

DI-DRILL, INC.  
BAKERSFIELD, CALIFORNIA

MAGNETIC DIRECTIONAL SURVEY  
BY ANGLE AVERAGE METHOD

FOR

\*\*\*\*\*  
\* OREGON NATURAL GAS \*  
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JOB NUMBER: B42266

WELL NAME: IW 422<sup>6</sup>-10

LOCATION: COLUMBIA COUNTY

SURVEY DATE: 9 AUGUST 1988

SURVEY ENGINEER: GEORGE LOVE

MAGNETIC DECLINATION: 21.00E

TIE-ON COORDINATES AT: 532 M.D.,  
TAKEN FROM: DATA SURVEY SHEET

VERTICAL SECTION CALCULATED IN A  
PROPOSAL DIRECTION OF: S10-58E

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\* DEPTH MEASURED IN FEET \*  
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COMMENTS:

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\*\*\* THIS DIRECTIONAL SURVEY REPORT IS \*\*\*  
\*\* CORRECT TO THE BEST OF MY KNOWLEDGE \*\*  
\* AND IS SUPPORTED BY ACTUAL FIELD DATA! \*  
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\* COMPANY REPRESENTATIVE \*  
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DI-DRILL, INC.  
BAKERSFIELD, CALIFORNIA

JOB NUMBER: B4266

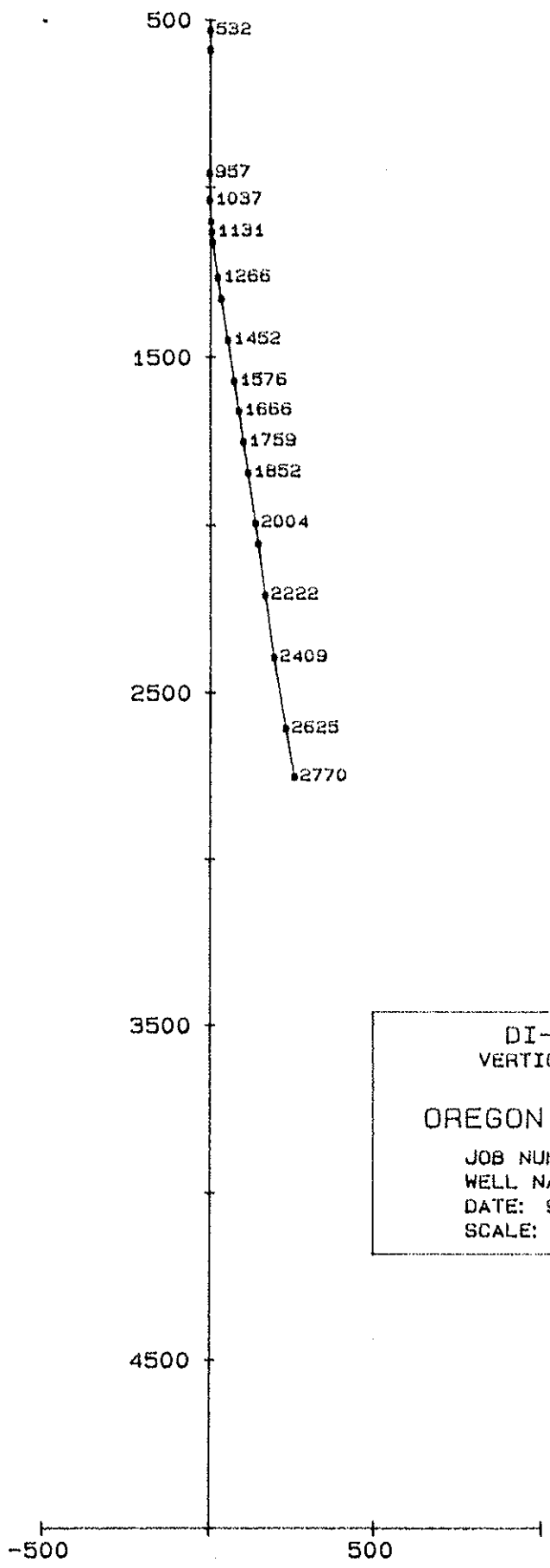
WELL NAME: IW 42D-10

INRUN SURVEY  
BY

BY ANGLE AVERAGE METHOD

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	COURSE DEV.	INCL	BEARING	COORDINATES	D-LEG	STATION	DISPLACEMENT
						LATITUDE	DEPARTURE PER 100	DISP.	DIRECTION
532.00	532.00	0.00	0.00	00-00	N12-00W	0.00 N	0.00 E	0.00	N00-00E
590.00	590.00	-1.13	0.13	00-15	N12-00W	0.12 N	0.03 W	0.43	0.13 AT N12-00W
957.00	957.00	-1.73	1.60	00-15	N16-00W	1.68 N	0.41 W	0.00	1.73 AT N13-51W
1037.00	1036.98	-1.82	1.75	02-15	S00-00E	1.43 N	2.14 W	3.11	2.58 AT N56-11W
1100.00	1099.88	1.71	3.57	04-15	S04-00E	2.13 S	2.02 W	3.19	2.94 AT S43-23W
1131.00	1130.77	4.27	2.57	05-15	S08-00E	4.69 S	1.75 W	3.40	5.00 AT S20-28W
1161.00	1160.61	7.40	3.14	06-45	S08-00E	7.79 S	1.31 W	5.00	7.90 AT S09-34W
1266.00	1264.49	22.69	15.29	10-00	S12-00E	22.85 S	1.34 E	3.14	22.89 AT S03-22E
1328.00	1325.57	33.32	10.63	09-45	S14-00E	33.21 S	3.74 E	0.68	33.42 AT S06-25E
1452.00	1447.82	54.00	20.73	09-30	S16-00E	53.24 S	9.10 E	0.34	54.01 AT S09-42E
1576.00	1570.29	73.23	19.40	08-30	S21-00E	71.64 S	15.26 E	1.02	73.24 AT S12-01E
1666.00	1659.28	86.63	13.50	08-45	S15-00E	84.47 S	19.43 E	1.04	86.68 AT S12-57E
1759.00	1751.19	100.68	14.15	08-45	S20-00E	97.97 S	23.68 E	0.82	100.79 AT S13-35E
1852.00	1843.08	114.89	14.35	09-00	S18-00E	111.53 S	28.35 E	0.43	115.08 AT S14-16E
2004.00	1993.36	137.51	22.79	08-15	S18-00E	133.21 S	35.40 E	0.49	137.83 AT S14-53E
2067.00	2055.75	146.20	8.77	07-45	S19-00E	141.53 S	38.18 E	0.82	146.58 AT S15-06E
2222.00	2209.24	167.59	21.57	08-15	S18-00E	161.98 S	45.02 E	0.33	168.12 AT S15-32E
2409.00	2394.13	195.48	28.04	09-00	S16-00E	188.80 S	53.22 E	0.43	195.16 AT S15-45E
2625.00	2607.16	230.93	35.65	10-00	S18-00E	222.89 S	63.65 E	0.49	231.80 AT S15-56E
2770.00	2749.79	256.85	26.11	10-45	S18-00E	247.73 S	71.72 E	0.52	257.90 AT S16-09E

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 \* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF \*  
 \* 2770.00 FEET EQUALS 257.90 FEET AT S16-09E \*  
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DI-DRIL, INC.  
VERTICAL PROJECTION  
FOR  
OREGON NATURAL GAS  
JOB NUMBER: B4266  
WELL NAME: IW 420-10  
DATE: 9 AUGUST 1988  
SCALE: 500 FT/INCH

