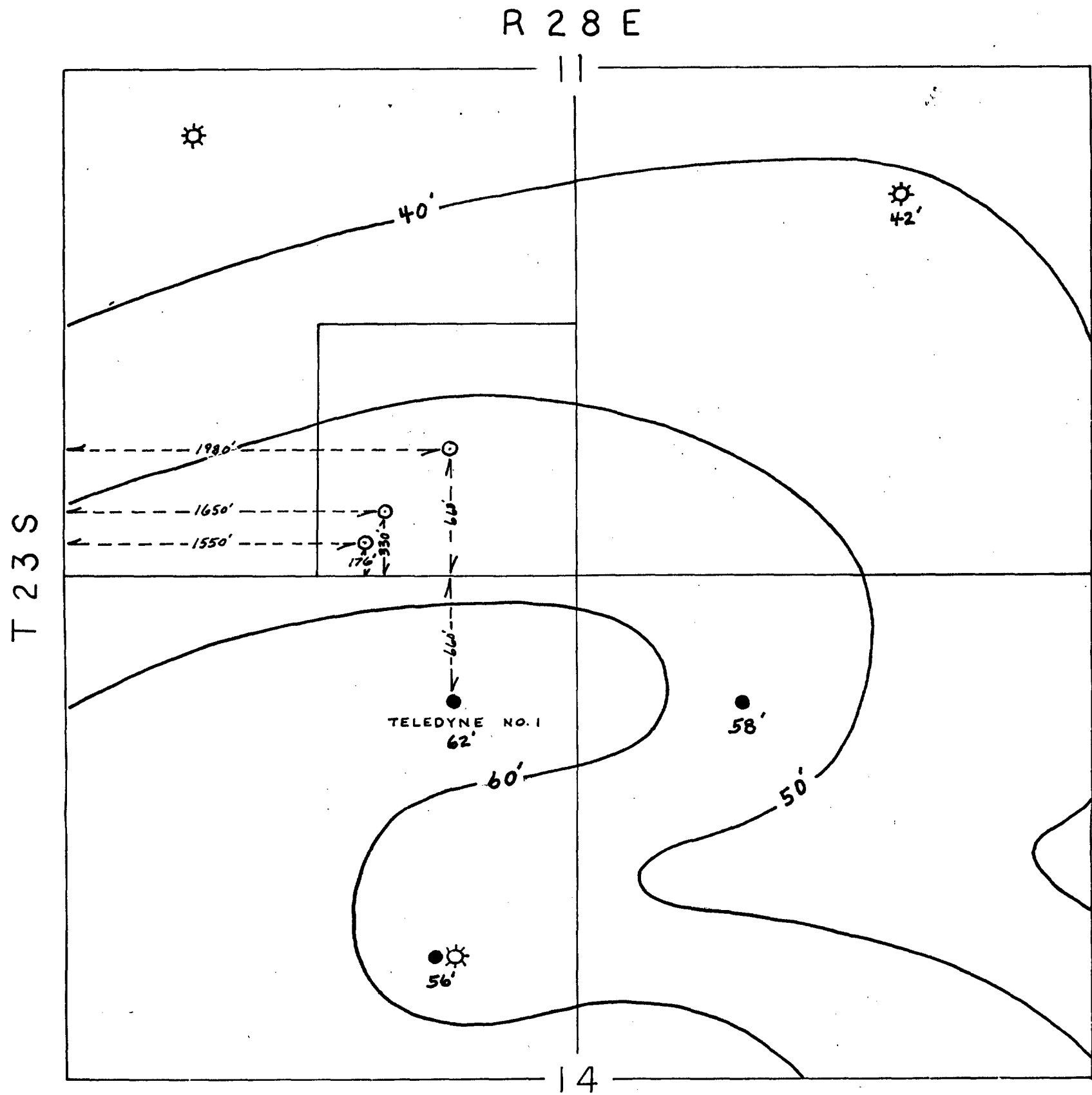


Bird Creek Exhibits 2
through 6
Complete Set



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

BEFORE EXAMINER CATANACH

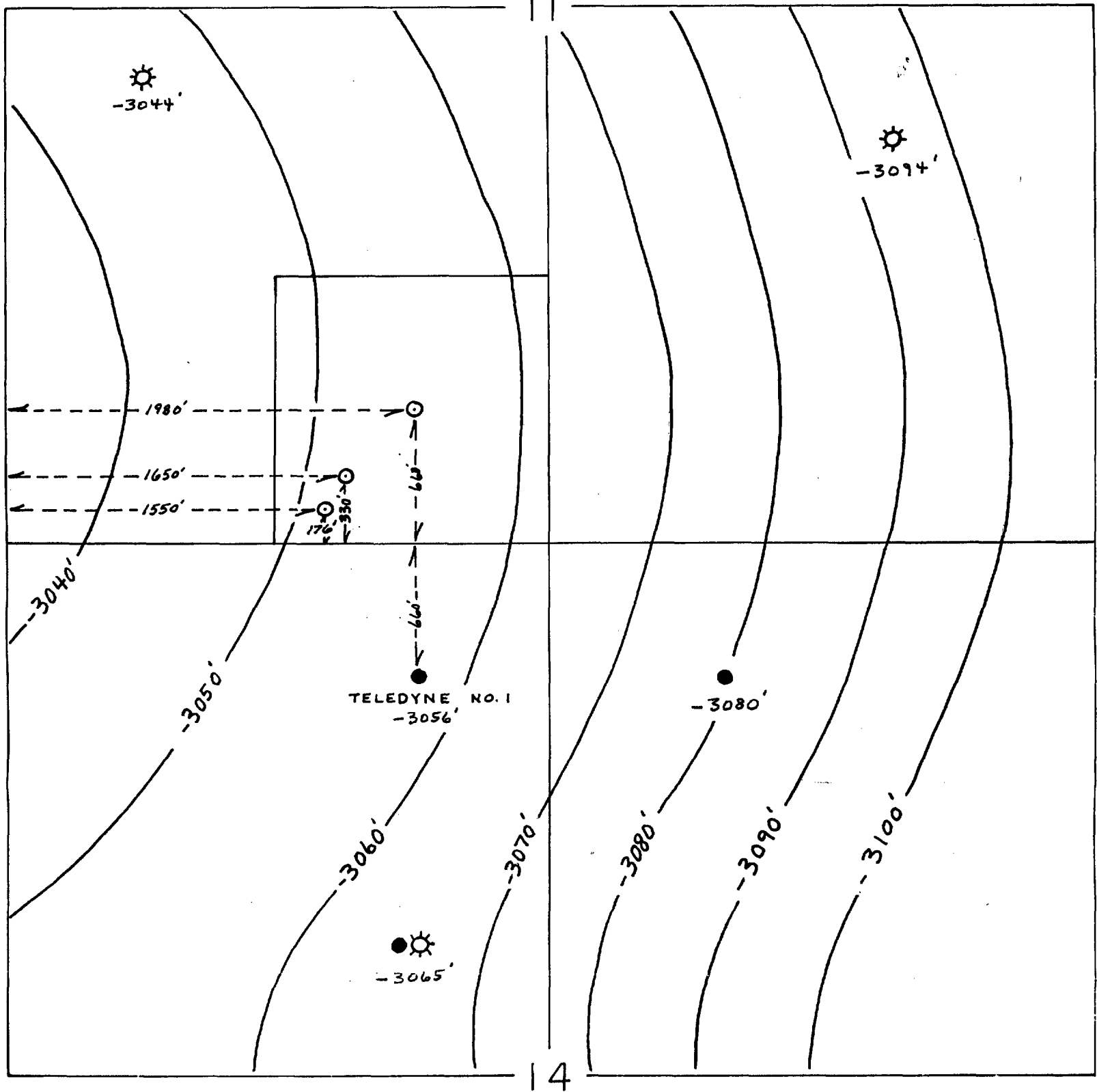
OIL CONSERVATION DIVISION

Bird Creek EXHIBIT NO. 2

CASE NO. 9883

R 28 E

T 23 S



SCALE 1"=500'

BIRD CREEK
RESOURCES

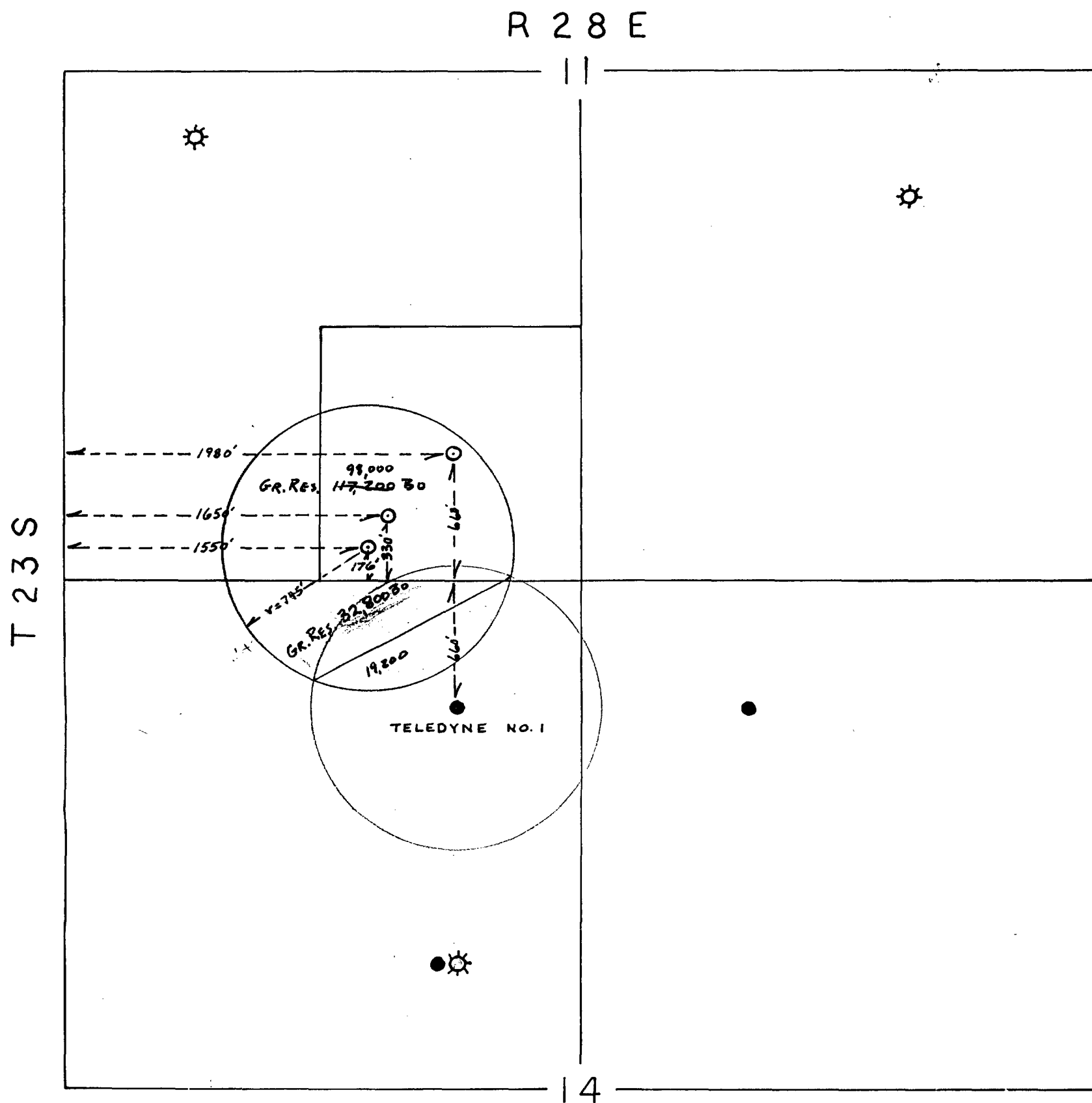
TOP DELAWARE PAY
C.I.=10'

BEFORE EXAMINER CATANACH

OIL CONSERVATION DIVISION

Bird Creek EXHIBIT NO. 3

CASE NO. 9883



SCALE 1"=500'

BIRD CREEK
RESOURCES

DRAINAGE - PROPOSED LOCATION

BEFORE EXAMINER CATANACH	
OIL CONSERVATION DIVISION	
Bird Creek	EXHIBIT NO. 4
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
ROI	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"

WILLIAM BIRD CREEK OIL FIELD	
OIL CORRELATION DIVISION	
BIRD CREEK	WELL 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'

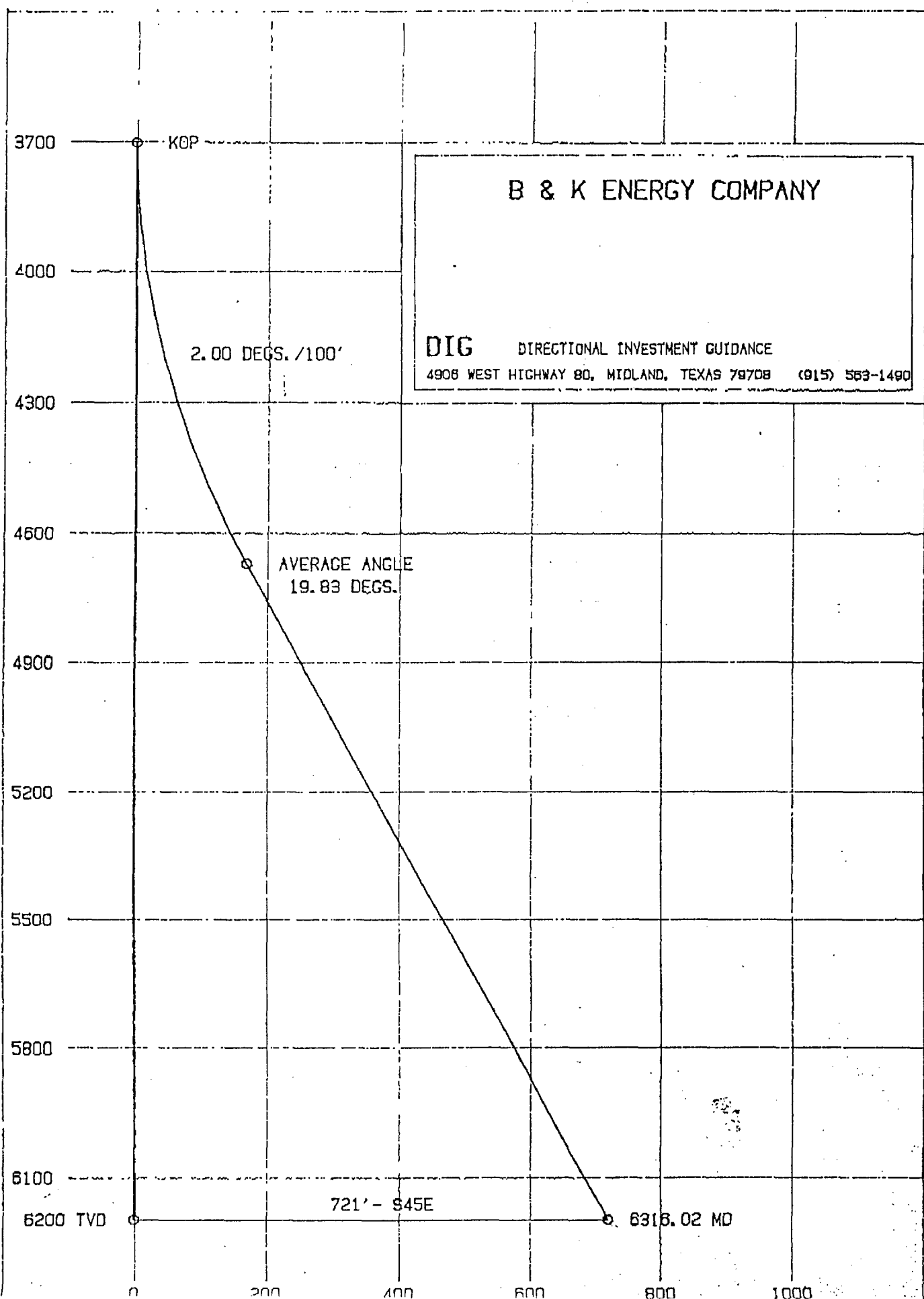
9	Directional Service days @ \$400/day	\$	3,600.00
9	Subsistence days @ \$50.00/day		450.00
1	6½" OD x 30.00' non-magnetic drill collar for 9 days @ \$55/day		495.00
1	Set directional single shot equipment for 9 days @ \$50/day		450.00
4	Intergal blade 7 7/8" OD stabilizers @ \$750/each		3,000.00
1	12 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

Bird Creek 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.

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

PRODUCER

DRYHOLE

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

15 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

31,600

18,900

3,500

6,000

-

4,000

15,000

5,000

-

3,000

91,500

2,000

12,000

-

90,000

1,000

6,000

24,000

8,000

1,500

1,000

17,200

-

2,000

-

8,000

3,000

20,000

6,000

8,000

6,000

8,000

3,000

2,000

1,000

4,100

35,000

268,800

360,300

4,500

-

-

3,500

2,000

-

-

-

-

-

-

10,000

2,000

12,000

-

90,000

1,000

-

5,000

8,000

1,500

1,000

17,200

-

2,000

-

8,000

-

-

-

4,000

3,000

5,000

3,000

2,000

1,000

3,500

17,000

188,200

198,200