



DIRECTIONAL
INVESTMENT
GUIDANCE, INC.

P.O. BOX 7238

MIDLAND, TEXAS 79708

915/697-1490

*Case No.
9450*

November 10, 1988

State of New Mexico
Oil Conservation Division
P.O. Box 2088
Sante Fe, New Mexico 87501

Attached is a complete copy of the 3 directional surveys DIG performed on Pennzoil Company's State Well No. 2-1, Lea County, New Mexico.

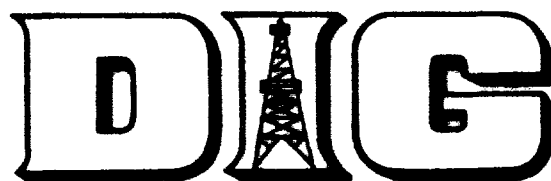
If further assistance or information is needed please feel free to contact me at the letterhead address.

Regards,

Larry Massey
Larry Massey
DIG, Inc.

LM/1sm

R-8725



**SUB-SURFACE
DIRECTIONAL
SURVEY
REPORT**

PENNZOIL COMPANY	
COMPANY	
STATE WELL NO. 2-1	2-17-37
WELL NAME	
LEA COUNTY, NEW MEXICO	
STATE AND COUNTY	

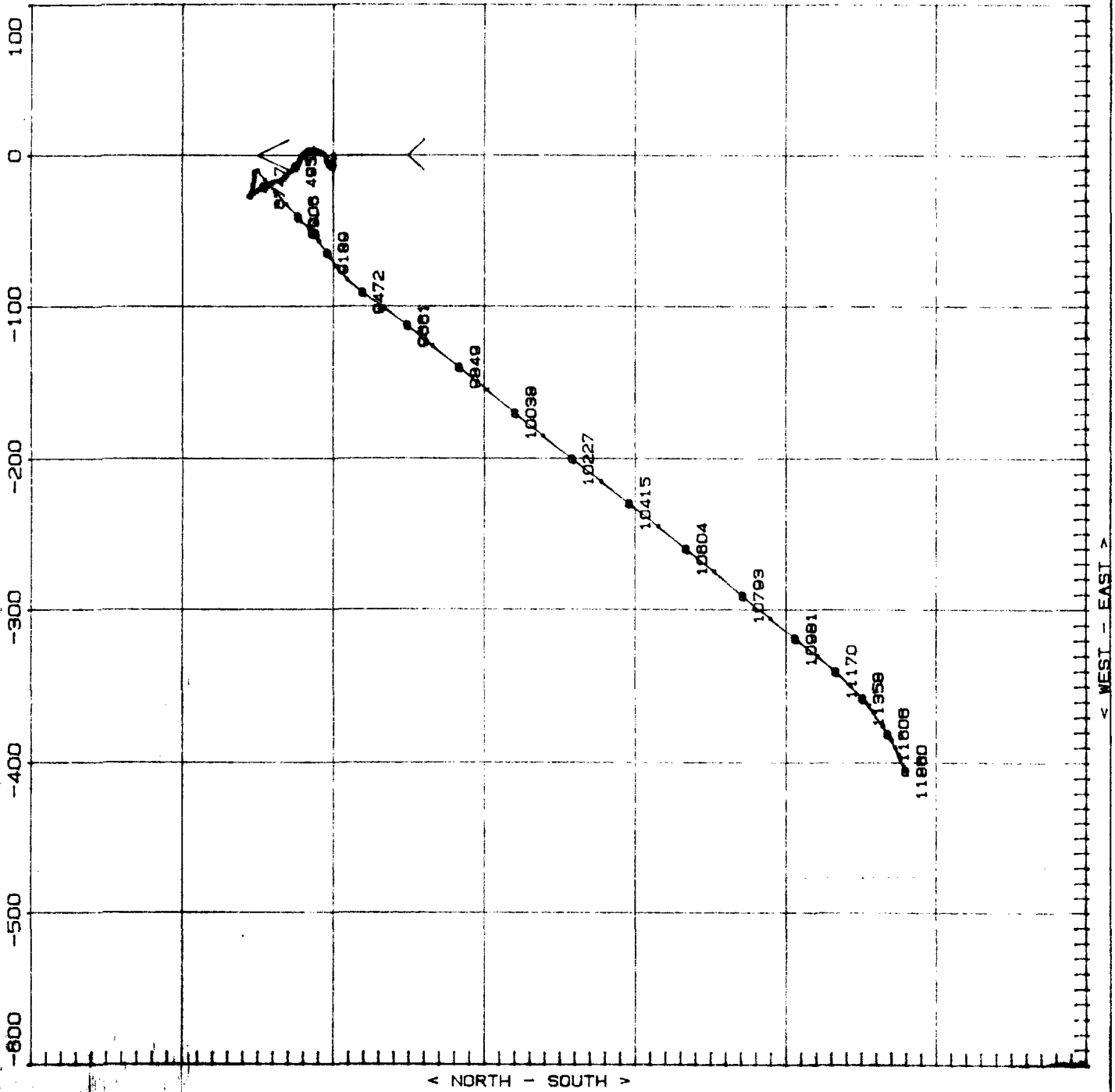
FIELD REPORT

PENNZOIL COMPANY

WELL # .
 STATE WELL NO. 2-1
 LOCATION .
 LEA COUNTY, NEW MEXICO
 DATE .
 10/1/88, 10/1/88, 10/27/88
 JOB TYPE .
 GYRO, MULTISHOT, MULTISHOT
 JOB # .
 09-2129, NS-2128, NS-2137
 SURVEYOR .
 MASSEY, MASSEY, EATON
 DEPTHS .
 0 - 4075, 4075 - 8447, 8447 - 11830
 DECL. .
 0 DEGREES EAST
 ELEV. .
 0'
 FILE # .
 WT-LL126

 FINAL STATION DATA:
 MD. 11860.00
 TVD. 11799.29
 N/S -380.01
 E/W -405.43
 CLOSURE DISTANCE
 555.88 FEET
 CLOSURE DIRECTION
 S 46.85 W

1 IN. = 100 FT.





PENNZOIL COMPANY
STATE WELL NO. 2-1
WT-LL125

PAGE 1
14:98:51
88/10/31

MEASURED DEPTH FEET	INCL. ANGLE DEGS.	HOLE DIRECTION DEGS.	COURSE LENGTH FEET	VERTICAL DEPTH FEET	TRUE VERTICAL SECTION FEET	N/S	E/W	RECTANGULAR COORDINATES	C L O S U R E	DISTANCE FEET	DIRECTION DEGS.	DOG-LEG SEVERITY DG/100FT
0.00	0.00	S 43.00 E	0.00	0.00	0.00	0.00 N	0.00 E	0.00	0.00	0.00	0.00 E	0.00
100.00	.10	S 43.00 E	100.00	100.00	.01	.06 S	.06 E	.09	S 43.00 E	.09	S 43.00 E	.10
200.00	.20	S 26.00 E	100.00	200.00	.07	.28 S	.21 E	.35	S 36.63 E	.35	S 36.63 E	.11
300.00	.20	N 87.00 W	100.00	300.00	.36	.52 S	.05 E	.52	S 05.21 E	.52	S 05.21 E	.34
400.00	.80	N 75.00 W	100.00	399.99	.82	.38 S	.81 W	.90	S 64.71 W	.90	S 64.71 W	.61
500.00	.90	N 83.00 W	100.00	499.98	1.55	10 S	2.27 W	2.27	S 87.44 W	2.27	S 87.44 W	.15
600.00	.70	N 81.00 W	100.00	599.97	2.32	.09 N	3.55 W	3.55	N 88.54 W	3.55	N 88.54 W	.20
700.00	.40	N 86.00 W	100.00	699.97	2.87	.20 N	4.60 W	4.61	N 87.49 W	4.61	N 87.49 W	.30
800.00	.50	S 80.00 W	100.00	799.97	3.41	.16 N	5.39 W	5.39	N 88.29 W	5.39	N 88.29 W	.15
900.00	.50	S 80.00 W	100.00	899.96	4.09	.01 N	6.35 W	6.25	N 89.92 W	6.25	N 89.92 W	0.00
1000.00	.20	S 94.00 W	100.00	999.96	4.53	.09 S	5.95 W	6.85	S 89.37 W	6.85	S 89.37 W	.30
1100.00	.20	N 96.00 W	100.00	1099.96	4.78	.02 S	7.20 W	7.20	S 89.35 W	7.20	S 89.35 W	.03
1200.00	.20	S 82.00 W	100.00	1199.96	5.02	.09 S	7.55 W	7.55	S 89.29 W	7.55	S 89.29 W	.04
1300.00	.30	N 68.00 W	100.00	1299.96	5.26	.04 S	7.98 W	7.98	S 89.70 W	7.98	S 89.70 W	.15
1400.00	.20	N 64.00 W	100.00	1399.96	5.39	.14 N	8.37 W	8.38	N 89.07 W	8.38	N 89.07 W	.10
1500.00	.20	N 67.00 W	100.00	1499.95	5.49	.28 N	8.69 W	8.70	N 88.15 W	8.70	N 88.15 W	.01
1600.00	.20	N 68.00 W	100.00	1599.95	5.60	.41 N	9.01 W	9.02	N 87.37 W	9.02	N 87.37 W	.00
1700.00	.10	N 64.00 W	100.00	1699.96	5.67	.52 N	9.25 W	9.27	N 86.78 W	9.27	N 86.78 W	.10
1800.00	.10	N 43.00 W	100.00	1799.96	5.69	.62 N	9.39 W	9.41	N 86.20 W	9.41	N 86.20 W	.04
1900.00	.20	N 25.00 E	100.00	1899.96	5.53	.87 N	9.43 W	9.47	N 84.74 W	9.47	N 84.74 W	.19
2000.00	.20	N 10.00 E	100.00	1999.95	5.21	1.20 N	9.33 W	9.40	N 82.67 W	9.40	N 82.67 W	.05
2100.00	.40	N 37.00 E	100.00	2099.95	4.71	1.68 N	9.12 W	9.27	N 79.59 W	9.27	N 79.59 W	.24
2200.00	.40	N 54.00 E	100.00	2199.95	4.02	2.16 N	8.52 W	8.89	N 75.92 W	8.89	N 75.92 W	.12
2300.00	.40	N 51.00 E	100.00	2299.95	3.34	2.59 N	8.07 W	9.47	N 72.22 W	9.47	N 72.22 W	.02
2400.00	.50	N 44.00 E	100.00	2399.95	2.56	3.12 N	7.49 W	9.11	N 67.40 W	9.11	N 67.40 W	.11

PENNZOIL COMPANY
STATE WELL NO. 2-1
WT-LL129

PAGE 2
14-89(48)
98/10/31

MEASURED INCL. HOLE DIRECTION DEGS. DEPTH FEET TRUE VERTICAL DEPTH FEET VERTICAL SECTION FEET N/S FEET C L O S U R E DISTANCE FEET DEGS. SEVERITY

2500.00	.40	N 62.00 E	100.00	2499.94	1.79	3.59 N	5.37 W	7.75' N 62.41 W	.17
2600.00	.60	N 62.00 E	100.00	2599.94	.98	4.00 N	5.10 W	7.29' N 56.74 W	.26
2700.00	.60	N 67.00 E	100.00	2699.93	.02	4.45 N	5.15 W	5.81' N 49.18 W	.95
2800.00	.60	N 68.00 E	100.00	2799.93	-.92	4.85 N	4.18 W	6.41' N 40.78 W	.01
2900.00	.60	S 82.00 E	100.00	2899.92	-1.69	4.98 N	3.16 W	5.89' N 32.39 W	.31
3000.00	.40	S 73.00 E	100.00	2999.92	-2.10	4.79 N	3.31 W	5.31' N 25.71 W	.11
3100.00	.50	N 87.00 E	100.00	3099.91	-2.54	4.69 N	1.53 W	4.94' N 18.05 W	.15
3200.00	.70	N 53.00 E	100.00	3199.91	-3.44	5.05 N	.56 W	5.08' N 06.33 W	.49
3300.00	1.00	N 42.00 E	100.00	3299.90	-4.91	5.05 N	.53 E	6.07' N 05.03 E	.64
3400.00	1.10	N 31.00 E	100.00	3399.89	-6.74	7.52 N	1.82 E	7.69' N 12.17 E	.32
3500.00	1.00	N 18.00 E	100.00	3499.86	-8.49	9.19 N	3.38 E	9.49' N 14.53 E	.21
3600.00	1.00	N 12.00 E	100.00	3599.85	-10.06	10.97 N	3.93 E	11.23' N 14.69 E	.15
3700.00	1.00	N 06.00 W	100.00	3699.83	-11.43	12.70 N	3.92 E	12.94' N 13.85 E	.31
3800.00	.90	N 03.00 W	100.00	3799.82	-12.59	14.25 N	3.79 E	14.52' N 11.03 E	.11
3900.00	.80	N 06.00 E	100.00	3899.81	-13.74	15.74 N	3.33 E	15.99' N 10.00 E	.17
4000.00	.70	N 05.00 E	100.00	3999.80	-14.80	17.04 N	3.96 E	17.29' N 09.54 E	.11
4075.00	.40	N 09.00 W	75.00	4074.80	-15.33	17.76 N	3.93 E	18.00' N 09.37 E	.11
4198.00	.80	N 59.00 W	123.00	4197.79	-15.65	18.79 N	3.23 E	19.92' N 06.78 E	.11
4293.00	1.10	N 27.00 W	95.00	4292.78	-16.81	19.93 N	1.10 E	19.95' N 03.57 E	.11
4387.00	.50	N 59.00 W	94.00	4386.77	-18.95	20.87 N	1.29 E	21.88' N 10.75 E	.11
4482.00	.70	N 61.00 W	95.00	4481.76	-18.76	21.37 N	.57 W	21.38' N 01.53 W	.21
4576.00	1.10	N 64.00 W	94.00	4575.75	-18.42	22.15 N	1.88 W	22.13' N 04.98 W	.13
4670.00	.90	N 71.00 W	94.00	4669.74	-14.90	22.88 N	3.40 W	22.93' W 08.52 W	.25
4765.00	.90	N 72.00 W	95.00	4764.72	-14.33	23.15 N	4.81 W	23.65' N 11.74 W	.03
4859.00	1.20	N 56.00 W	94.00	4858.71	-13.98	23.51 N	5.35 W	24.74' N 14.69 W	.14

MEASURED INCL. HOLE DIRECTION DEGS. COURSE LENGTH FEET VERTICAL DEPTH FEET TRUE VERTICAL SECTION FEET N/S FEET E/W FEET RECTANGULAR RECORD IN A - E S DISTANCE FEET C L D S U R E DOG-LED SEVERITY DEGS. 100/100FT

4954.00	.90	N 35.00 W	95.00	4953.69	-13.99	25.12 N	7.59 W	26.24' N 16.81 W	51
5048.00	.90	N 71.00 W	94.00	5047.68	-13.89	25.99 N	8.75 W	27.43' N 18.50 W	59
5142.00	1.50	N 41.00 W	94.00	5141.66	-13.55	27.08 N	10.36 W	29.00' N 20.94 W	90
5237.00	1.10	N 24.00 W	95.00	5236.63	-14.27	28.89 N	11.52 W	31.10' N 21.73 W	59
5331.00	1.20	N 47.00 W	94.00	5330.62	-14.70	30.42 N	12.60 W	32.93' N 22.51 W	50
5426.00	1.20	N 53.00 W	95.00	5425.60	-14.57	31.70 N	14.13 W	34.70' N 24.02 W	13
5520.00	.90	N 34.00 W	94.00	5519.58	-14.84	32.94 N	15.31 W	36.33' N 24.93 W	48
5614.00	1.20	N 45.00 W	94.00	5613.56	-15.12	34.27 N	16.40 W	37.99' N 25.58 W	38
5709.00	.40	N 21.00 W	95.00	5708.55	-15.48	35.37 N	17.12 W	39.30' N 25.83 W	92
5803.00	.90	N 25.00 W	94.00	5802.55	-15.95	36.35 N	17.54 W	40.36' N 25.75 W	53
5898.00	.90	N 17.00 E	95.00	5897.54	-16.48	37.81 N	17.64 W	41.72' N 25.31 W	60
5992.00	1.00	N 31.00 W	94.00	5991.52	-16.80	39.31 N	17.92 W	43.15' N 24.39 W	83
6086.00	.80	N 39.00 W	94.00	6085.51	-17.35	40.52 N	18.57 W	44.51' N 24.34 W	25
6181.00	.60	N 14.00 W	95.00	6180.50	-18.80	41.55 N	19.13 W	45.77' N 24.78 W	33
6275.00	.40	N 54.00 W	94.00	6274.50	-19.80	42.32 N	19.53 W	46.56' N 24.94 W	49
6370.00	0.00	* * * * *	95.00	6369.50	-18.99	42.41 N	19.90 W	45.95' N 25.14 W	42
6464.00	.20	N 36.00 W	94.00	6463.50	-19.01	42.54 N	20.00 W	47.91' N 25.17 W	21
6559.00	1.10	N 21.00 W	95.00	6558.49	-19.39	43.49 N	20.51 W	48.08' N 25.25 W	27
6653.00	1.00	N 19.00 W	94.00	6652.48	-20.23	45.11 N	21.10 W	49.80' N 25.07 W	11
6747.00	.40	N 32.00 W	94.00	6746.47	-20.68	46.14 N	21.59 W	51.94' N 25.18 W	66
6842.00	.80	N 24.00 W	95.00	6841.46	-21.04	47.02 N	22.06 W	51.94' N 25.13 W	43
6936.00	1.10	N 29.00 W	94.00	6935.45	-21.64	48.41 N	22.75 W	53.47' N 25.17 W	37
7031.00	1.20	N 28.00 W	95.00	7030.43	-22.31	50.09 N	23.66 W	55.40' N 25.29 W	11
7125.00	1.10	N 35.00 W	94.00	7124.41	-22.87	51.70 N	24.55 W	57.27' N 25.49 W	18
7219.00	1.10	N 30.00 W	94.00	7218.39	-23.79	53.22 N	25.62 W	59.06' N 25.70 W	19

PENNZOIL COMPANY
STATE WELL NO. 2-1
WT-LL125

PAGE 4
14:11:38
98/10/31

MEASURED INCL. HOLE VERTICAL TRUE VERTICAL RECTANGULAR C L O S U R E DOG-LEG
DEPTH ANGLE DIRECTION DEPTH DEPTH SECTION COORDINATES DISTANCE DIRECTION SEVERITY
FEET DEGS. FEET FEET FEET N/S FEET E/W FEET DEGS. DG/100FT

7314.00	1.60	N 06.00 W	95.00	7313.37	-24.53	55.33 N	26.30 W	61.27' N 25.43 W	.78
7408.00	1.00	S 83.00 W	94.00	7407.34	-24.45	56.52 N	27.80 W	62.99' N 26.19 W	2.02
7503.00	1.20	S 64.00 E	95.00	7502.33	-23.29	55.18 N	28.03 W	61.89' N 26.93 W	2.22
7597.00	1.70	S 75.00 E	94.00	7596.30	-24.12	54.35 N	25.80 W	60.16' N 25.40 W	.61
7691.00	1.20	S 88.00 E	94.00	7690.27	-25.39	54.00 N	23.45 W	58.87' N 23.48 W	.53
7786.00	1.20	S 86.00 E	95.00	7785.24	-26.52	53.89 N	21.47 W	58.91' N 21.72 W	.04
7880.00	.80	S 79.00 E	94.00	7879.23	-27.52	53.58 N	19.84 W	57.23' N 20.29 W	.44
7975.00	1.50	S 61.00 E	95.00	7974.21	-28.20	53.03 N	18.06 W	56.02' N 18.81 W	.82
8069.00	1.10	N 83.00 E	94.00	8068.19	-28.25	52.53 N	16.00 W	55.01' N 16.91 W	.95
8163.00	.80	S 82.00 E	94.00	8162.17	-30.24	52.62 N	14.45 W	54.55' N 15.35 W	.41
8258.00	.70	N 80.00 E	95.00	8257.16	-31.93	52.64 N	13.21 W	54.27' N 14.09 W	.27
8352.00	1.00	S 81.00 E	94.00	8351.15	-32.80	52.55 N	11.92 W	53.96' N 12.65 W	.87
8447.00	.20	S 91.00 E	95.00	8446.15	-32.53	52.49 N	10.84 W	53.60' N 11.67 W	.84
8529.00	3.75	S 50.00 W	92.00	8528.09	-31.29	50.33 N	10.24 W	51.36' N 11.50 W	4.74
8623.00	6.00	S 51.00 W	94.00	8621.74	-23.41	45.25 N	16.40 W	48.13' N 19.92 W	2.40
8718.00	6.75	S 47.00 W	95.00	8716.15	-12.97	39.33 N	24.36 W	45.41' N 32.44 W	.92
8812.00	6.75	S 50.00 W	94.00	8809.50	-2.02	31.01 N	32.53 W	45.02' N 46.16 W	.31
8906.00	7.00	S 46.00 W	94.00	8902.82	9.15	23.48 N	40.99 W	47.24' N 60.20 W	.57
9001.00	6.25	S 49.00 W	95.00	8997.19	20.04	16.88 N	49.07 W	51.54' N 71.86 W	.87
9095.00	6.25	S 53.00 W	94.00	9090.63	30.11	9.64 N	57.02 W	57.83' N 80.41 W	.45
9189.00	6.00	S 56.00 W	94.00	9184.09	39.86	3.81 N	65.19 W	65.30' N 86.65 W	.43
9284.00	6.50	S 55.00 W	95.00	9279.53	49.97	2.04 S	73.71 W	73.74' S 88.41 W	.54
9378.00	7.00	S 45.00 W	94.00	9371.80	60.77	9.14 S	82.17 W	82.67' S 83.65 W	1.36
9472.00	9.75	S 34.00 W	94.00	9464.87	74.44	19.68 S	90.86 W	92.97' S 77.78 W	3.37
9567.00	11.25	S 35.00 W	95.00	9558.37	91.54	33.95 S	103.67 W	105.24' S 71.36 W	1.59

MEASURED INCL. HOLE VERTICAL VERTICAL RECTANGULAR C L O S U R E DUG-LEG
DEPTH ANGLE DIRECTION LENGTH DEPTH SECTION COORDINATES DISTANCE DIRECTION SEVERITY
FEET DEGS. FEET FEET FEET N/S FEET S/W FEET DEGS. FEET 26/100FT

9661.00	12.25	S 38.00 W	94.00	9650.30	110.72	49.34 S	112.05 W	122.43'	S 56.24 W	1.25
9755.00	13.50	S 39.00 W	94.00	9741.94	131.65	65.73 S	125.09 W	141.31'	S 62.38 W	1.35
9849.00	14.75	S 38.00 W	94.00	9833.09	154.56	83.68 S	139.37 W	162.56'	S 59.02 W	1.35
9944.00	14.50	S 39.00 W	95.00	9925.01	178.53	102.45 S	154.30 W	185.22'	S 56.42 W	.37
10038.00	14.75	S 40.00 W	94.00	10015.97	202.25	120.77 S	169.40 W	208.04'	S 54.51 W	.38
10132.00	15.00	S 39.00 W	94.00	10106.82	226.38	139.39 S	184.75 W	231.43'	S 52.97 W	.38
10227.00	15.00	S 38.00 W	95.00	10198.58	250.94	158.63 S	200.05 W	255.31'	S 51.59 W	.27
10321.00	14.75	S 38.00 W	94.00	10289.43	275.04	177.64 S	214.91 W	278.82'	S 50.42 W	.27
10415.00	14.75	S 39.00 W	94.00	10380.33	298.94	196.50 S	229.64 W	302.24'	S 49.45 W	0.00
10510.00	15.00	S 39.00 W	95.00	10472.15	323.30	215.59 S	243.52 W	326.22'	S 48.63 W	.35
10604.00	14.50	S 39.00 W	94.00	10561.05	348.22	234.19 S	259.89 W	349.03'	S 47.98 W	.53
10698.00	15.00	S 40.00 W	94.00	10653.95	371.15	252.65 S	275.11 W	373.52'	S 47.44 W	.55
10793.00	15.00	S 39.00 W	95.00	10745.72	395.73	271.53 S	290.75 W	397.89'	S 46.95 W	.27
10887.00	14.00	S 39.00 W	94.00	10836.72	419.25	289.92 S	305.56 W	421.21'	S 46.50 W	1.05
10981.00	12.00	S 37.00 W	94.00	10928.31	440.36	306.38 S	318.58 W	442.13'	S 46.10 W	2.18
11076.00	10.50	S 39.00 W	95.00	11021.48	458.87	321.18 S	329.99 W	460.49'	S 45.77 W	1.67
11170.00	9.00	S 41.00 W	94.00	11114.12	474.78	332.38 S	343.22 W	476.33'	S 45.58 W	1.6
11264.00	7.50	S 45.00 W	94.00	11207.14	488.26	343.24 S	349.41 W	489.80'	S 45.31 W	1.71
11358.00	6.75	S 49.00 W	94.00	11300.42	499.35	351.19 S	357.94 W	501.45'	S 45.55 W	.96
11387.79	6.67	S 50.88 W	29.78	11330.00	503.29	353.43 S	360.60 W	504.92'	S 45.58 W	.79
11410.00	6.61	S 52.28 W	22.22	11352.06	505.82	355.02 S	362.62 W	507.48'	S 45.61 W	.78
11453.00	6.50	S 55.00 W	43.00	11394.79	510.61	357.94 S	366.57 W	512.34'	S 45.68 W	.77
11547.00	6.75	S 55.00 W	94.00	11488.16	521.13	364.16 S	375.45 W	523.04'	S 45.88 W	.27
11552.00	6.76	S 55.32 W	5.00	11493.12	521.70	364.49 S	375.94 W	523.62'	S 45.89 W	.80
11606.00	6.91	S 58.77 W	54.00	11546.74	527.37	367.99 S	381.33 W	529.93'	S 46.02 W	.80

PENNZOIL COMPANY
STATE WELL NO. 2-1
WT-LL128

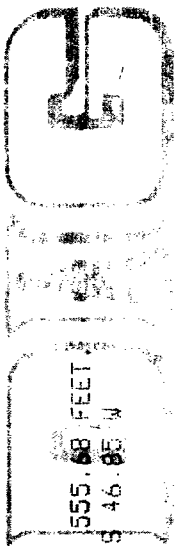
PAGE 5
14113129
88/7/1/21

MEASURED	INCL.	HOLE	COURSE	TRUE	VERTICAL	SECTION	RED TANGULAR	C L D S U R E	DUG-LEG
DEPTH	ANGLE	DIRECTION	LENGTH	DEPTH	FEET	FEET	COORDINATES	DISTANCE	SEVERITY
FEET	DEGS.	DEGS.	FEET	FEET	N/S	feet	E/W	FEET	DEGS.

11634.00	6.98	S 60.55 W	28.00	11574.53	531.08	369.70	S	533.22	S 46.11 W	.82
11641.00	7.00	S 61.00 W	7.00	11581.48	531.88	370.11	S	534.04	S 46.13 W	.82
11687.00	6.52	S 63.42 W	46.00	11627.16	536.93	372.64	S	539.25	S 46.29 W	1.22
11736.00	6.00	S 66.00 W	49.00	11675.87	541.81	374.92	S	544.32	S 46.47 W	1.20
11761.00	5.80	S 65.47 W	25.00	11700.74	544.15	375.97	S	546.74	S 46.55 W	.83
11830.00	5.25	S 64.00 W	69.00	11769.41	550.23	378.81	S	553.06	S 46.77 W	.82
11860.00	5.25	S 64.00 W	30.00	11799.29	552.75	380.01	S	555.68	S 46.85 W	0.00

FINAL STATION IS PROJECTED

CLOSURE DISTANCE =
CLOSURE DIRECTION =



GARREY CARRUTHERS
GOVERNOR

Mr. Thomas Kellahin
Kellahin, Kellahin & Aubrey
Attorneys at Law
Post Office Box 2265
Santa Fe, New Mexico

Applicant:
Pennzoil Exploration and
Production Company

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Florence Davidson

Copy of order also sent to:

Hobbs OCD	<u>X</u>
Artesia OCD	<u>X</u>
Aztec OCD	

Other _____