

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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  SINGLE ZONE  MULTIPLE ZONE

2. NAME OF OPERATOR

Union Texas Petroleum Corp.

3. ADDRESS OF OPERATOR

P.O. Box 2120 Houston, Texas 77252-2120

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*

At surface  
990' FNL & 1650' FWL  
At proposed prod. zone

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

6 miles SE Bloomfield NM

10. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 990'

16. NO. OF ACRES IN LEASE  
320

17. NO. OF ACRES ASSIGNED TO THIS WELL  
320

19. DISTANCE FROM PROPOSED LOCATION\* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. N/A

19. PROPOSED DEPTH  
5290

20. ROTARY OR CABLE TOOLS

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

5820

22. APPROX. DATE WORK WILL START\*

8-1-89

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	24 #	290	275
7 7/8	4 1/2	10.5 #	6538	1175 (3 stages)

We propose to plug the Gallup Formation and recomplete and test the uphole Fruitland Coal zone. Plug back procedure attached.

RECEIVED  
JUL 31 1989  
OIL CON. DIV.  
DIST. 3

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

*[Signature]*

TITLE

Reg. Permit Coord.

DATE

7-18-89

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

APPROVAL STAMP: JUL 19 1989, FARM...

RECOMMENDED PROCEDURE  
ANGEL PEAK B # 31

Location: 990' FNL & 1650' FWL  
Section 25, T28N-R11W  
San Juan County, NM

Date: 5/23/89  
Elevation: 5807' GLE  
Datum: 5820' KBE  
13' KB

Pool Formation: Basin Fruitland Coal

TD: 6538'  
PBTD: 5290'

<u>Casing</u>	<u>Hole Size</u>	<u>Wt &amp; Class</u>	<u>Depth</u>	<u>Cmt</u>
8-5/8"	12-1/4"	24# H-40	290'	Circ. cmt to surface
4-1/2"	7-7/8"	10.5# K-55	6538'	DV tool at 2921' & 4388' TOC by temp survey @ 350'

1st stage: 325 sx 50-50 POZ w/2% gel, 0.6% FLA, 10% salt.  
2nd stage: 200 sx 50-50 POZ w/4% gel, tailed w/ 50 sx Cl B w/2% CaCl.  
3rd stage: 500 sx Howco Lite w/6% gel, 12-1/2# Gilsonite/sk & tailed w/100 sx  
50-50 POZ w/2% gel, 0.6% FLA, 10% salt.

\*See Wellbore diagram for additional details

Procedure

1. Check rig anchors, road and build pit as necessary.
2. MIRUSU.
3. TOH with 2-3/8" tubing. Set cement retainer at 5340' on tubing and squeeze with 75 sx class B cement. Pull out of retainer and spot minimum of 50' plug on top of retainer.
4. Roll hole with fresh water and TOOH with 2-3/8" tubing.
5. Run CBL-GR-OCL across coals from 1900'-1450'. Evaluate and squeeze if necessary.
6. Pressure test casing to 4100 PSI. TTH with 2-3/8" tubing to 1780' and spot 75 gals 7-1/2% acetic acid. TOOH.
7. Correlate to Gearhart's open hole logs of 1/8/81 and perforate lower coal from 1769'-1780' with 4 JSPF. Total of 48 0.40" holes.
8. Rig up pump trucks and fracture stimulate the lower Fruitland Coal Zone down 4-1/2" casing with 20,000# 40/70 sand and 51,000# 20/40 sand in 46,500 gals 30 # crosslinked gel system at 35 BPM as follows.

<u>STAGE</u>	<u>FLUID</u>	<u>SAND</u>
PAD	15,000 gals	
PAD (fluid loss) 1 ppg	10,000 gals	10,000# 40/70
PAD (fluid loss) 2 ppg	5,000 gals	10,000# 40/70
2 ppg	5,000 gals	10,000# 20/40
3 ppg	5,000 gals	15,000# 20/40
4 ppg	4,500 gals	18,000# 20/40
4 ppg (resin coated and activator)	2,000 gals	8,000# 20/40
FLUSH	<u>(1,179 gals)</u>	
	47,697 gals	20,000# 40/70
		51,000# 20/40

Resin coated sand will be Sandtrol including required amount of activator. Sand will be Arizona.

All frac fluid to contain 2% KCL, 30#/1000 gals gel, required amounts of x-linker, buffer, biocide, gel breaker. (4 hr break time).

Anticipated B.D. = 2200 psi. Anticipated ISIP = 900 psi. Maximum surface treating pressure = 4100 psi.

Tag all sand with R.A. material (IR-192)

9. On wireline set drillable B.P. at 1740'. Pressure test to 4100 psi. TIH with 2-3/8" tubing to 1660' and spot 75 gals 7-1/2% acetic acid. TOOH.
10. Perforate middle coal from 1638' - 1660' with 4 JSPF. Total 92 0.40" holes.
11. Rig up pump trucks and fracture stimulate the middle Fruitland Coal zone down 4-1/2" casing with 20,000# 40/70 sand and 90,000# 20/40 sand in 60,000 gals 30# crosslinked gel system at 60 BPM as follows:

<u>Stage</u>	<u>Fluid</u>	<u>Sand</u>
Pad	20,000 gals	
Pad (fluid loss) 1ppg	10,000 gals	10,000# 40/70
Pad (fluid loss) 2ppg	5,000 gals	10,000# 40/70
2 ppg	10,000 gals	20,000# 20/40
3 ppg	10,000 gals	30,000# 20/40
4 ppg	7,500 gals	30,000# 20/40
4 ppg (resin coated and activator)	2,500 gals	10,000# 20/40
Flush	<u>(1,092 gals)</u>	
	61,092 gals	20,000# 40/70
		90,000# 20/40

Resin coated sand will be Sandtrol including required amount of activator. Sand will be Arizona.

All frac fluid to contain 2% KCL, 30#/1000 gals gel, required amounts of x-linker, buffer, biocide, gel breaker. (4 hr break time).

Anticipated B.D. = 2200 psi. Anticipated ISIP = 900 psi. Maximum surface treating pressure = 4100 psi.

Tag all sand with R.A. material (SC-46)

12. On wireline set drillable B.P. at 1630'. Pressure test to 4100 psi. TIH with 2-3/8" tubing to 1606' and spot 75 gals 7-1/2% acetic acid. TOOH.
13. Perforate upper coal from 1584'- 1592' and 1600'- 1604' with 4 JSPF. Total 56 0.40" holes.
14. Rig up pump trucks and fracture stimulate the upper Fruitland Coal zone down 4-1/2" casing with 20,000# 40/70 sand and 55,000# 20/40 sand in 47,916 gals 30# crosslinked gel system at 35 BPM as follows:

<u>Stage</u>	<u>Fluid</u>	<u>Sand</u>
Pad	15,000 gals	
Pad (fluid loss) 1ppg	10,000 gals	10,000# 40/70
Pad (fluid loss) 2ppg	5,000 gals	10,000# 40/70
2 ppg	5,000 gals	10,000# 20/40
3 ppg	6,666 gals	20,000# 20/40
4 ppg	5,000 gals	20,000# 20/40
4 ppg (resin coated and activator)	1,250 gals	5,000# 20/40
Flush	<u>(1,058 gals)</u>	
	48,974 gals	20,000# 40/70
		55,000# 20/40

Shut in well overnight.

Resin coated sand will be Sandtrol including required amount of activator. Sand will be Arizona.

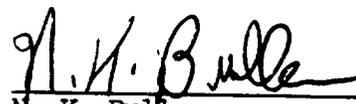
All frac fluid to contain 2% KCL, 30#/1000 gals gel, required amounts of x-linker, buffer, biocide, gel breaker. (4 hr break time).

Anticipated B.D. = 2200 psi. Anticipated ISIP = 900 psi. Maximum surface treating pressure = 4100 psi.

Tag all sand with R.A. material (IR-192).

15. TIH with 3-7/8" bit on 2-3/8" tubing and cleanout to BP at 1630'. Obtain pitot gauge and water rates when possible.
16. Drill out BP and cleanout to BP at 1740'. Obtain pitot gauge and water rates when possible.
17. Drill out BP at 1740'. Obtain pitot gauge and water rates when possible. Obtain water samples for analysis.
18. Land 2-3/8" tubing open ended at 1810' with standard S.N. one joint up.

  
S. G. Katirgis  
Production Engineer

  
N. K. Buller  
Sr. Drilling Foreman



Union Texas Petroleum

SUBJECT: Angel Peak 3 #31

Existing Wellbore Diagram

BY: SGK DATE: 5/18/89

PAGE \_\_\_\_\_ OF \_\_\_\_\_

1 1/4" Hole  
3 5/8", 24#, H-40 @ 290'  
Circ cmt to surface

990' FML & 1650' FWL  
25-28N-11W  
San Juan County, NM

5807' GLE  
5820' KBE  
13' KB

OV Tools @ 2921' & 4388'

\*1 DV tool may be  
@ 3091'

2 7/8", 4.7#, J-55, 8rd, EVE @ 5799'  
w/ 2jt mud anchor, bull plug on bottom,  
perf sub, 1.78" I.O. SN @ 5737'

Gallup 5348' - 5870'

PBTD = 5914', Cmt Retainer @ 5976'

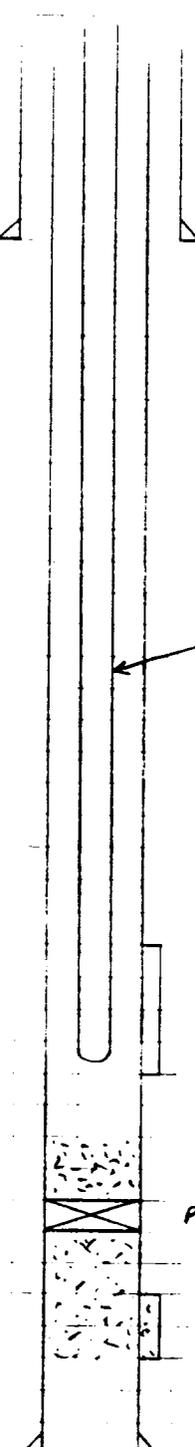
Dakota 6204' - 6324', Plugged

7 7/8" Hole  
4 1/2", 10.5#, K-55 @ 6538'

1st & 2nd stage cmt: good  
circulation

3rd stage: TOC = 350' by  
Temp. Survey

TD = 6538'





1 1/4" Hole  
8 5/8", 24", H-40 @ 290'  
Circ cmt to surface

2 7/8", 4.7", 8 rd, EVE @ 1775'

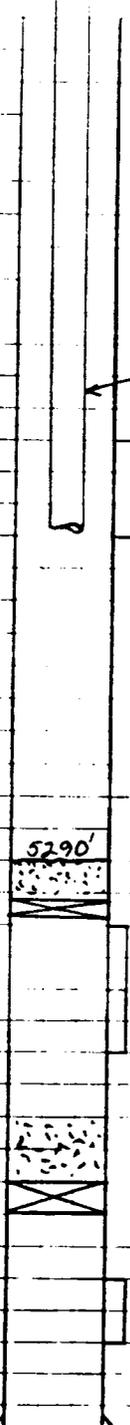
Fruitland Coal 1584' - 1780'

OV Tools @ 2921' & 4389'

\*1 OV tool may be  
@ 3091'

FORMATION TOPS

Fruitland	1555'
Pictured Cliffs	1782'
Chacca	2714'
Mesa verde	3302'
Gallup	5340'
Dakota	6200'



Cmt Retainer @ 5340'

Gallup 5348' - 5870'

PBTD = 5914', Cmt Retainer @ 5976'

Dakota 6204' - 6321'

7 7/8" Hole  
4 1/2", 10.5", K-55 @ 6538'

ID = 6538'

1<sup>st</sup> & 2<sup>nd</sup> stage: cmt; good  
circulation

3<sup>rd</sup> stage: TOC = 350' by  
Temp. Survey