

JOB NUMBER: B4265

WELL NAME: IW 23B-3

DI-DRILL, INC.  
 BAKERSFIELD, CALIFORNIA  
 INRUN SURVEY  
 BY ANGLE AVERAGE METHOD

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 \* OREGON NATURAL GAS \*  
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 WELL NAME: IW 23B-3  
 LOCATION: COLUMBIA COUNTY  
 SURVEY DATE: 14 JULY 1988  
 SURVEY ENGINEER: GEORGE LOVE  
 MAGNETIC DECLINATION: 21.00E

TIE-ON COORDINATES AT: 580 M.D.  
 TAKEN FROM: DATA SURVEY SHEET  
 VERTICAL SECTION CALCULATED IN A  
 PROPOSAL DIRECTION OF: S83-00E

\*\*\*\*\* DEPTH MEASURED IN FEET \*\*\*\*\*  
 \*\*\*\*\* THIS DIRECTIONAL SURVEY REPORT IS \*\*\*\*\*  
 \*\*\*\*\* CORRECT TO THE BEST OF MY KNOWLEDGE \*\*\*\*\*  
 \*\*\*\*\* AND IS SUPPORTED BY ACTUAL FIELD DATA: \*\*\*\*\*

\*\*\*\*\* COMPANY REPRESENTATIVE \*\*\*\*\*  
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MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	COURSE DEV.	INCL	BEARINGS	COORDINATES	D-LEG DEPARTURE PER 100	STATION DISPLACEMENT
						LATITUDE DEPARTURE PER 100		DISP. DIRECTION
580.00	580.00	0.00	0.00	00-00	N69-00W	0.00 N	0.00 E	0.00 AT N00-00E
697.00	697.00	-0.74	0.77	00-45	N69-00W	0.27 N	0.71 W	0.64 AT N69-00W
760.00	759.98	-0.96	1.37	01-45	S82-00E	1.60 N	0.37 W	3.95 AT N13-01W
822.00	821.91	2.41	2.97	03-45	S85-00E	1.27 N	2.58 E	3.23 AT N63-52E
883.00	882.70	7.46	5.05	05-45	S85-00E	0.83 N	7.62 E	3.28 AT N33-48E
914.00	913.51	10.90	3.44	07-00	S82-00E	0.44 N	11.04 E	4.17 AT N87-44E
976.00	974.81	20.20	9.30	10-15	S84-00E	0.69 S	20.27 E	5.26 AT S88-02E
1040.00	1037.50	33.09	12.90	13-00	S85-00E	1.93 S	33.10 E	4.31 AT S88-40E
1151.00	1145.86	57.11	24.02	12-00	S84-00E	4.23 S	57.02 E	0.92 AT S83-49E
1275.00	1266.96	83.74	26.66	12-50	S87-00E	6.33 S	83.60 E	0.85 AT S85-40E
1396.00	1385.13	109.70	26.02	12-00	S87-00E	7.69 S	109.58 E	0.69 AT S85-59E
1515.00	1501.59	134.11	24.49	11-45	S88-00E	8.76 S	134.04 E	0.27 AT S86-16E
1639.00	1622.76	160.36	26.31	12-45	S86-00E	10.13 S	160.32 E	0.88 AT S86-23E
1762.00	1741.85	191.13	30.80	16-15	S84-00E	12.82 S	191.00 E	2.87 AT S86-10E
1883.00	1857.86	225.50	34.37	16-45	S82-00E	17.00 S	225.11 E	0.63 AT S85-41E
2011.00	1980.43	262.39	36.89	16-45	S85-00E	21.18 S	261.76 E	0.68 AT S85-22E
2136.00	2100.13	298.38	36.02	16-45	S85-00E	24.01 S	297.76 E	0.23 AT S85-23E
2262.00	2220.94	334.12	35.79	15-15	S86-00E	26.50 S	333.37 E	0.40 AT S85-27E
2485.00	2396.96	384.10	50.05	15-30	S86-00E	29.99 S	383.31 E	0.41 AT S85-32E
2631.00	2576.73	431.82	47.75	14-15	S84-00E	34.16 S	430.87 E	0.73 AT S85-28E
2743.00	2685.34	459.15	27.33	14-00	S81-00E	37.72 S	457.97 E	0.69 AT S85-17E
2862.00	2800.62	488.69	29.54	14-45	S82-00E	42.09 S	487.19 E	0.66 AT S85-04E

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	COURSE DEV.	INCL	BEARINGS	COORDINATES	D-LEG DEPARTURE PER 100	STATION DISPLACEMENT
						LATITUDE DEPARTURE PER 100		DISP. DIRECTION
2974.00	2908.92	517.19	28.52	14-45	S80-00E	46.55 S	515.35 E	0.45 AT S84-50E

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 \* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF \*  
 \* 2974.00 FEET EQUALS 517.45 FEET AT S84-50E \*  
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