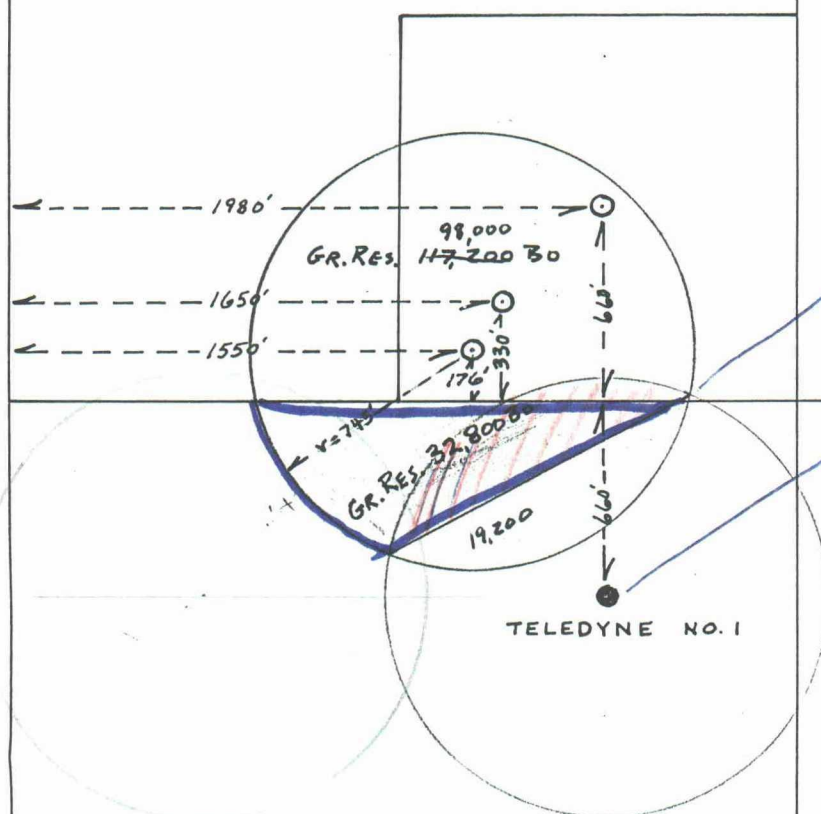


11

TS 23 S



- No flow barrier

40 Ave am

40 ft
 $R = 745'$
 Assuming
 revenues = 150,000 \$/yr
 Well will
 clear
 32,500 \$/yr
 from
 offset
 across

8.75 Acres

SCALE 1"=500'

DRAINAGE - PROPOSED LOCATION

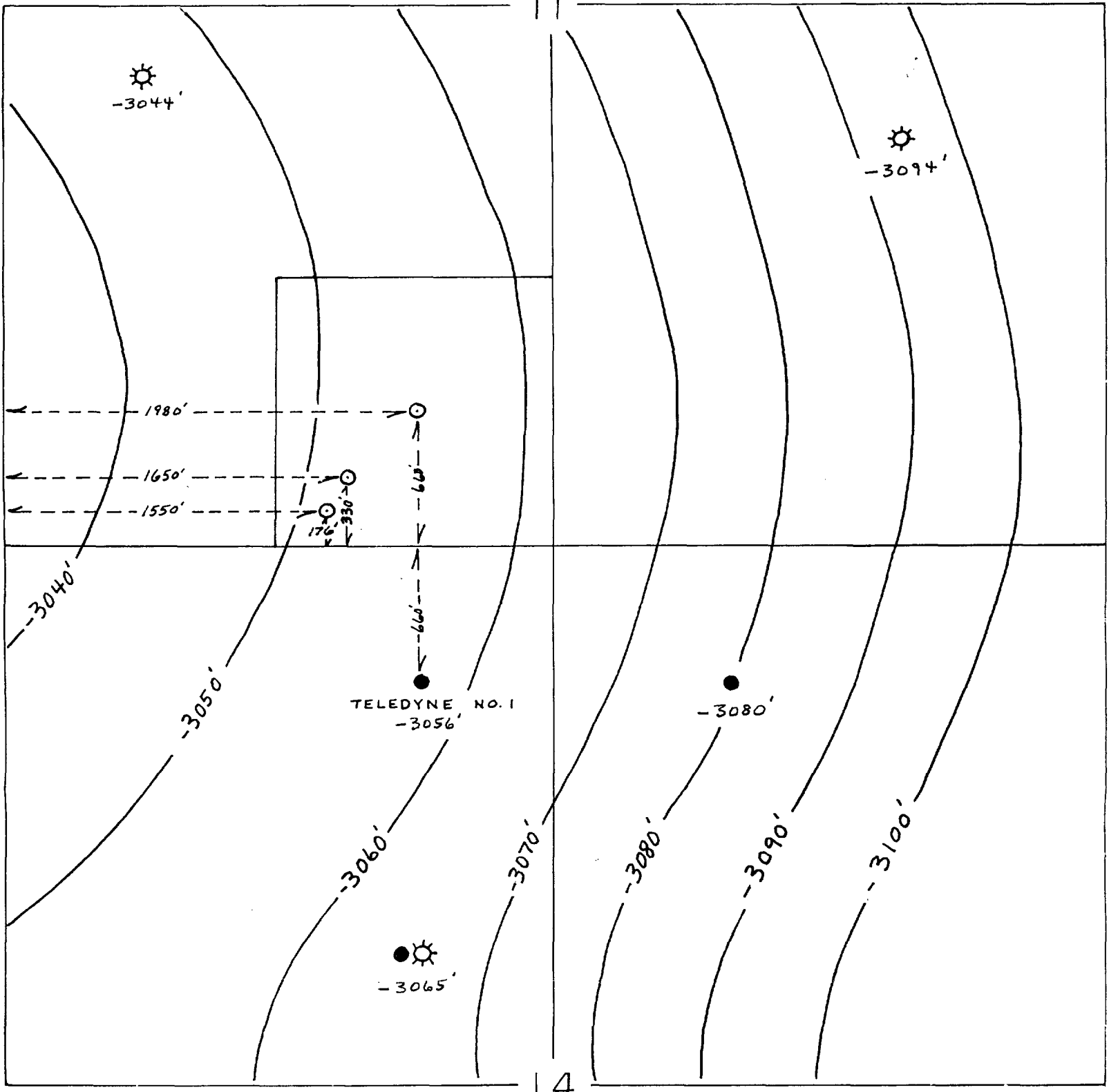
OIL CONSERVATION DIVISION

Bird Creek EXHIBIT NO. 4

CASE NO. 9883

R 28 E

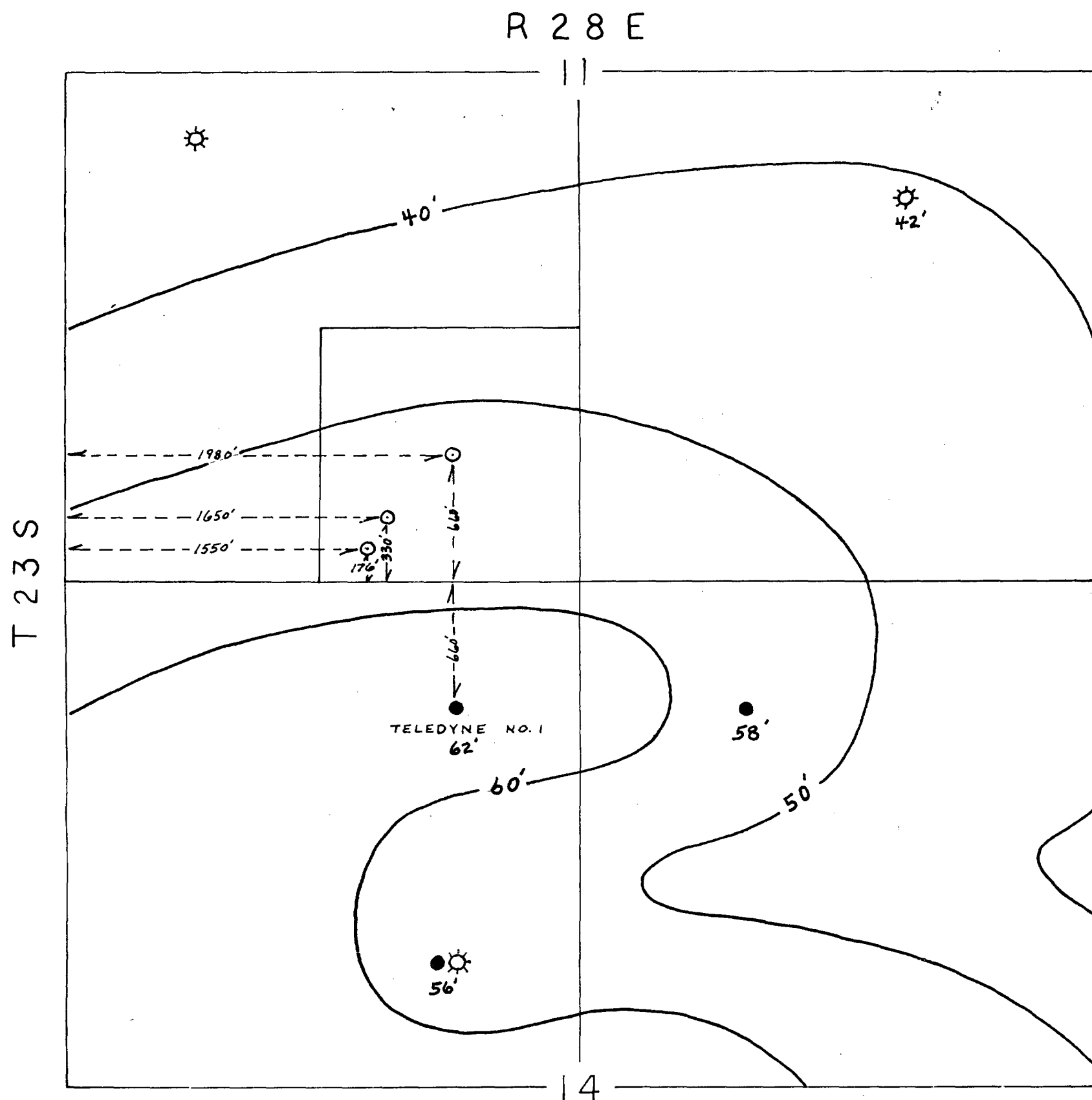
T 23 S



SCALE 1"=500'

BIRD CREEK
RESOURCES
TOP DELAWARE PAY
C.I.=10'

Bird Creek 3
9883



BIRD CREEK
RESOURCES
NET PAY ISOPACH
 $\phi \geq 10\%$

STATE EXAMINER CATANACH
U.S. CONSERVATION DIVISION
BirdCreek EXHIBIT NO. 2
CASE NO. 9883

The incremental cost (\$30,000) of directional vs vertical drilling has a negligible effect on economics (L-M-N):

	<u>Vertical (O)</u>	<u>Directional (P)</u>
Completed well cost	\$330,000	\$360,000
Net cash flow	\$1.86 mil	\$1.83 mil
10% PV CF	1.42	1.39
Payout, months	5	5.5
RCI	6.6	6.1
IRR	100%	100%
FC, \$/BOE	\$2.54	\$2.77

- (L) Vertical hole AFE
- (M) Directionally drilled hole AFE
- (N) Directional drilling procedure and cost estimate
- (O) Cash flow projection for "vertical"
- (P) Cash flow projection for "directional"

CORE EXAMINER CATANACH	
OIL CONSERVATION DIVISION	
BirdCreek	EXHIBIT NO. 5
CASE NO.	9883



DIRECTIONAL
INVESTMENT
GUIDANCE, INC.

P.O. BOX 7238

MIDLAND, TEXAS 79708

915/697-1490

B. K. Energy & Hudson Oil & Gas Company
Brad Burk

DIRECTIONAL COST ESTIMATE FOR 721' DISPLACEMENT @ T.V.D. OF 6200'

9	Directional Service days @ \$400/day	\$	3,600.00
9	Subsistence days @ \$50.00/day		450.00
1	6½" OD x 30.00' non-magnetic drill collar for 9 days @ \$55/day		495.00
1	Set directional single shot equipment for 9 days @ \$50/day		450.00
4	Intergal blade 7 7/8" OD stabilizers @ \$750/each		3,000.00
1	12 hr. mud motor run for deflecting (6½ low-speed motor) @ \$175/hr.		2,100.00
1	12 hr. surface read-out steering tool run with the above @ \$150/hr.		1,800.00
1	Mud motor correction run (if needed) 10 drilling hrs. @ \$175/hr.		1,750.00
1	Surface read-out for correction @ \$150.00/hr.		150.00
1	1½° deflecting sub - per day charge		250.00
	Trucking, Misc., etc.		700.00
	Total	\$	16,095.00

Multi-shot survey - surface to K.O.P.

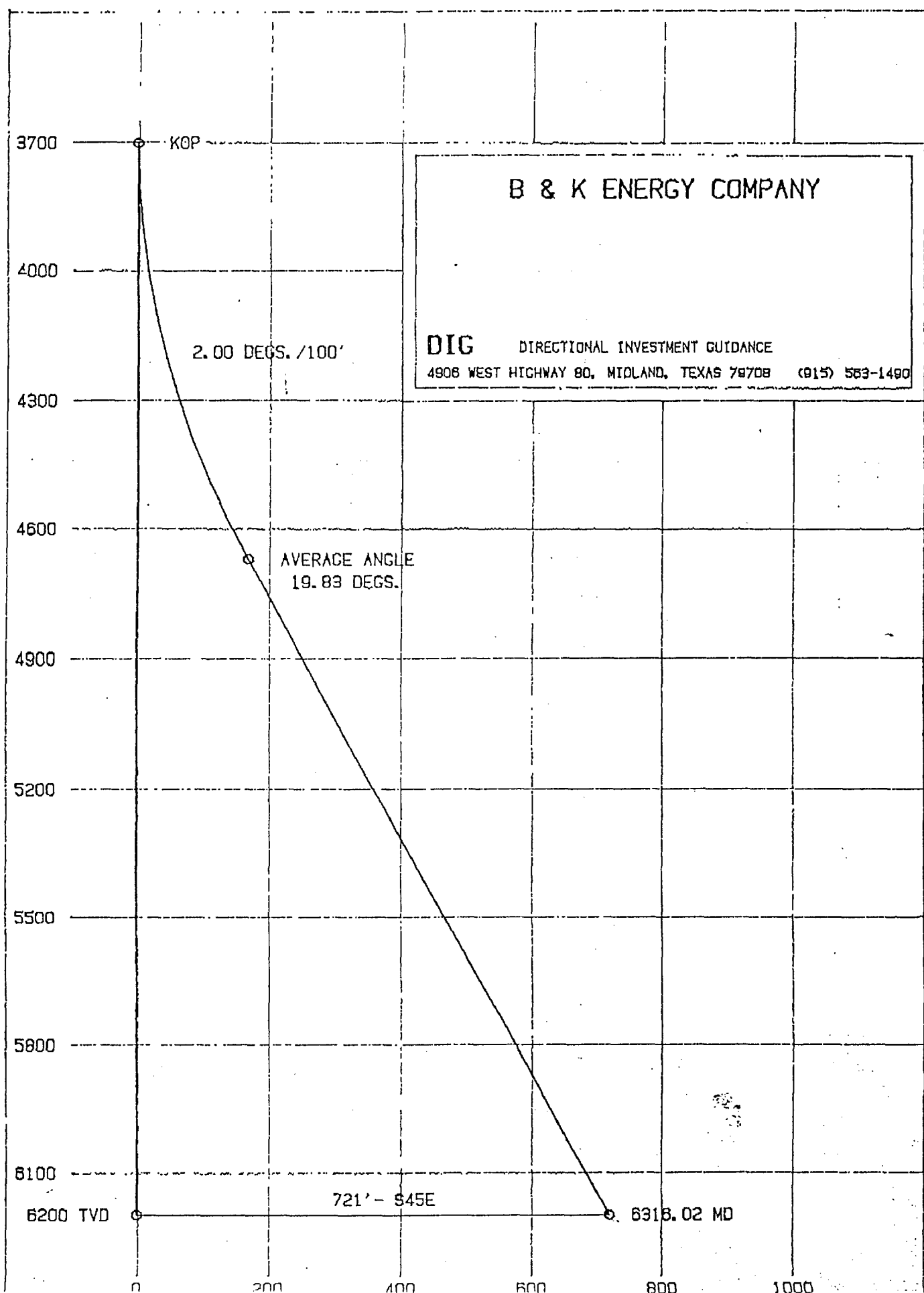
1,100.00

BEFORE EXAMINER CATANACH

OIL CONSERVATION DIVISION

Birdcrack EXHIBIT NO. 6

CASE NO. 9883



AUTHORITY FOR EXPENDITURE

WELL COST ESTIMATE

WELL DELAWARE WELL DATE 2-28-90
 LOCATION SE SW SEC. 11-23S-28E EDDY CO NM
 PROPOSED TO 6200' DRILLING DAYS 11

TANGIBLE WELL COSTS

Tubulars

500' of 8 5/8" @ \$ 9.00 /ft.
6200' of 5 1/2" @ \$ 5.00 /ft.
6200' of 2 7/8" @ \$ 3.00 /ft.
 of @ \$ /ft.
 of @ \$ /ft.

PRODUCER

DRYHOLE

Transportation and Hauling

Wellhead Assembly

Subsurface equip. - packer, rods, pumps, etc.

Separation facilities, Installed

Tanks and shipping facilities, Installed

Flow lines, Pipe & electric lines, Installed

Pumping unit and compressor

Other equipment, misc.

Total Tangibles

INTANGIBLE WELL COSTS

Permits, surveys, foundations

Location, roads and damages

Contract drilling

6200 ft. @ \$ /ft.
2 days @ \$ 4300 /days

Bits

Compl. Unit 5 days @ \$ 1200 /day

Cement and cement service

Drilling fluid materials

Fuel, water, power

Supplies

Drill stem testing @

Coring and analysis

Mud logging

Wireline service

Logging

Perforating

Other

Formation Treating

Transportation and hauling

Rentals and misc.

Contract labor

Direct supervision

Engineering supervision

Geological supervision

Insurance and tax

Overhead

Contingencies

Total Intangibles

Total Well Cost

4500	4,500
31,000	-
18,600	-
3,500	3,500
6,000	2,000
-	-
4,000	-
15,000	-
5,000	-
-	-
3,000	-
90,600	10,000
2,000	2,000
12,000	12,000
74,400	74,400
18,600	8,600
1,000	1,000
6,000	-
24,000	5,000
8,000	8,000
1,500	1,500
1,000	1,000
-	-
-	-
2,000	2,000
-	-
8,000	8,000
3,000	-
-	-
20,000	-
6,000	2,000
8,000	4,000
6,000	3,000
8,000	5,000
3,000	3,000
2,000	2,000
1,000	1,000
4,100	3,500
30,000	16,000
239,600	163,000
330,200	173,000

AUTHORITY FOR EXPENDITURE

WELL COST ESTIMATE

WELL DELAWARE WELL - DIRECTIONALLY DRILLED DATE 2-28-90
 LOCATION SE SW SEC. 11-23S-28E EDDY Co NM
 PROPOSED TO 6200' TVD - 6316' MD DRILLING DAYS 15

TANGIBLE WELL COSTS

Tubulars

500'	of	8 5/8"	@ \$ 9.00 /ft.
6316'	of	5 1/2"	@ \$ 5.00 /ft.
6316'	of	2 7/8"	@ \$ 3.00 /ft.
	of		@ \$ /ft.
	of		@ \$ /ft.

PRODUCER

DRYHOLE

Transportation and Hauling

Wellhead Assembly

Subsurface equip. - packer, rods, pumps, etc.

Separation facilities, Installed

Tanks and shipping facilities, Installed

Flow lines, Pipe & electric lines, Installed

Pumping unit and compressor

Other equipment, misc.

Total Tangibles

INTANGIBLE WELL COSTS

Permits, surveys, foundations

Location, roads and damages

Contract drilling

ft. @ \$ /ft.
15 days @ \$ 6000 /days

Bits

Compl. Unit 5 days @ \$ 1200 /day

Cement and cement service

Drilling fluid materials

Fuel, water, power

Supplies

~~Drill stem testing~~ DIR. DRG. SERVICE

Coring and analysis

Mud logging

Wireline service

Logging

Perforating

Other

Formation Treating

Transportation and hauling

Rentals and misc.

Contract labor

Direct supervision

Engineering supervision

Geological supervision

Insurance and tax

Overhead

Contingencies

Total Intangibles

Total Well Cost

4,500	4,500
31,600	-
18,900	-
3,500	3,500
6,000	2,000
-	-
4,000	-
15,000	-
5,000	-
-	-
3,000	-
91,500	10,000
2,000	2,000
12,000	12,000
90,000	90,000
1,000	1,000
6,000	-
24,000	5,000
8,000	8,000
1,500	1,500
1,000	1,000
17,200	17,200
-	-
2,000	2,000
-	-
8,000	8,000
3,000	-
-	-
20,000	-
6,000	2,000
8,000	4,000
6,000	3,000
8,000	5,000
3,000	3,000
2,000	2,000
1,000	1,000
4,100	3,500
35,000	17,000
268,800	188,200
360,300	198,200