



00283107

10/03/91

GREAT LAND DIRECTIONAL DRILLING, INC.

Client..... BOSWELL ENERGY
 Field..... BLACK HOLLOW
 Well..... #1 BRENT 20-S
 Section at: S,38.00,E
 Engineer... HENSLEY

Computation... RADIUS OF CURVATURE
 Survey Date... 10/03/91
 RKB Elevation.. 5175.00 ft ✓
 Reference..... RM991DI4
 Magnetic Decln.: 11.00 E

RECORD OF SURVEY

S	MEAS	INCLN	VERT-DEPTHS		SECT	DIRECTION	REL-COORDINATES		CLOSURE		DL/ 100
			DEPTH	BKB			SUB-S	DIST	BEARING	FROM-WELLHEAD	
2	505	0.75	505	-4670	3	S 56.00 E	2	S	3	S 56.00 E	0.1
2	599	1.25	599	-4576	5	S 18.00 E	3	S	4	S 49.80 E	0.5
2	693	1.25	693	-4482	7	S 33.00 E	5	S	5	S 42.66 E	0.0
2	788	1.25	788	-4387	9	S 45.00 E	7	S	6	S 41.81 E	0.0
2	882	1.00	882	-4293	11	S 52.00 E	8	S	7	S 42.96 E	0.3
2	977	1.25	977	-4198	12	S 70.00 E	9	S	9	S 45.61 E	0.3
2	1077	1.00	1077	-4098	14	S 68.00 E	9	S	11	S 48.74 E	0.3
2	1166	0.75	1166	-4009	15	S 49.00 E	10	S	12	S 49.58 E	0.3
2	1261	0.25	1261	-3914	16	S 54.00 E	11	S	13	S 49.68 E	0.5
2	1355	0.00	1355	-3820	16	N 0.00 E	11	S	13	S 49.73 E	0.3
2	1450	1.00	1450	-3725	17	S 37.00 W	11	S	12	S 46.89 E	1.1
2	1545	1.25	1545	-3630	17	S 32.00 W	13	S	11	S 40.70 E	0.3
2	1639	1.50	1639	-3536	18	S 22.00 W	15	S	10	S 34.07 E	0.3
2	1734	1.50	1734	-3441	19	S 31.00 W	17	S	9	S 27.67 E	0.0
2	1828	1.75	1828	-3347	20	S 33.00 W	19	S	8	S 21.35 E	0.3
2	1923	1.50	1923	-3252	21	S 29.00 W	22	S	6	S 15.94 E	0.3
2	2018	1.75	2018	-3157	22	S 27.00 W	24	S	5	S 11.59 E	0.3
2	2112	1.75	2112	-3063	23	S 29.00 W	27	S	4	S 7.69 E	0.0
2	2207	1.50	2207	-2968	24	S 25.00 W	29	S	2	S 4.68 E	0.3
2	2301	1.50	2301	-2874	26	S 19.00 W	31	S	1	S 2.66 E	0.0
2	2396	1.00	2396	-2779	27	S 29.00 W	33	S	1	S 1.06 E	0.5
2	2491	1.00	2491	-2684	27	S 19.00 W	35	S	0	S 0.10 W	0.0
2	2585	0.75	2584	-2591	28	S 0.00 E	36	S	0	S 0.47 W	0.3
2	2680	1.00	2679	-2496	29	S 51.00 W	37	S	1	S 1.38 W	0.3
2	2774	1.00	2773	-2402	29	S 80.00 W	38	S	2	S 3.57 W	0.0
2	2869	1.25	2868	-2307	28	S 87.00 W	38	S	4	S 6.30 W	0.3
2	2963	1.50	2962	-2213	26	S 89.00 W	38	S	6	S 9.58 W	0.3
2	3058	1.75	3057	-2118	24	N 83.00 W	38	S	9	S 13.48 W	0.3
2	3247	2.25	3246	-1929	20	S 82.00 W	38	S	16	S 22.35 W	0.3
2	3342	2.00	3341	-1834	19	S 83.00 W	39	S	19	S 26.39 W	0.3
2	3437	2.00	3436	-1739	17	S 73.00 W	39	S	22	S 29.67 W	0.0
2	3531	1.75	3530	-1645	16	S 64.00 W	41	S	25	S 31.98 W	0.3
2	3626	2.00	3625	-1550	16	S 58.00 W	42	S	28	S 33.69 W	0.3

Survey Codes: 2/MULTI SHOT

RECORD OF SURVEY

S	MEAS DEPTH	INCLN ANGLE	VERT-DEPTHS		SECT DIST	DIRECTION BEARING	REL-COORDINATES FROM-WELLHEAD		CLOSURE		DL/ 100
			BKB	SUB-S			DIST	BEARING	DIST	BEARING	
2	3720	2.00	3719	-1456	16	S 57.00 W	44 S	31 W	54 S	35.10 W	0.0
2	3815	0.75	3814	-1361	15	S 71.00 W	45 S	33 W	56 S	36.23 W	1.3
2	3910	1.50	3909	-1266	15	S 53.00 W	46 S	35 W	57 S	37.04 W	0.8
2	4004	1.00	4003	-1172	15	S 39.00 W	47 S	36 W	59 S	37.35 W	0.5
2	4099	1.25	4098	-1077	15	S 47.00 W	49 S	37 W	61 S	37.52 W	0.3
2	4193	1.25	4192	-983	16	S 38.00 W	50 S	39 W	63 S	37.68 W	0.0
2	4288	1.00	4287	-888	16	S 32.00 W	52 S	40 W	65 S	37.61 W	0.3
2	4383	1.00	4382	-793	17	S 32.00 W	53 S	41 W	67 S	37.47 W	0.0
2	4477	1.00	4476	-699	18	S 14.00 W	54 S	41 W	68 S	37.12 W	0.0
2	4572	0.75	4571	-604	19	S 6.00 W	56 S	41 W	70 S	36.58 W	0.3
2	4666	1.25	4665	-510	20	S 18.00 W	57 S	42 W	71 S	36.03 W	0.5
2	4761	0.75	4760	-415	20	S 37.00 W	59 S	43 W	73 S	35.84 W	0.5
2	4852	1.10	4851	-324	21	S 4.30 W	60 S	43 W	74 S	35.54 W	0.4
2	4946	3.20	4945	-230	24	S 25.20 E	64 S	42 W	77 S	33.67 W	2.2
3	5040	5.60	5038	-137	31	S 30.50 E	70 S	39 W	80 S	29.14 W	2.6
3	5135	8.00	5133	-42	42	S 42.00 E	79 S	32 W	86 S	22.29 W	2.5
3	5230	10.30	5227	52	57	S 47.00 E	90 S	22 W	93 S	13.66 W	2.4
3	5323	12.50	5318	143	76	S 47.00 E	102 S	8 W	103 S	4.70 W	2.4
3	5418	13.50	5410	235	97	S 43.10 E	118 S	7 E	118 S	3.26 E	1.1
3	5513	15.40	5502	327	120	S 41.00 E	135 S	23 E	137 S	9.48 E	2.0
3	5606	17.20	5592	417	146	S 38.90 E	155 S	39 E	160 S	14.23 E	1.9
3	5698	18.90	5679	504	175	S 38.60 E	177 S	57 E	186 S	17.87 E	1.8
3	5793	20.60	5768	593	207	S 35.10 E	203 S	76 E	217 S	20.62 E	1.8
3	5886	25.80	5854	679	244	S 36.50 E	233 S	98 E	253 S	22.80 E	5.6
3	5980	26.00	5938	763	285	S 36.10 E	266 S	122 E	293 S	24.68 E	0.2
3	6074	29.40	6022	847	328	S 37.90 E	301 S	148 E	335 S	26.27 E	3.6
3	6167	30.70	6102	927	375	S 37.50 E	338 S	177 E	381 S	27.66 E	1.4
3	6229	32.20	6155	980	407	S 38.60 E	363 S	197 E	413 S	28.47 E	2.5
3	6323	31.90	6235	1060	457	S 37.50 E	402 S	228 E	462 S	29.50 E	0.5
3	6417	34.90	6313	1138	509	S 38.90 E	443 S	260 E	513 S	30.37 E	3.2
3	6510	35.20	6389	1214	562	S 38.90 E	485 S	293 E	566 S	31.17 E	0.3
3	6604	35.90	6466	1291	617	S 36.10 E	528 S	326 E	621 S	31.73 E	1.3
3	6695	39.90	6538	1363	673	S 38.90 E	572 S	360 E	676 S	32.20 E	4.6
3	6789	43.20	6608	1433	735	S 40.00 E	620 S	400 E	738 S	32.81 E	3.6
3	6881	45.70	6674	1499	800	S 39.60 E	670 S	441 E	802 S	33.37 E	2.7
3	6912	45.40	6695	1520	822	S 40.00 E	687 S	455 E	824 S	33.55 E	1.2
3	7006	47.30	6760	1585	890	S 41.00 E	739 S	500 E	892 S	34.07 E	2.1
3	7069	47.10	6803	1628	936	S 40.70 E	774 S	530 E	938 S	34.41 E	0.4
3	7132	45.50	6846	1671	981	S 41.40 E	808 S	560 E	983 S	34.72 E	2.6

RECORD OF SURVEY

MEAS DEPTH	INCLN ANGLE	VERT-DEPTHS BKB SUB-S	SECT DIST	DIRECTION BEARING	REL-COORDINATES FROM-WELLHEAD	CLOSURE DIST BEARING	DL/ 100
3 7227	44.70	6914 1739	1049	S 39.90 E	859 S 604 E	1050 S 35.09 E	1.1
7290	45.40	6958 1783	1093	S 38.90 E	893 S 632 E	1094 S 35.27 E	1.4
3 7353	45.00	7002 1827	1138	S 38.90 E	928 S 660 E	1139 S 35.41 E	0.6
3 7415	45.50	7046 1871	1182	S 38.20 E	963 S 687 E	1183 S 35.53 E	1.0
7479	45.30	7091 1916	1227	S 38.60 E	998 S 716 E	1228 S 35.64 E	0.4
3 7542	44.80	7136 1961	1272	S 37.50 E	1033 S 743 E	1273 S 35.72 E	1.2
7604	45.10	7179 2004	1316	S 36.50 E	1068 S 770 E	1317 S 35.76 E	0.9
7666	46.30	7223 2048	1360	S 34.70 E	1105 S 795 E	1361 S 35.76 E	2.5
3 7728	45.10	7266 2091	1404	S 35.10 E	1141 S 821 E	1405 S 35.73 E	2.0
3 7790	45.40	7310 2135	1448	S 33.60 E	1177 S 846 E	1450 S 35.69 E	1.3
4 7852	43.40	7354 2179	1492	S 32.20 E	1214 S 869 E	1493 S 35.61 E	3.4
3 7915	43.00	7400 2225	1534	S 32.20 E	1250 S 892 E	1536 S 35.51 E	0.6
8060	43.00	7506 2331	1633	S 32.20 E	1334 S 945 E	1635 S 35.31 E	0.0

Survey Codes: 3/MWD J/PROJECTED

7340
7230 - 44.7
140