

SUBMIT IN TRIPLICATE
Other instructions on reverse side

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SEP 15 1980

Form approved.
Budget Bureau No. 42-R1425.

30-025-27067
5. LEASE DESIGNATION AND SERIAL NO.
LC-029405 (6)

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
 DRILL ☒ DEEPEN ☐ PLUG BACK ☐

b. TYPE OF WELL
 OIL WELL ☐ GAS WELL ☐ OTHER ☒ logging observation well
 SINGLE ZONE ☒ MULTIPLE ZONE ☐

2. NAME OF OPERATOR
 CONOCO INC.

3. ADDRESS OF OPERATOR
 P. O. Box 460, Hobbs, N.M. 88240

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*
 At surface ~~2564' FSL & 544' FSL~~ 2564' FSL & 544' FSL

At proposed prod. zone
 Sure

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

10. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	8 5/8"	28 #	800'	411 SK CIRCULATE
7 7/8"	5 1/2"	14 #	4150'	791 SK CIRCULATE

It is proposed to drill a straight hole to a TD of 4150' & complete it as a logging observation well for our Maljamar CO₂ Pilot wells. 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 L-2 in said order.

See Division

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 depths. Give blowout preventer program, if any.

24. SIGNED W. A. Butler TITLE Administrative Supervisor DATE 9/5/80

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY GEORGE H. STEWART TITLE ENGINEER DATE SEP 26 1980

CONDITIONS OF APPROVAL, IF ANY:

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

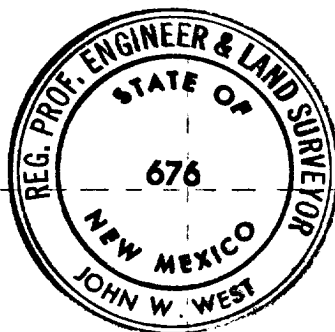
Operator CONOCO, INC.		Lease MCA UNIT		Well No. 364
Section I	Section 20	Township 17 SOUTH	Range 32 EAST	County LEA
Actual Location of well:				
2564 feet from the SOUTH line and		544 feet from the EAST line		
Ground Level Elev. 4013.7	Producing Formation Grayburg/San Andres	Pool Mojave (G-SA)	Dedicated Acreage: 40 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure 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 *John A. Butterfield*
Position
Administrative Supervisor

Company
CONOCO INC.

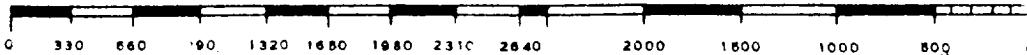
Date
9/12/80

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 6868
Ronald J. Eidson 3239



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

Conoco Inc.
MCA Unit Nos. 363, 364
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'	8 5/8"	28#	H-40, STC
0' - 3550'	5 1/2"	14#	K-55, STC
3550' - 4150'	5 1/2"	5.95#	RFG, 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 July 1, 1981 with a duration of approximately 28 days per well.

PROPOSED WELL PLAN OUTLINE

WELL NAME: NCA NO. 364 (CO₂) Pilot Logging Well COUNTY: LEA

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

STATE: NM
EST. ELEV. GL: 4010'
KB: 4020'

DEPTH	FORMATION TOPS & TYPE	DRILLING PROBLEMS	TYPE OF FORMATION EVALUATION	HOLE SIZE (IN)	CASING		(PPG) CEMENT PLACEMENT	(PPG) CEMENT PLACEMENT	MUD	
					SIZE (IN)	DEPTH (FT)			(PPG) WEIGHT	TYPE
	Caliche & Red Beds									
	Rustler Anhy.	740'		12-1/4	28# H-40 STC	800	12.2	8.5	8.5-9.5	Fresh Spud Mud
1000	Salado Salt	850'								
	Salt	Possible water flows from 850' to 1900'								
	Tansill Anhy.	1900'	10' samples 1800'-4150'							
2000	Yates SS.	2070'								
	Queen SS	3040'								
3000	Grayburg Dolo.	3420'								
	6th Dolo. 3680'		Logs: 1800'-4150'		3550' 14#					
	7th Dolo. 3790'	Possible water flows & pressured	Sonic/GR/CAL. CNL-Density w/GR/CAL		K-55 STC &					
	9th Dolo. 3910'	2500 psi expected at	Dual LL-MSFL Caliper w/CR		600' FGP					
4000	9th M. 4020'		Conventional Cores	7-7/8	5-1/2	4150	12.5-16.5	8.5-11.5	9.0-11.5	Salt Water Gel
	T.D. 4150'	4100'	3650'-3850' 4000'-4100'							

WELL NAME MCA NO. 364 FIELD BAISH-MALJAMAR- DATE 5-21-80
 ELEVATION EST. GRD 4010' KB 4020' PROPOSED T.D. 4150' PEARSALL
 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'	7-13/16"X4-1
2	Conventional	9th Massive	4000'-4100'	100'	7-13/16"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	12-1/4" & 7-7/8"	One every 250' to base salt One every 500' thereafter
0'-4150'	(7) Geolograph	12-1/4" & 7-7/8"	
1800'-4150'	(5) DLL-MSFL-GR	7-7/8"	2" & 5" Scales
1800'-4150'	(6) FDC-CNL-GR-CAL.	7-7/8"	2" & 5" Scales (caliper 800'-TD)
1800'-4150'	(6) Sonic GR-CAL	7-7/8"	2" & 5" Scales

CONOCO TO FURNISH WATER, CONTRACTOR TO FURNISH FUEL.

PROPOSED WELL PLAN

WELL NAME	MCA NO. 364	FIELD BAISH-MALJAMAR-PEARSALL		
(CO ₂ Pilot logging well)				
<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 12-1/4" hole. Run and cement 8-5/8" casing (see cement and casing programs). WOC 18 hours. Pressure test casing to 600 psi for 30 minutes.
2. 800'-3650' - Drill a 7-7/8" hole. Drill out shoe and pressure test formation to 200 psi.
3. 3650'-3850' - Core with conventional core barrel. (7-13/16" X 4-1/4")
4. 3650'-4000' - Ream hole and drill. (7-7/8")
5. 4000'-4100' - Core with conventional core barrel. (7-13/16" X 4-1/4")
6. 4000'-4150' - Ream hole and drill. (7-7/8") Run open hole logs, run casing and cement (see casing and cement programs.)
7. Well to be used as a logging/observation well for CO₂ pilot project.

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	DRAFT ID	WT PER FT	GRADE	THREAD	AMT	WT. IN AIR, WT. IN MUD 1000 LBS 1000 LBS	REMARKS
(S) 0'-800'	8-5/8"	7.892"	28#	H-40	STC	800'	22.4	
(P) 0'-3550'	5-1/2"	4.887"	14#	K-55	STC	3550'	49.7	D.V. Tool @ 2000'
3550'-4150'	5-1/2"	4.80"	5.95#	RFG	LTC	600'	3.6	Fiberglass casing Ruff-coat 600'

TYPE OF STRING	CENTRALIZERS		SCRATCHER		OTHER ACCESSORY EQUIPMENT		REMARKS
	NO.	INTERVAL	NO.	INTERVAL	(SUCH AS DECASSERS, MUD, CENTRIFUGE FLOAT COLLARS, ETC. - SPECIFY)		
Surface	(8)	0'-800'	NONE		Guide shoe and float collar		100' spacing for centralizers
Production	(2)	700'-800'	NONE		Float shoe, float collar, D.V. Tool		2 centralizers just above
	(20)	3550'-4150'			@2000' and 2 metal petal baskets below D.V. Tool.		8-5/8" shoe. One per joint on fiberglass.

MUD PROGRAM

<u>DEPTH INTERVAL</u> <u>FROM-TO</u>	<u>WEIGHT</u> <u>LBS/CAL</u>	<u>TYPE</u>	<u>OIL %</u>	<u>PH</u>	<u>WATER LOSS</u> <u>(cc)</u>	<u>VIS. (sec.)</u>	<u>YIELD</u> <u>POINT</u>	<u>THINNING</u> <u>AGENTS</u>	<u>WATER LOSS</u> <u>AGENTS</u>
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

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

CEMENT

TYPE OF STRING INTERVAL (FT)	FROM-TO TYPE MIX	GEL%	SALT%	CaCl ₂	SLURRY WEIGHT LB./GAL	SLURRY YIELD CF/SKX	TOTAL AMT. REQUIRED SKX/CF	FILL UP	BHT	SIZE	REMARKS
(S) 0'-800'											
Class 'C'	4%	-	2%	13.05	1.88	211/396		Circ.	70°	12-1/4"	100% excess
Class 'C'	-	-	2%	14.80	1.32	200/264					
(P) 0'-4150'											
Around Shoe											
Class 'C' Light	-	-	-	12.70	1.84	261/481		2000'	90°	7-7/8"	100% excess
Class 'C'	-	-	2%	14.80	1.32	200/264					
						461 332 78					
Thru D.V. Tool @ 2000'											
Class 'C'	-	18%	-	13.20	1.88	230/432		Circ.	80°	7-7/8"	100% excess
Class 'C'	-	18%	-	15.20	1.38	100/138					

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.

FEET
0

500

1000

1500

2000

2500

3000

3500

4000

0 5 10 15 20 25

12 1/4" HOLE

8 3/8" CASING POINT 800'

MCA CO₂ PILOT
LOGGING/OBSERVATION
WELL

7 7/8" HOLE

CORING

CORING

5 1/2" CASING POINT 4150'

RECEIVED

SEP 30 1980

OIL CONSERVATION DIV.

1111