

APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK

APPLICATION TO DRILL DEEPEN PLUG BACK

NAME OF COMPANY OR OPERATOR DNR-GEOL.SURVEY DATE 1 FEB 77
P.O.Box 250 Rolla MO
Address City State

DESCRIPTION OF WELL AND LEASE

Name of lease ERDA TS Well number 14 Elevation (ground) 962

WELL LOCATION (give footage from section lines)
60 ft. from (N) sec. line 60 ft. from (E) sec. line

WELL LOCATION Section 19 Township 32N Range 32W County BARTON

Nearest distance from proposed location to property or lease line: NA feet
Distance from proposed location to nearest drilling, completed or applied - for well on the same lease: NA feet

Proposed depth: 200 Rotary or Cable tools Rotary Approx. date work will start 8 FEB. 77

Number of acres in lease: NA Number of wells on lease, including this well, completed in or drilling to this reservoir: NA
Number of abandoned wells on lease: NA

If lease, purchased with one or more wells drilled, from whom purchased: Name NA No. of Wells: producing NA
Address _____ inactive NA
abandoned _____

Status of Bond Single Well Amt. _____ Blanket Bond Amt. _____
 ON FILE
 ATTACHED

Remarks: (If this is an application to deepen or plug back, briefly describe work to be done, giving present producing zone and expected new producing zone) use back of form if needed.

Proposed casing program:				Approved casing - To be filled in by State Geologist			
amt.	size	wt./ft.	cem.	amt.	size	wt./ft.	cem.
	<u>NONE</u>						

I, the undersigned, state that I am the _____ of the _____ (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.
Signature _____

Permit Number: 20016
Approval Date: 1 FEB 1977
Approved By: Wallace B. Am...

SAMPLES REQUIRED
 SAMPLES NOT REQUIRED

Note: This Permit not transferable to any other person or to any other location.

WATER SAMPLES REQUIRED @:

Remit two copies to: Missouri Oil and Gas Council
P.O. Box 250 Rolla, Mo. 65401
One will be returned.

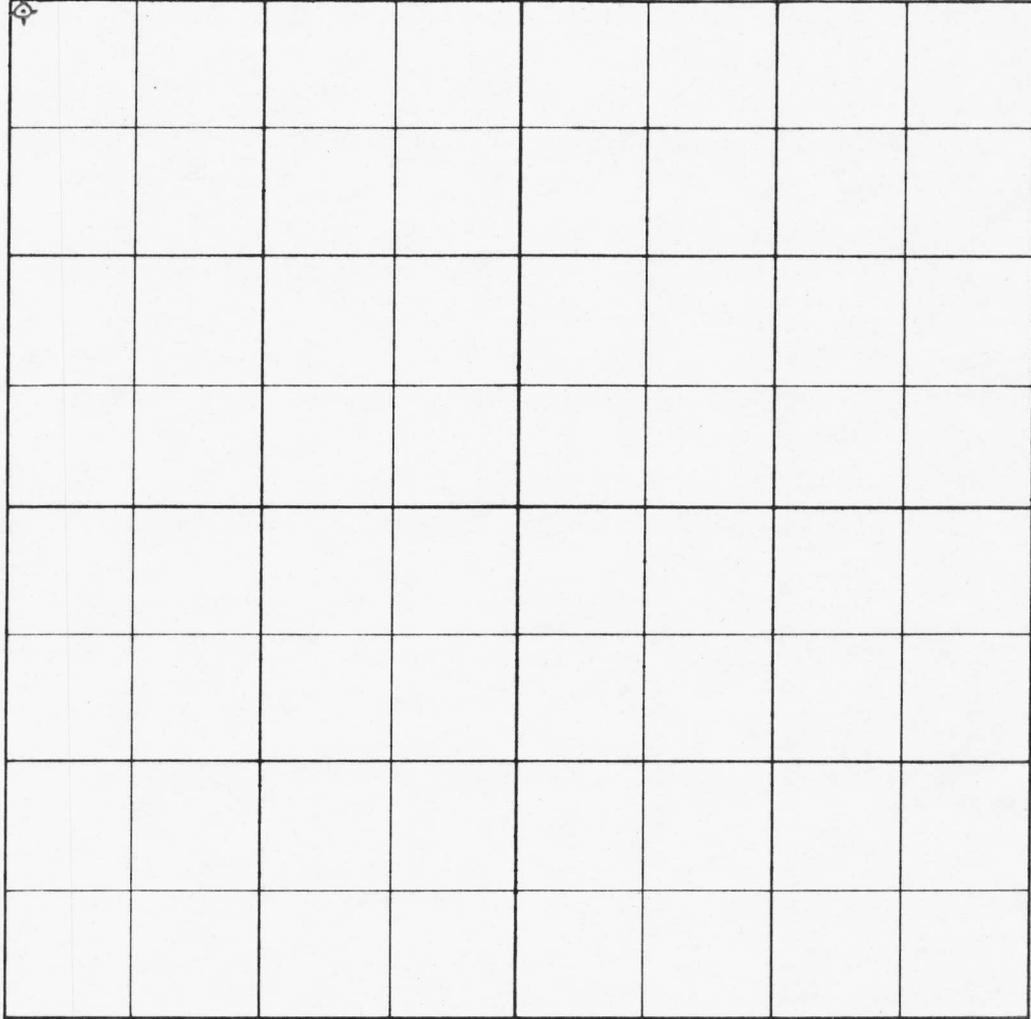
MISSOURI OIL AND GAS COUNCIL
WELL LOCATION PLAT

Form OGC - 4

Owner: DNR - GEOL SURVEY

Lease Name: ERDA TS # 14 County, BARTON

60 feet from (N) 1st line and 60 feet from (E) 4th line of Sec. 19 Twp. 32N Range 32W



SCALE
1" = 1000'

REMARKS: Iantha, Mo., 4 1/2 mi W of along Right of
Way State rt. 43 on back slope, 60' W &
60' S of projected E-W gravel rd w/ Rt. 43.
gravel rd now offset to South of original
X rd.

INSTRUCTIONS

On the above plat, show distance of the proposed well from the two nearest lease and section lines, and from the nearest well on the same lease completed in or drilling to the same reservoir. If the location requested is not in conformance with the applicable well-spacing rules, show all off-setting wells to the proposed well. Do not confuse survey lines with lease lines. See rule 7 - 3 (b) for survey requirements.

(SEAL)

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Registered Land Surveyor

TEST BORING LOG

Project E.R.D.A. TS Boring No. 14 Sheet 1 of 2
D.N.R. Geological Survey Surface Elevation _____ Offset _____
Address Barton County Date Started 2/8/77 Completed 2/10/77
City & State Rolla, Missouri Driller J. Wright Rig 750 ATV

Abbreviations: A.O. - Auger Only R.B. - Rock Bit C.W. - Core Water
H.A. - Hollow Auger S.S. - Split Spoon C.A. - Core Air
W.B. - Wash Bore S.T. - Shelby Tube F.B. - Finger Bit

Sec. 19, T. 32N., R. 32W.

DEPTH		METHOD	PENETRATION RECORD		CORE RECOVERY	SAMPLE DESCRIPTION <small>COLOR-MATERIAL-MOISTURE-CLAY CONSISTENCY SAND DENSITY</small>
FROM	TO		POCKET PENETRO-METER	NO. OF BLOWS		
0.0'	12.0'	WB				Soil, limestone, sand
12.0'	22.0'	CW1			9.6	Shale, black, clayey
22.0'	32.0'	CW2			10	Shale, silt, coal
32.0'	42.0'	CW3			10	Shale, sandy
42.0'	52.0'	CW4			10	Shale, sandy
52.0'	62.0'	CW5			10	Siltstone
62.0'	72.0'	CW6			10	Shale, silt, sand, coal
72.0'	82.0'	CW7			10	Shale, under clay, w/coal seam
82.0'	92.0'	CW8			10	Coal
92.0'	102.0'	CW9			10	Sandstone
102.0'	112.0'	CW10			10	Same
112.0'	122.0'	CW11			10	Limestone, shale, sand
122.0'	132.0'	CW12			9.9	Sandstone
132.0'	142.0'	CW13			10	Coal, shale, under clay
142.0'	152.0'	CW14			9.4	Shale, gray
152.0'	162.0'	CW15			10	Shale, coal, sandstone

REMARKS: (Casing, Water Loss, Etc.) _____ Water Level _____ Time _____ Date _____

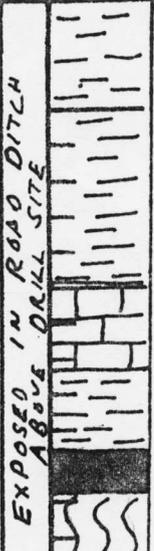
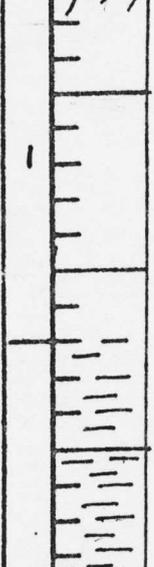
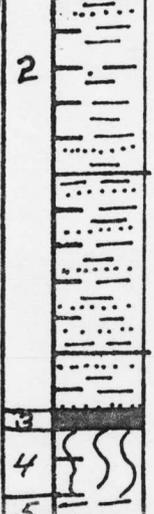
_____ (Completion)

QUADRANGLE: Iantha

ERDA-TS core hole 14
 COUNTY: Barton.

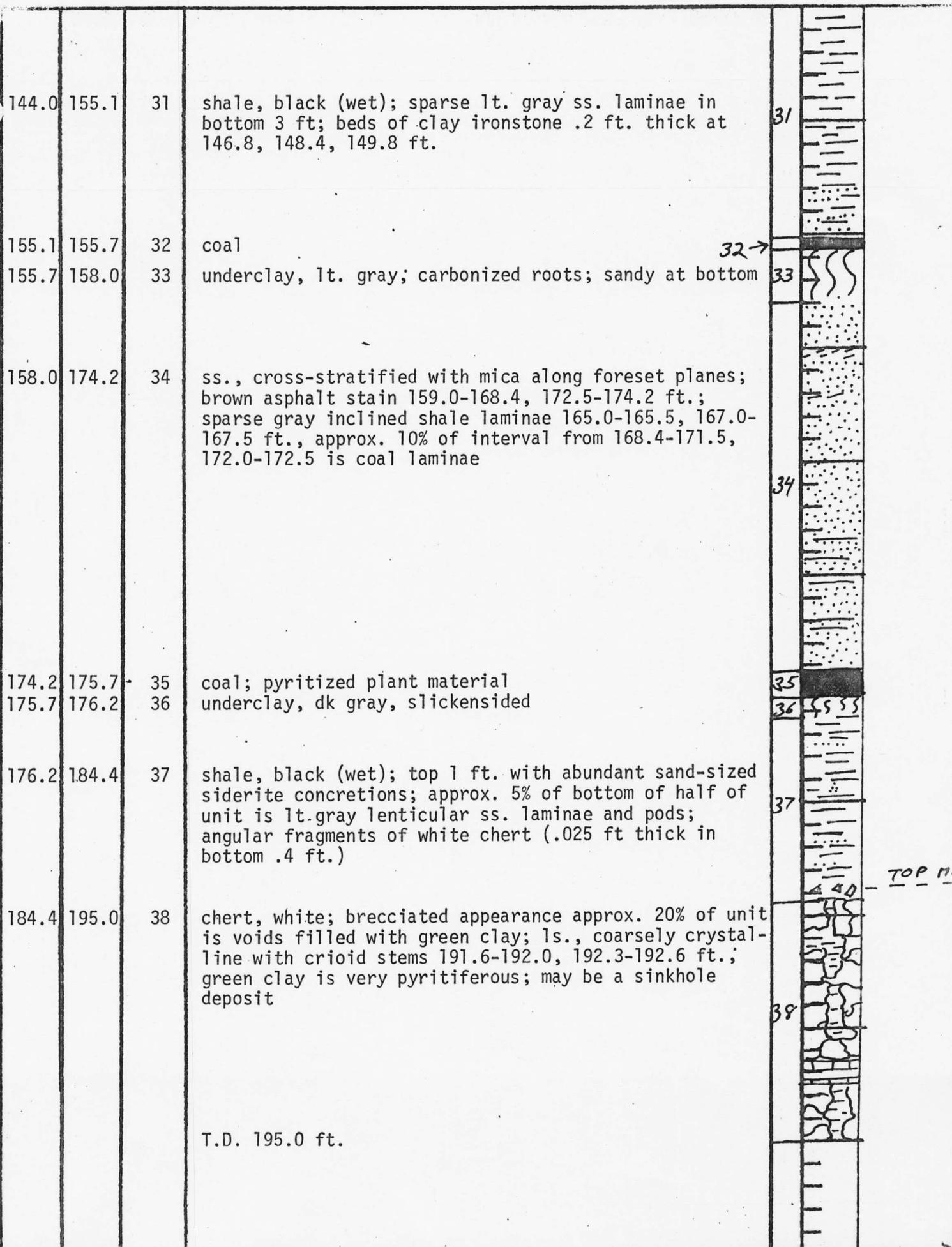
LOCATION: NE1/4 NE1/4 NE1/4 SEC. 19 T. 32N R. 32W DATE: Feb. 8-11, 1977

LOCATION DESCRIPTION: 60' FNL and 60' FEL;
 4-1/2 miles west of Iantha, Mo. on west backslope of Hwy 43
 surface elev. 962.0 ; T.D. 195.0

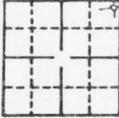
DEPTH (FEET)	BED NO.	LITHOLOGY	EXPOSED IN ROAD DITCH ABOVE DRILL SITE
0.0 - 12.0	1	no core; but following section exposed in road ditch 7.9 ft. shale, green with red hematitic streaks 2.4 ft. ls, lt. gray, finely crystalline, fossiliferous 2.3 clay, greenish gray, soft 0.9 coal; 959.0 elevation 2.0 underclay	
12.0 - 31.7	2	shale, med. gray; brown, non calc.; clay ironstone bed .1 ft. thick at 15.6, 21.6, and 23.6 ft.; lost core 21.6 to 22.0 ft.; becomes sandy at 18 ft. and sand content increases downsection until about 50% of unit at bottom is lenticules of cross-laminated ss. (starved ripples) in shale lost core 21.6-22.0 ft.	
31.7 - 32.1	3	coal, fragmented	
32.1 - 34.0	4	underclay; fossil root molds	

34.0	36.4	5	clay, lt. gray, non calc.; sandy at bottom	5	
36.4	39.3	6	ss., dk. gray; slight asphalt staining near top	6	
39.3	51.2	7	shale, med. dk. gray to dk. gray at bottom; poorly developed ss. laminae in top half of unit; ironstone beds, brown, non calc. approx. .1 ft thick at 49.2, 50.0 and 50.5 ft.	7	
51.2	52.0	8	ls., dk. gray, very argilloceous fragments of <u>Chonetinella</u> and productids; <u>Orbiculoidea missouriensis</u>	8	
52.0	54.0	9	<u>Lingula carbonia</u> , some crinoid columnals underclay, lt. gray, sandy; irregular shaped, carbonized roots and pieces plant material	9	
54.0	63.4	10	shale, med. gray; ss. laminations and pods at top decrease downsection until approx. 10% of unit at 60.0 ft.; lenticular laminations ("starved" ripples) from 60.0 to 62.0 ft.; ss. content increases from 62.0 to 63.4 ft.; sand-sized siderite concretions	10	
63.4	65.0	11	shale, dk. gray, sandy; conglomeratic, clasts of shale interbedded with lenses of coal	11	
65.0	65.7	12	coal; bands vitrain	12	
65.7	67.3	13	underclay; poorly developed, dk. gray; few carbonized roots; clay ironstone concretions at bottom	13	
67.3	68.3	14	coal, shiny; pyritized plant material	14	
68.3	70.3	15	underclay, lt. gray; carbonized roots	15	
70.3	74.7	16	shale, med. gray (dry) to dk. gray (wet); sand-sized siderite concretions, and clay ironstone concretions to .1 ft. dia.	16	
74.7	75.6	17	coal; vitrain banding; pyrite lenses	17	
75.6	79.0	18	underclay, sandy; carbonized, randomly oriented fossil roots	18	
79.0	87.5	19	ss., lt. gray; lenticular ripple laminations and pods, intercalated with gray shale; ss. laminations decrease to about 20% of unit at bottom; sand-sized siderite concretions randomly dispersed throughout unit	19	
87.5	87.9	20	coal; vitrain banding	20	
				20 →	
					21

87.9	91.5	21	underclay, sandy; carbonized fossil roots	21	
91.5	110.6	22	ss., fine-grained to slightly coarser at bottom, lt. gray (dry) to med. gray (wet); micaceous, homogeneous; cross-laminated 95.5 to 96.5 ft.	22	
110.6	112.2	23	ss., lt. gray, fine-grained, hard, calc.	23	
112.2	128.8	24	ss., lt gray, fine-grained, micaceous; laminated lt gray ss and med. gray shale 114.4-114.8, 119.7-120.0, 126.5-127.0, 127.6-127.9; interlaminated coal and dk. gray shale in "bundles" at 115.2-115.5	24	
128.8	129.3	25	coal, pyritiferous	25	
129.3	132.0	26	underclay, lt. gray; fossil root molds; slickensided; sand-sized siderite concretions below top 1 ft.	26	
132.0	138.1	27	shale, lt. gray; sandy at top with contorted ss. laminae; becomes dk gray in bottom 4 ft. with 5 to 10% of unit lenticular ss. laminae ("starved" ripples)	27	
138.1	138.9	28	coal with pyritized plant remains; sticks to overlying shale	28	
138.9	140.5	29	underclay, lt. greenish-gray; carbonized roots	29	
140.5	144.0	30	clay, greenish gray; irregular-shaped zones of sand-sized siderite concretions with clay matrix	30	
				31	



WILDCAT

FR & COMP	STATE	MISSOURI	9-2-104	MAP NO.	S-T-R	19-32N-32W	S
OPER	MISSOURI GEOL SURVEY				SPOT	APP NE NE NE	INIT
	P O BOX 250, ROLLA, MO				CO	BARTON	S
WELL	14 ERDA-TS	ELEV	962 GR	FIN			
CONTR	LAYNE WESTERN	60' fnl, 60' fe1 of Sec					
FIELD	WC						
IP	D&A						
	API 24-011-20016						

SPUD 2-7-77, no surf csg

RTD 195, log

D&A FIRST REPORTED AND COMPLETED 2-8-77

TOPS NOT AVAILABLE

RTD 195 + 767

TD IN CHEROKEE

COMP ISSUED 9-12-77