

SURVEY CERTIFICATION SHEET

Company Meridian Oil Inc. Job # 0410-02433 Date 12-10-91
Lease Howell L Well # 5 State New Mexico
Surveyed from a depth of _____ feet to a depth of _____ feet.
Type of Survey MWD
Directional Supervisor/Surveyor M. KIRKPATRICK

The data for this survey and the calculations for this survey were obtained and performed by me according to the standards and procedures as set forth by Eastman Christensen Company and are true and correct to the best of my knowledge.

M. Kirkpatrick 12-11-91
Directional Supervisor/Surveyor

The data and calculations for this survey have been checked by me and conform to the standards and procedures as set forth by Eastman Christensen Company. This report represents a true and correct Directional Survey of this well based on the original data obtained at the well site:

Checked by:

S. D. Clark 12/11/91

Subscribed and sworn to before me this 10th day of December, 1991.

Deanna A. Bradfield
Notary Public in and for San Juan County, NM

My commission expires August 17, 1992

Original Copy - District Office File
One copy to Houston Office
FORM D-1121

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OIL CON. DIV
DIST. 3

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10-11-10
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SURVEY CALCULATION AND FIELD WORKSHEET

Company MERIDIAN OIL INC.

Rig Contractor & No. FOUR CORNERS - 14

Job No. 0410-02433

Sidetrack No.

Field CHACRA

Well Name & No. HOWELL L NO.5

Survey Section Name Definitive Survey

EC Representative D. SCARBOROUGH/B. SMITH

WELL DATA

Target TVD (FT)	Target Coord. N/S	Slot Coord. N/S	Grid Correction	0.000	Depths Measured From: RKB ☒ MSL ☐ SS ☐
Target Description	Target Coord. E/W	Slot Coord. E/W	Magn. Declination	11.750	Calculation Method MINIMUM CURVATURE
Target Direction (DD)	Build/Walk/DL per: 100ft ☒ 30m ☐ 10m ☐	Vert. Sec. Azim.	Magn. to Map Corr.	11.750	Map North to: OTHER

SURVEY DATA

Date	Survey Tool Type	Survey Depth (FT)	Incl. Angle (DD)	Hole Direction (DD)	Course Length (FT)	TVD (FT)	Vertical Section	Total Coordinate		DL (Per 100 FT)	Build Rate Build (+) Drop (-)	Walk Rate Right (+) Left (-)	Comment
								N(+) / S(-) (FT)	E(+) / W(-) (FT)				
	MMS	323.00	0.00	0.00		323.00	0.00	0.00	0.00				TIE IN POINT
23-AUG-91	MMS	345.00	0.26	239.30	22.00	345.00	0.00	-0.02	-0.04	1.18	1.18		
23-AUG-91	MMS	408.00	0.16	307.99	63.00	408.00	-0.07	-0.04	-0.24	0.40	-0.16		
23-AUG-91	MMS	470.00	0.26	177.76	62.00	470.00	-0.02	-0.13	-0.30	0.62	0.16		
23-AUG-91	MMS	533.00	0.19	247.68	63.00	533.00	0.10	-0.31	-0.39	0.42	-0.11		
23-AUG-91	MMS	595.00	0.33	195.70	62.00	595.00	0.23	-0.52	-0.53	0.42	0.22		
23-AUG-91	MMS	658.00	0.15	125.56	63.00	658.00	0.43	-0.75	-0.51	0.50	-0.28		
23-AUG-91	MMS	720.00	0.20	113.81	62.00	720.00	0.59	-0.84	-0.35	0.10	0.08		
23-AUG-91	MMS	783.00	0.41	128.44	63.00	783.00	0.88	-1.02	-0.07	0.35	0.33		
23-AUG-91	MMS	845.00	0.41	140.45	62.00	845.00	1.30	-1.33	0.24	0.14	0.00		
23-AUG-91	MMS	908.00	0.25	90.35	63.00	907.99	1.58	-1.51	0.52	0.50	-0.25		
23-AUG-91	MMS	970.00	0.38	87.20	62.00	969.99	1.73	-1.50	0.86	0.21	0.21		
23-AUG-91	MMS	1032.00	0.37	89.67	62.00	1031.99	1.90	-1.49	1.27	0.03	-0.02		
23-AUG-91	MMS	1095.00	0.55	86.29	63.00	1094.99	2.11	-1.46	1.78	0.29	0.28		
23-AUG-91	MMS	1157.00	0.48	69.82	62.00	1156.99	2.26	-1.36	2.32	0.26	-0.11		
23-AUG-91	MMS	1220.00	0.43	96.83	63.00	1219.98	2.42	-1.29	2.80	0.35	-0.08		
23-AUG-91	MMS	1282.00	0.85	83.83	62.00	1281.98	2.72	-1.27	3.49	0.71	0.68		
23-AUG-91	MMS	1345.00	0.60	81.02	63.00	1344.98	2.98	-1.17	4.28	0.40	-0.40		
23-AUG-91	MMS	1407.00	0.62	76.28	62.00	1406.97	3.16	-1.04	4.92	0.09	0.03		
23-AUG-91	MMS	1470.00	0.62	72.36	63.00	1469.97	3.30	-0.86	5.58	0.07	0.00		
23-AUG-91	MMS	1532.00	0.80	68.49	62.00	1531.96	3.39	-0.60	6.30	0.30	0.29		
23-AUG-91	MMS	1595.00	0.58	62.18	63.00	1594.96	3.43	-0.28	6.99	0.37	-0.35		
23-AUG-91	MMS	1657.00	0.63	80.34	62.00	1656.96	3.53	-0.08	7.61	0.32	0.08		
23-AUG-91	MMS	1720.00	0.57	81.31	63.00	1719.95	3.73	0.02	8.26	0.10	-0.10		

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OIL CON. DIV
DIST. 3



Company MERIDIAN OIL INC.

SURVEY CALCULATION AND FIELD WORKSHEET

Job No. 0410-02433 Sidetrack No. _____ Page 2 of 6

Field CHACRA

Rig Contractor & No. FOUR CORNERS - 14

EC Representative D. SCARBOROUGH/ B. SMITH

Well Name & No. HOWELL L NO.5

Survey Section Name Definitive Survey

WELL DATA

Target TVD _____ (FT)	Target Coord. N/S _____	Slot Coord. N/S _____	Grid Correction _____	0.000	Depths Measured From: RKB ☒ MSL ☐ SS ☐
Target Description _____	Target Coord. E/W _____	Slot Coord. E/W _____	Magn. Declination _____	11.750	Calculation Method MINIMUM CURVATURE
Target Direction _____ (DD)	Build/Walk/DL per: 100ft ☒ 30m ☐ 10m ☐	Vert. Sec. Azim. _____	Magn. to Map Corr. _____	11.750	Map North to: OTHER

SURVEY DATA

Date	Survey Tool Type	Survey Depth (FT)	Incl. Angle (DD)	Hole Direction (DD)	Course Length (FT)	TVD (FT)	Vertical Section	Total Coordinate		DL (Per 100 FT)	Build Rate Build (+) Drop (-)	Walk Rate Right (+) Left (-)	Comment
								N(+) / S(-) (FT)	E(+) / W(-) (FT)				
23-AUG-91	MMS	1787.00	0.36	81.90	67.00	1786.95	3.90	0.10	8.80	0.31	-0.31		
23-AUG-91	MMS	1845.00	0.56	81.26	58.00	1844.95	4.05	0.17	9.26	0.34	0.34		
23-AUG-91	MMS	1907.00	0.39	92.71	62.00	1906.94	4.25	0.21	9.77	0.31	-0.27		
23-AUG-91	MMS	1970.00	0.38	91.23	63.00	1969.94	4.45	0.19	10.19	0.02	-0.02		
23-AUG-91	MMS	2032.00	0.46	118.01	62.00	2031.94	4.75	0.07	10.61	0.34	0.13		
23-AUG-91	MMS	2095.00	0.31	93.37	63.00	2094.94	5.05	-0.06	11.01	0.35	-0.24		
23-AUG-91	MMS	2157.00	0.59	99.40	62.00	2156.94	5.32	-0.12	11.49	0.46	0.45		
23-AUG-91	MMS	2220.00	0.36	116.00	63.00	2219.94	5.67	-0.26	11.99	0.42	-0.36		
23-AUG-91	MMS	2282.00	0.51	110.73	62.00	2281.93	6.03	-0.44	12.42	0.25	0.24		
23-AUG-91	MMS	2345.00	0.57	92.32	63.00	2344.93	6.39	-0.55	13.00	0.29	0.10		
23-AUG-91	MMS	2407.00	0.39	81.46	62.00	2406.93	6.61	-0.53	13.51	0.32	-0.29		
23-AUG-91	MMS	2532.00	0.13	104.86	125.00	2531.93	6.84	-0.51	14.07	0.22	-0.21		
23-AUG-91	MMS	2594.00	0.09	341.31	62.00	2593.93	6.84	-0.48	14.12	0.31	-0.06		
23-AUG-91	MMS	2657.00	0.20	319.75	63.00	2656.93	6.68	-0.35	14.04	0.19	0.17		
23-AUG-91	MMS	2719.00	0.09	234.03	62.00	2718.93	6.58	-0.29	13.93	0.34	-0.18		
23-AUG-91	MMS	2782.00	0.35	192.29	63.00	2781.93	6.74	-0.51	13.85	0.46	0.41		
23-AUG-91	MMS	2844.00	0.39	181.34	62.00	2843.93	7.07	-0.91	13.80	0.13	0.06		
23-AUG-91	MMS	2907.00	0.29	213.99	63.00	2906.92	7.34	-1.25	13.71	0.34	-0.16		
23-AUG-91	MMS	2969.00	0.46	178.91	62.00	2968.92	7.64	-1.63	13.62	0.45	0.27		
23-AUG-91	MMS	3070.00	0.17	170.62	101.00	3069.92	8.15	-2.18	13.66	0.29	-0.29		
24-AUG-91	MWD	3108.00	2.30	154.50	38.00	3107.91	8.96	-2.93	13.99	5.62	5.60		
24-AUG-91	MWD	3140.00	5.30	143.20	32.00	3139.84	11.06	-4.69	15.16	9.62	9.37	-35.31	
24-AUG-91	MWD	3170.00	8.80	136.90	30.00	3169.61	14.63	-7.48	17.55	11.93	11.67	-21.00	
24-AUG-91	MWD	3202.00	12.70	135.50	32.00	3201.04	20.34	-11.78	21.69	12.21	12.19	-4.37	



Company MERIDIAN OIL INC.

SURVEY CALCULATION AND FIELD WORKSHEET

Page 3 of 6

Job No. 0410-02433

Sidetrack No. CHACRA

Rig Contractor & No. FOUR CORNERS - 14

Survey Section Name Definitive Survey

EC Representative D. SCARBOROUGH/ B. SMITH

Well Name & No. HOWELL L NO.5

WELL DATA

Target TVD (FT)	Target Coord. N/S	Slot Coord. N/S	Grid Correction	0.00	Depths Measured From: RKB ☒ MSL ☐ SS ☐
Target Description	Target Coord. E/W	Slot Coord. E/W	Magn. Declination	11.750	Calculation Method MINIMUM CURVATURE
Target Direction (DD)	Build/Walk/DL per: 100ft ☒ 30m ☐ 10m ☐	Vert. Sec. Azim.	Magn. to Map Corr.	11.750	Map North to: OTHER

SURVEY DATA

Date	Survey Tool Type	Survey Depth (FT)	Incl. Angle (DD)	Hole Direction (DD)	Course Length (FT)	TVD (FT)	Vertical Section	Total Coordinate		DL (Per 100 FT)	Build Rate Build (+) Drop (-)	Walk Rate Right (+) Left (-)	Comment
								N(+) / S(-) (FT)	E(+) / W(-) (FT)				
24-AUG-91	MWD	3233.00	16.80	136.90	31.00	3231.01	27.90	-17.48	27.14	13.27	13.22	4.52	
24-AUG-91	MWD	3265.00	21.10	140.40	32.00	3261.27	37.97	-25.30	33.98	13.89	13.44	10.94	
24-AUG-91	MWD	3296.00	25.20	144.60	31.00	3289.77	49.95	-34.98	41.36	14.25	13.22	13.55	
25-AUG-91	MWD	3327.00	29.10	148.20	31.00	3317.35	64.00	-46.77	49.16	13.64	12.58	11.61	
25-AUG-91	MWD	3359.00	33.60	150.30	32.00	3344.67	80.60	-61.09	57.65	14.47	14.06	6.56	
25-AUG-91	MWD	3391.00	37.90	151.70	32.00	3370.64	99.28	-77.44	66.70	13.68	13.44	4.37	
25-AUG-91	MWD	3422.00	42.60	151.00	31.00	3394.29	119.30	-95.01	76.31	15.23	15.16	-2.26	
25-AUG-91	MWD	3454.00	47.30	151.00	32.00	3416.93	141.89	-114.78	87.27	14.69	14.69	0.00	
25-AUG-91	MWD	3485.00	52.10	150.30	31.00	3436.98	165.50	-135.38	98.86	15.58	15.48	-2.26	
26-AUG-91	MWD	3515.00	56.40	149.60	30.00	3454.50	189.81	-156.44	111.05	14.46	14.33	-2.33	
26-AUG-91	MWD	3546.00	59.60	149.60	31.00	3470.92	216.05	-179.12	124.35	10.32	10.32	0.00	
26-AUG-91	MWD	3577.00	60.00	150.30	31.00	3486.52	242.80	-202.31	137.77	2.34	1.29	2.26	
26-AUG-91	MWD	3608.00	59.80	151.70	31.00	3502.07	269.60	-225.76	150.77	3.96	-0.64	4.52	
27-AUG-91	MWD	3631.00	59.60	154.50	23.00	3513.67	289.46	-243.47	159.75	10.55	-0.87	12.17	
27-AUG-91	MWD	3662.00	59.80	154.50	31.00	3529.31	316.22	-267.63	171.28	0.64	0.64	0.00	
27-AUG-91	MWD	3694.00	61.50	153.80	32.00	3545.00	344.10	-292.73	183.44	5.64	5.31	-2.19	
27-AUG-91	MWD	3725.00	65.80	153.10	31.00	3558.75	371.87	-317.57	195.86	14.02	13.87	-2.26	
27-AUG-91	MWD	3795.00	75.50	153.10	70.00	3581.92	437.84	-376.40	225.70	13.86	13.86	0.00	
31-AUG-91	MWD	3863.00	76.00	155.75	68.00	3598.66	503.72	-435.84	254.15	3.85	0.74	3.90	
31-AUG-91	MWD	3895.00	75.75	159.25	32.00	3606.47	534.65	-464.51	266.02	10.64	-0.78	10.94	
31-AUG-91	MWD	3926.00	75.63	159.25	31.00	3614.13	564.51	-492.60	276.66	0.39	-0.39	0.00	
31-AUG-91	MWD	3956.00	75.75	159.75	30.00	3621.55	593.39	-519.83	286.84	1.66	0.40	1.67	
31-AUG-91	MWD	3988.00	77.50	159.75	32.00	3628.95	624.31	-549.03	297.62	5.47	5.47	0.00	
31-AUG-91	MWD	4019.00	79.63	159.75	31.00	3635.10	654.48	-577.54	308.14	6.87	6.87	0.00	



SURVEY CALCULATION AND FIELD WORKSHEET

Company MERIDIAN OIL INC.

Rig Contractor & No. FOUR CORNERS - 14

Well Name & No. HOWELL L NO.5

Survey Section Name Definitive Survey

EC Representative D. SCARBOROUGH/ B. SMITH

Job No. 0410-02433

Sidetrack No. Field CHACRA

Page 4 of 6

WELL DATA

Target TVD (FT) Target Coord. N/S Slot Coord. N/S Grid Correction 0.000 Depths Measured From: ☒ RKB ☐ MSL ☐ SS ☐

Target Description Target Coord. E/W Slot Coord. E/W Magn. Declination 11.750 Calculation Method MINIMUM CURVATURE

Target Direction (DD) Build/Walk/DL per: 100ft ☐ 30m ☐ 10m ☐ Vert. Sec. Azim. 153.00 Magn. to Map Corr. 11.750 Map North to: OTHER

SURVEY DATA

Date	Survey Tool Type	Survey Depth (FT)	Incl. Angle (DD)	Hole Direction (DD)	Course Length (FT)	TVD (FT)	Vertical Section	Total Coordinate		DL (Per 100 FT)	Build Rate Build (+) Drop (-)	Walk Rate Right (+) Left (-)	Comment
								N(+) / S(-) (FT)	E(+) / W(-) (FT)				
31-AUG-91	MWD	4051.00	82.00	159.25	32.00	3640.20	685.86	-607.12	319.20	7.56	7.41	-1.56	
31-AUG-91	MWD	4082.00	84.13	159.25	31.00	3643.95	716.45	-635.90	330.10	6.87	6.87	0.00	
31-AUG-91	MWD	4114.00	86.75	155.75	32.00	3646.49	748.25	-665.36	342.31	13.63	8.19	-10.94	
31-AUG-91	MWD	4145.00	88.25	157.75	31.00	3647.84	779.15	-693.82	354.53	8.06	4.84	6.45	
31-AUG-91	MWD	4176.00	89.00	156.75	31.00	3648.59	810.05	-722.40	366.52	4.03	2.42	-3.22	
01-SEP-91	MWD	4208.00	88.75	158.75	32.00	3649.22	841.94	-752.00	378.63	6.30	-0.78	6.25	
01-SEP-91	MWD	4239.00	89.00	158.75	31.00	3649.82	872.77	-780.89	389.86	0.81	0.81	0.00	
01-SEP-91	MWD	4268.00	89.25	158.75	29.00	3650.27	901.62	-807.92	400.37	0.86	0.86	0.00	
01-SEP-91	MWD	4331.00	89.75	158.75	63.00	3650.82	964.30	-866.63	423.20	0.79	0.79	0.00	
01-SEP-91	MWD	4362.00	89.63	158.75	31.00	3650.99	995.15	-895.52	434.44	0.39	-0.39	0.00	
01-SEP-91	MWD	4394.00	89.63	158.25	32.00	3651.19	1027.00	-925.30	446.17	1.56	0.00	-1.56	
01-SEP-91	MWD	4426.00	89.50	158.25	32.00	3651.44	1058.86	-955.02	458.02	0.41	-0.41	0.00	
01-SEP-91	MWD	4458.00	89.00	157.25	32.00	3651.85	1090.75	-984.63	470.14	3.49	-1.56	-3.12	
01-SEP-91	MWD	4489.00	89.25	156.75	31.00	3652.33	1121.67	-1013.16	482.25	1.80	0.81	-1.61	
01-SEP-91	MWD	4521.00	89.75	155.75	32.00	3652.61	1153.62	-1042.45	495.14	3.49	1.56	-3.12	
01-SEP-91	MWD	4553.00	90.13	155.75	32.00	3652.64	1185.58	-1071.63	508.28	1.19	1.19	0.00	
03-SEP-91	MWD	4637.00	90.13	155.25	84.00	3652.45	1269.50	-1148.06	543.12	0.60	0.00	-0.60	
03-SEP-91	MWD	4731.00	90.38	155.25	94.00	3652.03	1363.43	-1233.43	582.47	0.26	0.26	0.00	
03-SEP-91	MWD	4794.00	90.38	154.75	63.00	3651.61	1426.39	-1290.52	609.09	0.79	0.00	-0.79	
03-SEP-91	MWD	4856.00	90.00	154.25	62.00	3651.41	1488.37	-1346.48	635.78	1.01	-0.61	-0.81	
03-SEP-91	MWD	4919.00	90.88	153.75	63.00	3650.92	1551.35	-1403.10	663.40	1.61	1.40	-0.79	
03-SEP-91	MWD	4982.00	90.50	153.25	63.00	3650.17	1614.35	-1459.48	691.51	1.00	-0.60	-0.79	
03-SEP-91	MWD	5045.00	91.25	153.25	63.00	3649.20	1677.34	-1515.73	719.86	1.19	1.19	0.00	
03-SEP-91	MWD	5121.00	91.13	152.75	76.00	3647.62	1753.32	-1583.43	754.36	0.68	-0.16	-0.66	



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Rig Contractor & No. FOUR CORNERS - 14

Well Name & No. HOWELL L NO.5

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EC Representative D. SCARBOROUGH/B. SMITH

Field CHACRA

Job No. 0410-02433

Sidetrack No.

Page 5 of 6

WELL DATA

Target TVD (FT) _____ Slot Coord. N/S _____ 0.00 Grid Correction 0.000 Depths Measured From: RKB ☒ MSL ☐ SS ☐
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Target Direction (DD) _____ Build/Walk/DL per: 100ft ☒ 30m ☐ 10m ☐ 153.00 Magn. to Map Corr. 11.750 Map North to: OTHER

SURVEY DATA

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								N(+) / S(-) (FT)	E(+) / W(-) (FT)				
03-SEP-91	MWD	5155.00	91.63	152.25	34.00	3646.81	1787.31	-1613.58	770.05	2.08	1.47	-1.47	
03-SEP-91	MWD	5187.00	91.25	152.25	32.00	3646.00	1819.30	-1641.89	784.95	1.19	-1.19	0.00	
03-SEP-91	MWD	5218.00	89.62	153.25	31.00	3645.77	1850.29	-1669.45	799.14	6.17	-5.26	3.22	
04-SEP-91	MWD	5250.00	89.13	153.25	32.00	3646.12	1882.29	-1698.02	813.54	1.53	-1.53	0.00	
04-SEP-91	MWD	5281.00	89.00	153.25	31.00	3646.62	1913.29	-1725.70	827.49	0.42	-0.42	0.00	
04-SEP-91	MWD	5313.00	88.50	152.75	32.00	3647.32	1945.28	-1754.21	842.02	2.21	-1.56	-1.56	
04-SEP-91	MWD	5345.00	88.50	152.75	32.00	3648.16	1977.27	-1782.65	856.66	0.00	0.00	0.00	
04-SEP-91	MWD	5376.00	88.25	152.75	31.00	3649.04	2008.26	-1810.20	870.85	0.81	-0.81	0.00	
04-SEP-91	MWD	5407.00	88.25	152.25	31.00	3649.98	2039.24	-1837.68	885.16	1.61	0.00	-1.61	
04-SEP-91	MWD	5438.00	88.00	152.25	31.00	3651.00	2070.22	-1865.10	899.59	0.81	-0.81	0.00	
04-SEP-91	MWD	5469.00	87.87	151.75	31.00	3652.11	2101.20	-1892.45	914.13	1.66	-0.42	-1.61	
04-SEP-91	MWD	5500.00	87.62	151.75	31.00	3653.33	2132.16	-1919.74	928.79	0.81	-0.81	0.00	
04-SEP-91	MWD	5530.00	87.87	151.75	30.00	3654.52	2162.13	-1946.15	942.98	0.83	0.83	0.00	
04-SEP-91	MWD	5562.00	89.25	152.75	32.00	3655.32	2194.12	-1974.46	957.88	5.32	4.31	3.12	
04-SEP-91	MWD	5593.00	89.75	152.75	31.00	3655.59	2225.12	-2002.01	972.07	1.61	1.61	0.00	
04-SEP-91	MWD	5624.00	89.75	152.75	31.00	3655.72	2256.12	-2029.57	986.26	0.00	0.00	0.00	
04-SEP-91	MWD	5654.00	89.37	152.75	30.00	3655.96	2286.12	-2056.24	1000.00	1.27	-1.27	0.00	
04-SEP-91	MWD	5686.00	89.00	152.75	32.00	3656.41	2318.11	-2084.69	1014.65	1.16	-1.16	0.00	
04-SEP-91	MWD	5717.00	89.25	152.75	31.00	3656.88	2349.11	-2112.24	1028.84	0.81	0.81	0.00	
05-SEP-91	MWD	5749.00	90.62	152.75	32.00	3656.92	2381.11	-2140.69	1043.49	4.28	4.28	0.00	
05-SEP-91	MWD	5779.00	91.38	152.75	30.00	3656.40	2411.10	-2167.36	1057.23	2.53	2.53	0.00	
05-SEP-91	MWD	5840.00	90.50	152.75	61.00	3655.40	2472.09	-2221.58	1085.15	1.44	-1.44	0.00	
05-SEP-91	MWD	5903.00	90.62	152.75	63.00	3654.78	2535.09	-2277.59	1114.00	0.19	0.19	0.00	
05-SEP-91	MWD	5967.00	90.50	152.75	64.00	3654.15	2599.09	-2334.48	1143.30	0.19	-0.19	0.00	

Company **MERIDIAN OIL INC.**

Company **MERIDIAN OIL INC.**

Well Name & No. **HOWELL L NO.5**

Big Contractor & No. FOUR CORNERS - 14

Well Name & No. HOWELL L NO.5

Survey Section Name Definitive Survey

EC Representative **D. SCARBOROUGH/ B. SMITH**

WELL DATA

Depths Measured From:	0.000	Grid Correction	0.00	Slut Coord	N/S	Transit Coord	N/S
Depths Measured From:	0.000	Grid Correction	0.00	Slut Coord	N/S	Transit Coord	N/S
MSL	☐	MSL	☐	MSL	☐	MSL	☐
SS	☐	SS	☐	SS	☐	SS	☐

Target ID	Target Coord. E/W	Target Coord. E/W	Magn.	Declination	Calculation Method	MINIMUM CURVATURE
Target ID	Target Coord. E/W	Target Coord. E/W	Magn.	Declination	Calculation Method	11.750

Target Description	Target Location	Build/Walk/D per.	Vert.	Sec.	Azim.	Magn. to Map Corr.	Map North to:
Target Direction	m	100m ☒ 30m ☐				153.00	11.750
							OTHER

SURVEY DATA

[illegible]

SURVEY CERTIFICATION SHEET

Company _____ Job # _____ Date _____

Lease _____ Well # _____ State _____

Surveyed from a depth of _____ feet to a depth of _____ feet.

Type of Survey _____

Directional Supervisor/Surveyor _____

The data for this survey and the calculations for this survey were obtained and performed by me according to the standards and procedures as set forth by Eastman Christensen Company and are true and correct to the best of my knowledge.

Directional Supervisor/Surveyor

The data and calculations for this survey have been checked by me and conform to the standards and procedures as set forth by Eastman Christensen Company. This report represents a true and correct Directional Survey of this well based on the original data obtained at the well site:

Checked by:

Original Copy - District Office File
One copy to Houston Office
FORM D-1121