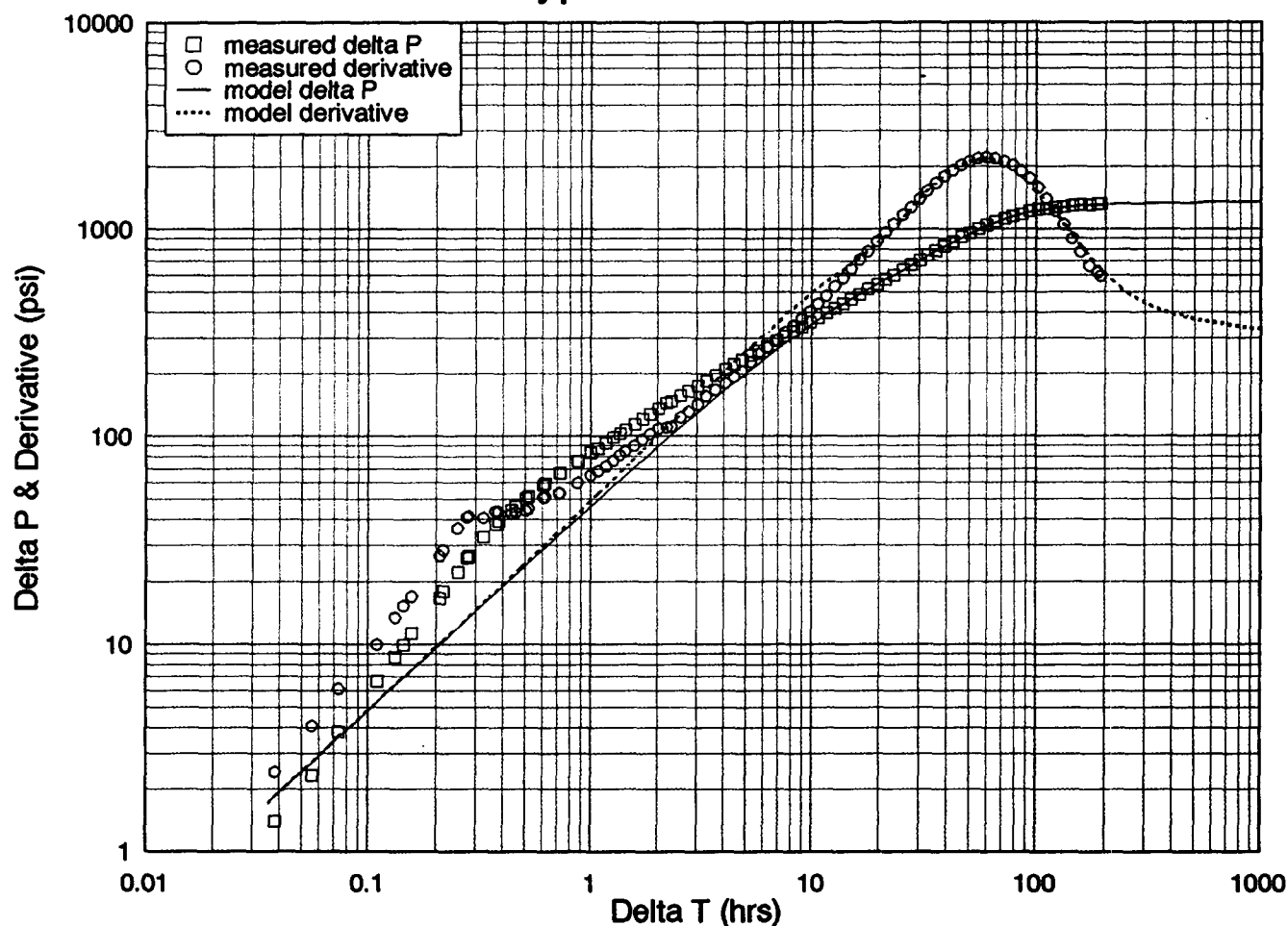
Well Test Interpretation

Company: Conoco, Inc.
Well: Hardy 36 State #27, Bu #1

Test Date: Apr 20 to 28, 2000
Report No: 425913

Multi-Rate Type Curve for Transient TR1

Multi-Rate Type Curve for Transient TR1



Fully Completed - Homogeneous - Infinite Acting

k/u (mD/cp) = 13.73, Total Skin = 0.8241

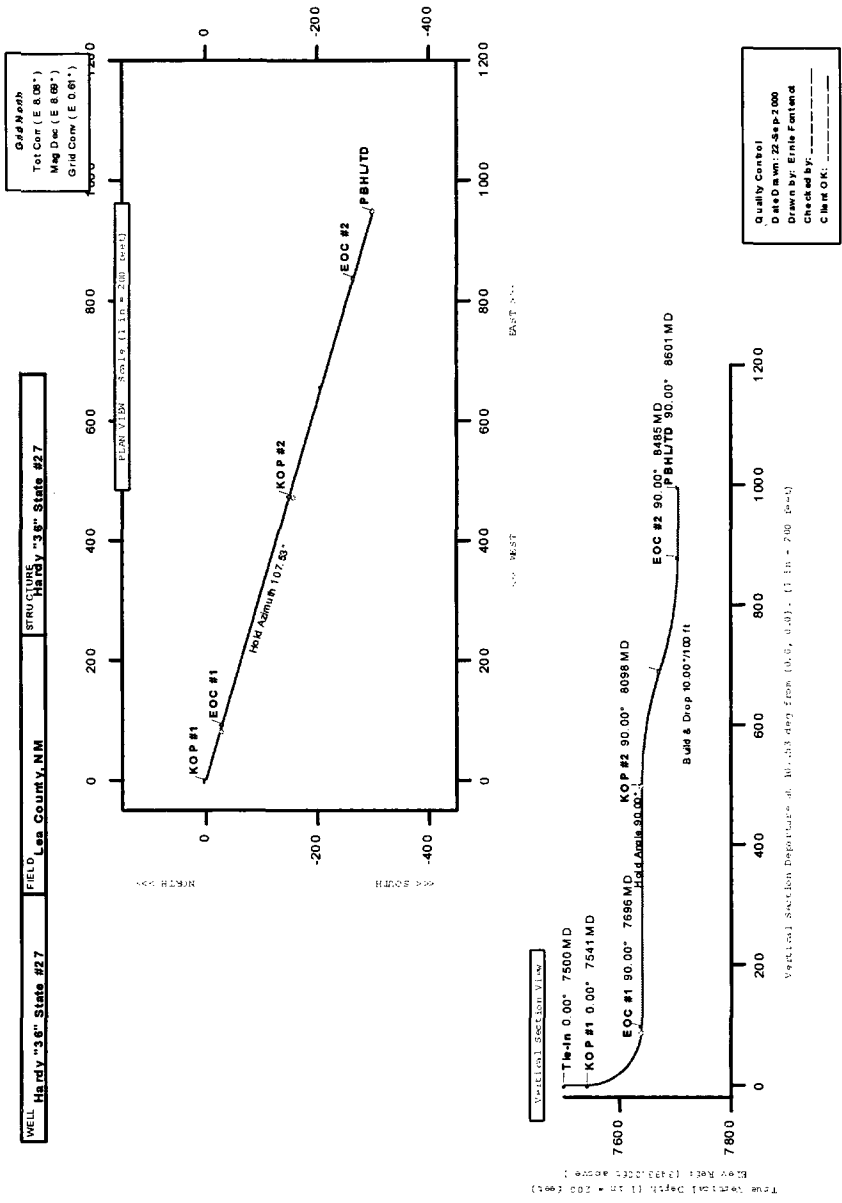
Variable Wellbore Storage (Erf): $C[wb]$ (bbl/psi) = 0.3304, $Ca/C[wb]$ = 1.371, $CphiD[wb]$ = 2.1

Proposed Well Profile

Client: Conoco Field: Lea County, NM Structure: Hardy "36" State #27 Well: Hardy "36" State #27 Borehole: Hardy "36" State #27 UWI/API#: Date: September 22, 2000 Grid Convergence: 0.60842825" Scale Factor: 1.00004835 Location: N 32 31 43.000, W 103 12 7.000 Coordinate System: NAD27 New Mexico State Planes, Eastern Zone, US Feet	Survey Computation Method: Minimum Curvature DLS Computation Method: Lubinski Vertical Section Azimuth: 107.530° Vertical Section Origin: N 0.000 ft, E 0.000 ft TVD Reference: 3493.0 ft above Magnetic Declination: 8.690° Total Field Strength: 49943.071 nT Dip: 60.871° Declination Date: September 28, 2000 Magnetic Declination Model: BGGM 1999 North Reference: Grid North Coordinate Reference To: Structure Reference Point
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Station ID	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	VSec (ft)	N-S (ft)	E-W (ft)	Closure (ft)	at Azim (°)	DLS (°/100ft)	TF (°)
Tie-In	7500.00	0.00	107.53	7500.00	0.00	0.00	0.00	0.00	0.00	0.00	107.5MTF
KOP #1	7541.21	0.00	107.53	7541.21	0.00	0.00	0.00	0.00	0.00	0.00	107.5MTF
EOC #1	7600.00	34.10	107.53	7596.59	16.98	-5.11	16.19	16.98	107.53	58.00	0.0
	7696.39	90.00	107.53	7640.00	98.79	-29.75	94.20	98.79	107.53	58.00	0.0
	7700.00	90.00	107.53	7640.00	102.40	-30.84	97.65	102.40	107.53	0.00	0.0
KOP #2	7800.00	90.00	107.53	7640.00	202.40	-60.95	193.01	202.40	107.53	0.00	0.0
	7900.00	90.00	107.53	7640.00	302.40	-91.06	288.37	302.40	107.53	0.00	0.0
	8000.00	90.00	107.53	7640.00	402.40	-121.17	383.72	402.40	107.53	0.00	0.0
	8097.60	90.00	107.53	7640.00	500.00	-150.56	476.79	500.00	107.53	0.00	180.0
	8100.00	89.76	107.53	7640.01	502.40	-151.28	479.08	502.40	107.53	10.00	180.0
	8200.00	79.76	107.53	7649.13	601.86	-181.23	573.92	601.86	107.53	10.00	180.0
	8291.50	70.61	107.53	7672.50	690.22	-207.84	658.18	690.22	107.53	10.00	0.0
	8300.00	71.46	107.53	7675.26	698.26	-210.26	665.85	698.26	107.53	10.00	0.0
	8400.00	81.46	107.53	7698.64	795.36	-239.50	758.44	795.36	107.53	10.00	0.0
EOC #2	8485.40	90.00	107.53	7705.00	880.44	-265.12	839.57	880.44	107.53	10.00	113.9
	8500.00	90.00	107.53	7705.00	895.04	-269.52	853.50	895.04	107.53	0.00	113.9
	8600.00	90.00	107.53	7705.00	995.04	-299.63	948.86	995.04	107.53	0.00	113.9
PBHL/TD	8601.20	90.00	107.53	7705.00	996.24	-300.00	950.00	996.24	107.53	0.01	0.0

Survey Program: (No Error Model Selected)



Page 1019

COMPANY: Conoco, Inc.

WELL: Hardy "36" State #27

FIELD: Hardy

COUNTY: Lea

STATE: New Mexico

COUNTY: Lea Field: Hardy Location: 1650' FEL & 2200' FSL Well: Hardy "36" State #27 Company: Conoco, Inc.	Schlumberger		PLATFORM EXPRESS Moveable Oil Plot	
	1650' FEL & 2200' FSL Section 36 & Township 20S & Range 37E		Elev.: K.B. 3504 ft G.L. 3493 ft D.F. 3503 ft	
	Permanent Datum: Ground Level Log Measured From: Kelly Bushing Drilling Measured From: Kelly Bushing		Elev.: 3493 ft 11.0 ft above Perm. Datum	
	API Serial No. 30-025-34794		SECTION 36	TOWNSHIP 20S
MUD	Logging Date		18-MAR-2000	
	Run Number		One	
	Depth Driller		7900 ft	
	Schlumberger Depth		7907 ft	
	Bottom Log Interval		7860 ft	
	Top Log Interval		1531 ft	
	Casing Driller Size @ Depth		9.625 in @ 1531 ft	
	Casing Schlumberger		1531 ft	
	Bit Size		8.750 in	
	Type Fluid In Hole		Salt Saturated Brine	
	Density	Viscosity	10 lbm/gal	29 s
	Fluid Loss	PH	5 cm3	10
	Source Of Sample		Circulating Pit	
	RM @ Measured Temperature		0.050 ohm.m @ 82 degF @	
	RMF @ Measured Temperature		0.038 ohm.m @ 82 degF @	
RMC @ Measured Temperature		@ @		
Source RMF	RMC	Calculated	NONE	
RM @ MRT	RMF @ MRT	0.038 @ 110	0.029 @ 110 @ @	
Maximum Recorded Temperatures		110 degF		
Circulation Stopped		Time	18-MAR-2000 9:00	
Logger On Bottom		Time	18-MAR-2000 15:15	
Unit Number	Location	3125	HOBBS, NM	
Recorded By		Tom Steinauer/Olav Amundsen		
Witnessed By		Joe Miller/Elicia Fajardo		

7600

Perfs: 7627-47 (Tagged w/ 10 mci sb 124)

770

Perfs: 7684-7724 (Tagged w/ 20 mci IR 192)

ension
(ENS)
BF) 0

Casing Collar Locator (CCL)

-19 (---) 1

Isotope #2 (ISO_2_MIST)
(CPS) 0 1000

Isotope #3 (ISO_3_MIST)
(CPS) 0 1000

COMPANY: Conoco, Inc.

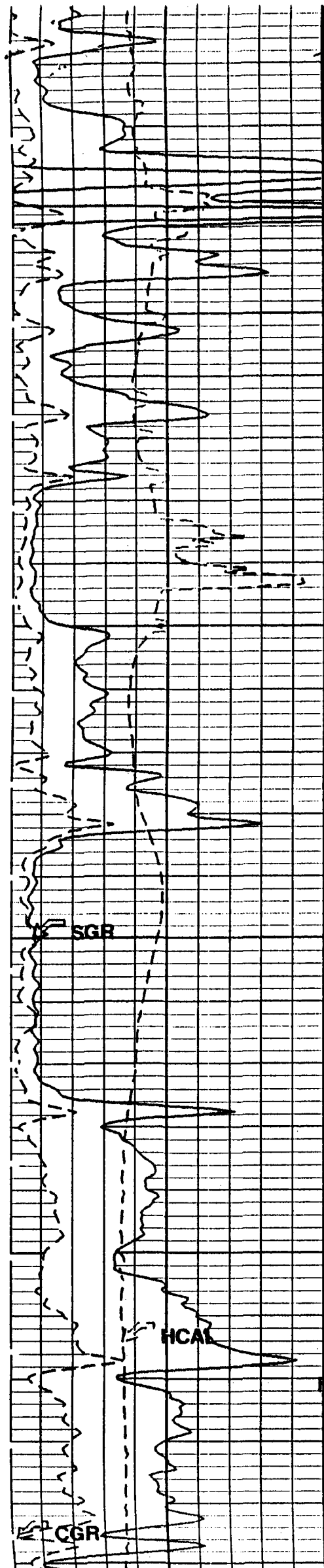
WELL: Hardy "36" State #27

FIELD: Hardy

COUNTY: Lea

STATE: New Mexico

COUNTY: Lea Field: Hardy Location: 1650'FEL & 2200'FSL Well: Hardy "36" State #27 Company: Conoco, Inc.	Schlumberger		Multiple Isotope Log Iridium & Antimony				
	1650'FEL & 2200'FSL Sec. 36, T-20-S, R-37-E			Elev.: K.B. 3504 ft G.L. 3493 ft D.F. 3503 ft			
	Permanent Datum: <u>GROUND LEVEL</u>			Elev.: <u>3493 ft</u>			
	Log Measured From: <u>KELLY BUSHING</u>			11.0 ft above Perm. C			
LOCATION		Drilling Measured From: <u>KELLY BUSHING</u>					
		API Serial No. 30-025-34794		SECTION 36		TOWNSHIP 20-S	
				FA 3			
Logging Date		8-APR-2000					
Run Number		1					
Depth Driller		7801 ft					
Schlumberger Depth		7800 ft					
Bottom Log Interval		7792 ft					
Top Log Interval		7500 ft					
Casing Fluid Type		Fresh Water					
Salinity							
Density							
Fluid Level							
BIT/CASING/TUBING STRING							
Bit Size		3.750 in					
From		11 ft					
To		7900 ft					
Casing/Tubing Size		7.000 in					
Weight		23 lbm/ft					
Grade							
From		11 ft					
To		7900 ft					
Maximum Recorded Temperatures							
Logger On Bottom		Time		8-APR-2000		16:00	
Unit Number		Location		2030		Midland	
Recorded By		David Luna					
Witnessed By		Mike Oconnor					



7600

7700

7800

