

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL ☒ DEEPEN ☐ PLUG BACK ☐		7. UNIT AGREEMENT NAME MCA	
b. TYPE OF WELL OIL WELL ☒ GAS WELL ☐ OTHER ☐		8. FARM OR LEASE NAME MCA	
2. NAME OF OPERATOR CONOCO INC.		9. WELL NO. 359	
3. ADDRESS OF OPERATOR P. O. Box 460, Hobbs, N.M. 88240		10. FIELD AND POOL, OR WILDCAT MALJAMAR (G-SA)	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)* At surface 2370' FNL & 430' FEL 2365' FNL & 425' FEL At proposed prod. zone H 51" NE		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA SEC 20, T-17S, R-32E	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* Same		12. COUNTY OR PARISH LEA	13. STATE NM
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL 40	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	19. PROPOSED DEPTH 4150'	20. ROTARY OR CABLE TOOLS Rotary	
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 4009' GR		22. APPROX. DATE WORK WILL START* Oct. 25, 1980	

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	48#	800'	651 SK CIRCULATE
12 1/4"	8 5/8"	32#	4150'	1791 SK CIRCULATE

It is proposed to drill a straight hole to a TD of 4150'
& complete it as a Grayburg San Andres oil well.
See attachments for 10-point well plan & 13-point surface use plan.
This well location approved by Order No. R-6157, this well being
referred to as P-1 in said order.

RECEIVED

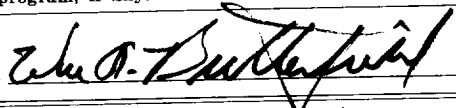
SEP 15 1980

U.S. GEOLOGICAL SURVEY
HOBBS, NEW MEXICO

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depth. Give blowout preventer program, if any.

24.

SIGNED



TITLE

Administrative Supervisor

DATE

9/5/80

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

(Orig. Sgd.) GEORGE H. STEWART

APPROVED BY

TITLE

DATE

SEP 26 1980

CONDITIONS OF APPROVAL, IF ANY:

Instructions

General: This form is designed for submitting proposals to perform certain well operations, as indicated, on all types of lands and leases for appropriate action by either a Federal or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

Item 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable State or Federal regulations concerning subsequent work proposals or reports on the well.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on this reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal or State agency offices.

Items 15 and 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective production zone.

Item 22: Consult applicable Federal or State regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

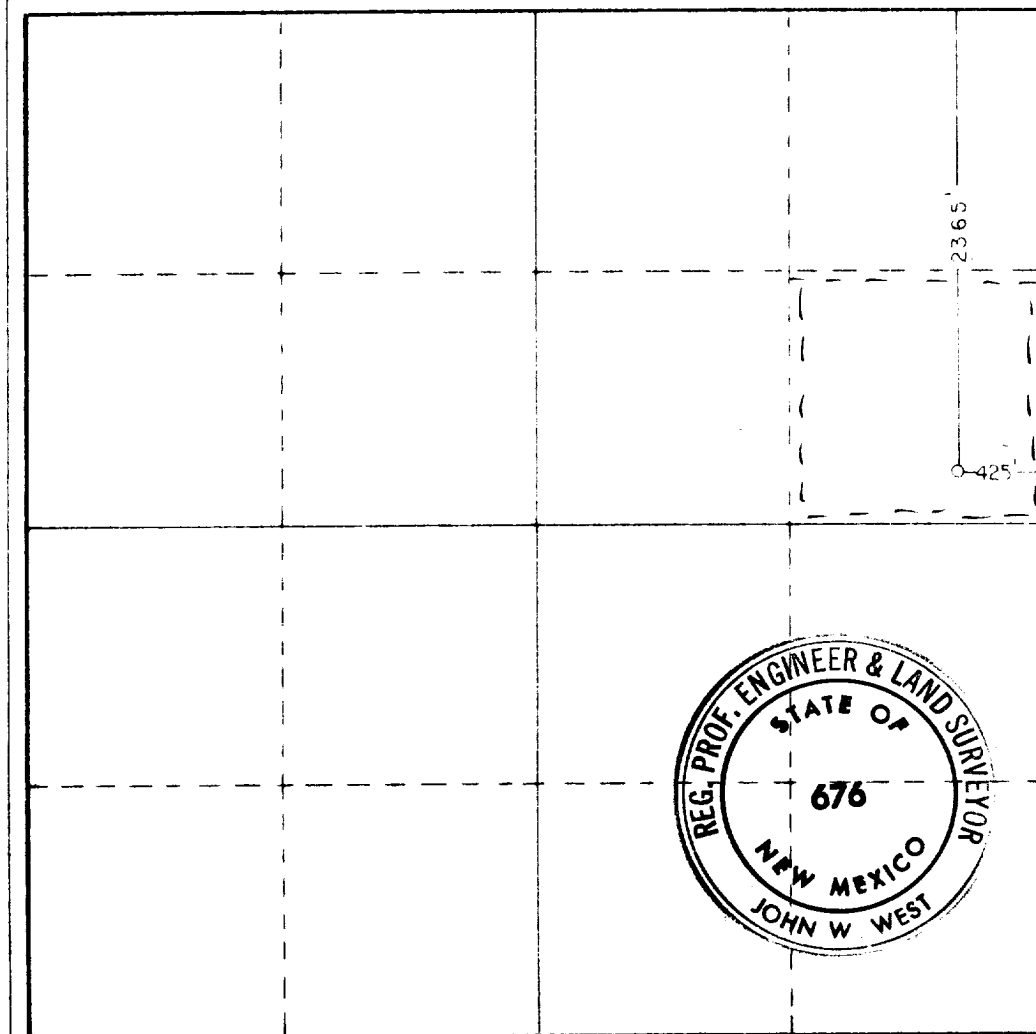
Operator CONOCO, INC.		Lease MCA UNIT		Well No. 359
Unit Letter H	Section 20	Township 17 SOUTH	Range 32 EAST	County LEA
Actual Footage Location of Well: 2365 feet from the NORTH line and 425 feet from the EAST line				
Ground Level Elev.	Producing Formation Grayburg / San Andres		Pool Majamar (G-SA)	Dedicated Acreage: 40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: **W. P. Dutton**
Position: **Administrative Supervisor**
Company: **CONOCO INC.**

Date: **9/12/80**

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 knowledge and belief.

Date Surveyed: **9-3-80**

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. **JOHN W. WEST 676**
PATRICK A. ROMERO 6663
Ronald J. Eidson 3239



ATTACHMENT TO FORM 9-331 C
APPLICATION FOR PERMIT TO DRILL

Conoco Inc.
MCA Unit Nos. 359, 360, 361, 362
Sec. 20, T-17S, R-32E
Lea County, New Mexico

1. The geologic name of the surface formation is Recent Sand.
2. The estimated tops of important geologic markers are shown on the attached Proposed Well Plan.
3. The estimated depths at which anticipated water, oil, gas or other mineral-bearing formations to be encountered are shown on attached Proposed Well Plan.
4. The proposed casing program is as follows:

0' - 800'	13 3/8",	48#,	H-40,	STC
0' - 4150'	8 5/8",	32#,	K-55,	STC
5. A drawing of an API Series 900 Blowout Preventer Specification is attached. Pipe rams and blinds will be checked to 1,000 PSI for 30 minutes when BOP is installed. BOP will be checked when casing string is set and operated daily for checks.
6. The proposed mud program is as follows:

0' - 800'	8.5 - 9.5 ppg	spud mud
800' - 4150'	9.0 - 11.5 ppg	salt water gel
7. The auxiliary equipment to be used is:
 - (1) kelly cocks
 - (2) floats at the bit
8. It is proposed to run GR CAL CNL FDC PDC logs at selected intervals.
9. No abnormal pressures or temperatures are expected to be encountered in this well.
10. The anticipated starting date is October 24, 1980 with a duration of approximately 28 days per well.

PROPOSED WELL PLAN OUTLINE

WELL NAME: MCA NO. 359 (CO₂ Pilot Producer)

COUNTY: LEA

LOCATION: Sec. 20, T-17S, R-32E

STATE: NM

Elev. Est. GL: 4010'
KB: 4020'

DEPTH	FORMATION TOPS & TYPE	DRILLING PROBLEMS	TYPE OF FORMATION EVALUATION	HOLE SIZE (IN)	CASING		(PPG) MUD WEIGHT	(PPG) MUD WEIGHT	MUD	
					SIZE (IN)	DEPTH (FT)			(PPG) WEIGHT	TYPE
	Caliche & Red Beds									
	Rustler Anhy.	740'		17-1/2	48# H-40 STC 13-3/8	800	12.2	8.5	8.5- 9.5	Fresh Spud Mud
1000	Salado Salt	850'								
		Possible water flows from 850' to 1900'								
	Salt									
		Possible air & water flow from 2350' to 2450'	10' samples 1800'-4150'							
	Tansill Anhy.	1900'								
2000	Yates SS.	2070'								
3000	Queen SS	3040'								
	Grayburg Dolo.	3420'								
	6th Dolo. 3680'		Logs: 1800'-4150'							
	7th Dolo. 3790'	Possible water flows & pressured	Sonic/GR/CAL. CNL-Density w/GR/CAL		32# K-55 STC					
4000	9th Dolo. 3910'	2500 psi expected at	Dual LI-MSFL Caliper w/GR				12.5-	8.5-	9.0-	Salt Water
	9th M. 4020'	4100'	Conventional	12-1/4	8-5/8	4150	16.5	11.5	11.5	Gel
	T.D. 4150'									
			Cores 3650'-3850' 4000'-4100'							
			PDC - 3000'-4150'							

WELL NAME MCA NO. 359 FIELD BAISH-MALJAMAR- DATE 5-21-80
 ELEVATION EST. GRD 4010' KB 4020' PROPOSED T.D. 4150'
 LOCATION (SURFACE) & OF SECTION 20 T-17S R-32E
 COUNTY LEA STATE NM SPACING

GEOLOGICAL ESTIMATES

ZONE	TOP	CONTENT
RUSTLER ANHY.	740'	-
SALADO SALT	850'	-
TANSILL ANHY.	1900'	-
YATES SS.	2070'	O,W,G
QUEEN SS.	3040'	O,W,G
GRAYBURG DOLO.	3420'	O,W,G
6th DOLO.	3680'	O,W,G
7th DOLO.	3790'	O,W,G
9th DOLO.	3910'	O,W,G
9th MASSIVE	4020'	O,W,G

CORING NO.	TYPE	HORIZON	INTERVAL FROM-TO	FOOTAGE	REMARKS
1	Conventional	6th & 7th Grayburg	3650'-3850'	200'	8-3/4"X4-1
2	Conventional	9th Massive	4000'-4100'	100'	8-3/4"X4-1

WELL SURVEYS - (List types by code numbers as follows: Directional and/or Deviation (1); Deflection (2); Caliper (3); Temperature (4); Electrical (5); Radioactive (6); Geolograph (7) Photoclinometer (8); Mudlogging (9); Other (10) and name of that type)

DEPTH POINTS	TYPE	HOLE SIZE	REMARKS
0'-4150'	(1) Deviation	17-1/2" & 12-1/4"	One every 250' to base salt One every 500' thereafter
0'-4150'	(7) Geolograph	17-1/2" & 12-1/4"	
1800'-4150'	(5) DLL-MSFL-GR	12-1/4"	2" & 5" Scales
1800'-4150'	(6) FDC-CNL-GR-CAL.	12-1/4"	2" & 5" Scales (caliper 800'-TD)
1800'-4150'	(6) Sonic GR-CAL	12-1/4"	2" & 5" Scales
3000'-4150'	(6) PDC (GR-COLLAR)	8-5/8" Casing	Depth Control

CONOCO TO FURNISH WATER, CONTRACTOR TO FURNISH FUEL.

PROPOSED WELL PLAN

WELL NAME	MCA NO. 359	FIELD	BAISH-MALJAMAR-PEARSALL
	(CO ₂ Pilot Producer)		
<u>ATTACHMENT</u>	<u>NO.</u>	<u>REQUIRED</u>	<u>NOT REQUIRED</u>
CASING CENTRALIZERS, SCRATCHERS	_____	X	_____
CEMENTING	_____	X	_____
MUD PROGRAM	_____	X	_____
WELL PLAN OUTLINE	_____	X	_____
PORE PRESSURE - FRAC GRADIENT	_____	_____	_____
PROJECTED PROGRESS	_____	_____	_____
CROSS SECTION OR WELL COURSE	_____	_____	_____
HYDRAULICS PROGRAM	_____	_____	_____
BIT PROGRAM	_____	_____	_____
VENDER USAGE LIST	_____	_____	_____

DRILLING AND COMPLETION PROCEDURE

1. 0'-800' - Drill a 17-1/2" hole. Run and cement 13-3/8" casing (see cement and casing programs). WOC 18 hours. Pressure test casing to 600 psi for 30 minutes.
2. 800'-3650' - Drill a 12-1/4" hole. Drill out shoe and pressure test formation to 200 psi.
3. 3650'-3850' - Core with conventional core barrel. (8-3/4" X 4-1/4")
4. 3650'-4000' - Ream hole and drill. (12-1/4")
5. 4000'-4100' - Core with conventional core barrel. (8-3/4" X 4-1/4")
6. 4000'-4150' - Ream hole and drill. (12-1/4") Run open hole logs, run casing and cement (see casing and cement programs.)
7. Detailed completion procedure to be prepared after open-hole logs are analyzed. To be completed as a producing well in CO₂ pilot.

LIST TYPE OF STRING BY CODE LETTERS, i.e. CONDUCTOR (C); SURFACE (S); INTERMEDIATE (I); PRODUCTION (P); LINER (L); PERFORATIONS (PP)

TYPE OF STRINGS &
INTERVAL (FT)

FROM-TO	OD	DRIPT ID	WT PER FT	GRADE	THREAD	AMT	WT. IN AIR, WT. IN MUD 1000 LBS 1000 LBS	REMARKS
(S) 0'-800'	13-3/8"	12.559"	48#	H-40	STC	800'	36	
(P) 0'-4150'	8-5/8"	7.796"	32#	K-55	STC	4150'	132.8	Ruff-coat bot 550' D.V. Tool @ 2000'

TYPE OF STRING

CENTRALIZERS INTERVAL NO. FROM-TO	SCRATCHER NO. INTERVAL NO. FROM-TO	OTHER ACCESSORY EQUIPMENT (SUCH AS DEGASSERS, MUD. CENTRIFUGE FLOAT COLLARS, ETC. - SPECIFY)	REMARKS
Surface (8) 0'-800'	NONE	Guide shoe and float collar	100' spacing for centralizers
Production (2) 700'-800' (18) 3650'-4150'	(33) 3650'-4150'	Float shoe, float collar and D.V. Tool @ 2000' and 2 metal petal baskets below D.V. Tool	40' spacing for centralizers with 2 just above 13-3/8" shoe. 15' spacing for scratchers.

DEPTH INTERVAL FROM-TO	WEIGHT LBS/CAL	TYPE	OIL %	pH	WATER LOSS (cc)	VIS. (sec.)	YIELD POINT	THINNING AGENTS	WATER LOSS AGENTS
0'-800'	8.5-9.5	Spud	-	-	-	-	-	-	As needed
800'-3650'	9.0-11.5	Salt Gel	-	-	-	-	-	-	As needed
3650'-4150'	9.0-11.5	Salt Gel	-	±9.0	5-10	34-36	-	-	As needed

REMARKS

1. Below 800' drill with saturated brine to keep hole enlargement to a minimum.
2. Add gel as required to carry cuttings.
3. Pressure surges should be kept to a minimum.
4. Maintain mud weight to be able to control water flows.
5. Control water loss for coring.
6. Condition mud prior to cementing to reduce viscosity.

CEMENT

TYPE OF STRING INTERVAL (FT) FROM-TO TYPE MIX	GEL%	SALT%	CaCl ₂	SLURRY		TOTAL AMT. REQUIRED SKX/CF	FILL UP	BHT	SIZE	REMARKS
				WEIGHT LB./GAL	YIELD CF/SKX					
0'-800'										
Class 'C'	4%	-	2%	13.05	1.88	451/847	Circ.	70°	17-1/2"	100% excess
Class 'C'	-	-	2%	14.80	1.32	200/264				
0'-4150'										
Around Shoe										
Class 'C' Light	-	-	-	12.70	1.84	678/1246	2000'	90°	12-1/4"	100% excess
Class 'C'	-	-	2%	14.80	1.32	400/528				
						1878				
						1278				
Thru D.V. Tool @ 2000'										
Class 'C' Light	-	18%	-	13.20	1.92	513/985	Circ.	80°	12-1/4"	100% excess
Class 'C'	-	18%	-	15.20	1.38	200/276				
						1791				

NOTE:

1. Add 1/4#/sack Flocele to cement if necessary for lost circulation.
2. Reciprocate production casing while cementing.
3. Precede cement with 500 gallons mud flush.
4. Re-calculate cement volumes for production casing after open hole caliber is run.
5. Lab test production casing cement slurries prior to cementing.
6. Utilize top and bottom plugs. Pump top plug with TFW.
7. Condition mud to have low plastic viscosity and yield strength.

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