

[Handwritten signature]

Deviation Report

Meridian Oil Inc.
PO Box 4289, Farmington, NM 87499

Piedra Lumbre #1
2005'FSL, 1775'FEL *7*
Section 22, T-19-N, R-2-W
Sandoval County, New Mexico
Undesignated Mancos

I, the undersigned, certify that I, acting in my capacity as Petroleum Engineer of Meridian Oil Inc., am authorized by said Company to make this report; and that the facts stated herein are true to the best of my knowledge and belief.

[Handwritten signature]

John D. Clayton

Subscribed and sworn to before me this 18th day of May, 1992.

[Handwritten signature]

Notary Public in and for San Juan County, New Mexico

My commission expires August 17, 1992.

RECEIVED
MAY 19 1992
OIL CON. DIV.
DIST. 3

100-443887-100
 100-443887-100
 100-443887-100
 100-443887-100
 100-443887-100

Geoservices-Directional

Deviation report

Well :

Field :

Company :

PIEDRA LUMBRE

RIO PUEBRO

MERIDIAN OIL CO.

Coordinates

Well head :

X =

0.0

Y =

0.0

Z =

0.0

Target :

X =

0.0

Y =

0.0

Z =

0.0

Impact :

X =

0.0

Y =

0.0

Z =

0.0

Horizontal displacement

0.00 ft

Total vertical depth

0.00 ft

Magnetic declination

11.00 deg

Kick off point

0.00 ft

Convergence

0.00 deg

Horizontal projection computed in azimuth North

313.00 deg.

(NW 47.00)

RECEIVED

MAY 19 1992

OIL CON. DIV

DIST. 3

Surv no	Measured depth feet	Drift angle degree	Azinut magnt. degree	Azinut geogr. degree	Vertical depth feet	Horizntl prjction feet	Horizntl displcmt feet	Average Az(geo) degree	Relative Coordinates East/West feet	Coordinates Nor/South feet	Dog leg dleg	leg dlgh	grBu
Computation method : Radius of curvature													
1	0.0	0.00	40.00	51.00	0.0	0.0	0.0	90.00	0.0 E	0.0 N	0.0	0.0	%100.0
2	300.0	1.18	27.00	38.00	300.0	-0.1	3.1	44.50	2.2 E	2.2 N	0.4	-0.0	0.4
3	400.0	0.82	21.00	32.00	400.0	0.2	4.8	41.07	3.2 E	3.6 N	0.4	-0.1	-0.4
4	500.0	0.98	34.00	45.00	500.0	0.3	6.4	40.44	4.1 E	4.9 N	0.3	0.2	0.2
5	600.0	0.87	32.00	43.00	599.9	0.3	8.0	41.16	5.3 E	6.0 N	0.1	-0.0	-0.1
6	700.0	0.77	59.00	70.00	699.9	-0.1	9.4	43.45	6.4 E	6.8 N	0.4	0.4	-0.1
7	800.0	0.68	68.00	79.00	799.9	-0.7	10.5	47.02	7.7 E	7.1 N	0.1	0.1	-0.1
8	900.0	0.75	106.00	117.00	899.9	-1.8	11.3	51.85	8.9 E	7.0 N	0.5	0.5	0.1
9	1000.0	0.87	131.00	142.00	999.9	-3.2	11.7	58.60	9.9 E	6.1 N	0.4	0.4	0.1
10	1100.0	1.10	127.00	138.00	1099.9	-4.9	12.0	66.72	11.1 E	4.8 N	0.2	-0.1	0.2
11	1200.0	1.25	131.00	142.00	1199.9	-6.9	12.8	75.56	12.4 E	3.2 N	0.2	0.1	0.1
12	1300.0	2.02	130.00	141.00	1299.8	-9.7	14.2	86.15	14.1 E	1.0 N	0.8	-0.0	0.8
13	1400.0	2.00	121.00	132.00	1399.8	-13.2	16.6	95.50	16.6 E	1.6 S	0.3	-0.3	-0.0
14	1500.0	2.18	129.00	140.00	1499.7	-16.9	19.6	102.45	19.1 E	4.2 S	0.3	0.3	0.2
15	1600.0	2.50	129.00	140.00	1599.6	-20.9	22.9	108.68	21.7 E	7.3 S	0.3	0.0	0.3
16	1700.0	2.42	129.00	140.00	1699.5	-25.2	26.7	113.48	24.5 E	10.6 S	0.1	0.0	-0.1
17	1800.0	2.50	122.00	133.00	1799.4	-29.5	30.7	116.61	27.4 E	13.7 S	0.3	-0.3	0.1
18	1900.0	2.25	124.00	135.00	1899.3	-33.6	34.7	118.66	30.4 E	16.6 S	0.3	0.1	-0.3
19	2000.0	2.12	122.00	133.00	1999.3	-37.4	38.3	120.16	33.2 E	19.3 S	0.2	-0.1	-0.1
20	2100.0	2.08	117.00	128.00	2099.2	-41.1	42.0	121.06	35.9 E	21.6 S	0.2	-0.2	-0.0
21	2200.0	2.12	112.00	123.00	2199.1	-44.7	45.6	121.42	38.9 E	23.8 S	0.2	-0.2	0.0
22	2300.0	2.12	117.00	128.00	2299.1	-48.4	49.3	121.72	41.9 E	25.9 S	0.2	0.2	0.0
23	2400.0	2.20	116.00	127.00	2399.0	-52.1	53.0	122.13	44.9 E	28.2 S	0.1	-0.0	0.1
24	2500.0	2.25	117.00	128.00	2498.9	-56.0	56.9	122.50	48.0 E	30.6 S	0.1	0.0	0.0
25	2540.5	2.25	119.00	130.00	2539.4	-57.6	58.5	122.68	49.2 E	31.6 S	0.2	0.2	0.0
26	2580.0	2.13	125.00	136.00	2578.9	-59.1	60.0	122.93	50.3 E	32.6 S	0.6	0.6	-0.3
27	2613.0	0.50	289.50	300.50	2611.9	-59.2	59.9	123.43	50.0 E	33.0 S	7.9	11.4	-4.9
28	2644.0	6.25	299.50	310.50	2642.8	-57.4	58.1	123.37	48.5 E	32.0 S	18.5	1.9	18.5
29	2676.0	11.88	305.00	316.00	2674.4	-52.3	53.2	122.43	44.9 E	28.5 S	17.8	2.7	17.6
30	2708.0	16.88	313.00	324.00	2705.4	-44.4	45.7	119.43	39.8 E	22.4 S	16.8	6.2	15.6
31	2739.0	22.00	314.00	325.00	2734.6	-34.3	36.6	112.56	33.8 E	14.0 S	16.5	1.1	16.5
32	2770.0	27.63	316.00	327.00	2762.7	-21.7	26.7	97.00	26.5 E	3.3 S	18.4	2.7	18.2
33	2801.0	33.25	318.00	329.00	2789.4	-6.5	20.8	61.05	18.2 E	10.1 N	18.4	3.3	18.1
34	2833.0	39.38	317.50	328.50	2815.2	11.7	27.6	17.66	8.4 E	26.3 N	19.2	-0.9	19.2
35	2864.0	45.38	317.50	328.50	2838.1	31.9	44.1	356.68	2.6 W	44.1 N	19.4	0.0	19.4

Geoservices-Directional

Deviation report

Well :
 Field :
 Company :

PIEDRA LUMBRE
 RIO PUERCO
 MERIDIAN OIL CO.

Surv no	Measured depth feet	Drift angle degree	Azimut magnt. degree	Azimut geogr. degree	Vertical depth feet	Horizntl prjction feet	Horizntl displcmt feet	Average Az(geo) degree	Relative East/West feet	Coordinates. Nor/South feet	Dog leg dleg dlGH grBu /100ft		
Computation method : Radius of curvature													
36	2895.0	51.25	316.00	327.00	2858.7	54.2	65.4	346.82	14.9 W	63.6 N	19.3	-3.6	18.9
37	2912.0	54.25	314.50	325.50	2869.0	67.4	78.2	343.33	22.4 W	74.9 N	18.9	-7.0	17.6
38	2975.0	66.25	315.00	326.00	2900.2	120.7	131.3	336.11	53.1 W	120.0 N	19.0	0.7	19.0
39	3023.0	74.88	316.50	327.50	2916.1	164.6	176.0	333.72	77.9 W	157.8 N	18.2	2.9	18.0
40	3054.0	79.75	315.00	326.00	2922.9	194.0	206.1	332.70	94.5 W	183.1 N	16.4	-4.7	15.7
41	3086.0	81.25	313.50	324.50	2928.2	224.8	237.4	331.71	112.5 W	209.0 N	6.6	-4.6	4.7
42	3117.0	82.75	312.50	323.50	2932.5	254.9	267.8	330.83	130.5 W	233.9 N	5.8	-3.2	4.8
43	3148.0	84.75	311.50	322.50	2935.9	285.3	298.4	330.02	149.1 W	258.5 N	7.2	-3.2	6.5
44	3179.0	85.50	310.50	321.50	2938.6	315.8	329.0	329.27	168.1 W	282.8 N	4.0	-3.2	2.4
45	3209.0	84.88	310.00	321.00	2941.1	345.4	358.6	328.61	186.8 W	306.1 N	2.6	-1.7	-2.1
46	3273.0	88.75	310.00	321.00	2944.6	408.6	422.1	327.46	227.0 W	355.8 N	6.0	0.0	6.0
47	3305.0	90.75	310.00	321.00	2944.8	440.3	453.9	327.00	247.2 W	380.7 N	6.2	0.0	6.2
48	3336.0	90.75	309.50	320.50	2944.4	471.0	484.7	326.60	266.8 W	404.7 N	1.6	-1.6	0.0
49	3367.0	90.63	309.50	320.50	2944.0	501.8	515.5	326.24	286.5 W	428.6 N	0.4	0.0	-0.4
50	3397.0	90.63	309.00	320.00	2943.7	531.5	545.4	325.91	305.7 W	451.6 N	1.6	-1.7	0.0
51	3427.0	90.38	309.00	320.00	2943.4	561.3	575.2	325.60	325.0 W	474.6 N	0.8	0.0	-0.8
52	3458.0	89.00	308.50	319.50	2943.6	592.1	606.1	325.30	345.0 W	498.3 N	4.7	-1.6	-4.5
53	3488.0	88.00	309.00	319.00	2944.3	621.9	635.9	325.02	364.6 W	521.0 N	3.7	-1.7	-3.3
54	3519.0	88.88	307.50	318.50	2945.2	652.7	666.7	324.73	385.0 W	544.3 N	3.3	-1.6	2.8
55	3549.0	88.75	307.50	318.50	2945.8	682.6	696.5	324.46	404.9 W	566.8 N	0.4	0.0	-0.4
56	3579.0	88.63	307.50	318.50	2946.5	712.4	726.4	324.21	424.7 W	589.2 N	0.4	0.0	-0.4
57	3609.0	88.00	307.00	318.00	2947.4	742.3	756.2	323.98	444.7 W	611.6 N	2.7	-1.7	-2.1
58	3640.0	88.00	306.50	317.50	2948.5	773.2	787.0	323.73	465.5 W	634.5 N	1.6	-1.6	0.0
59	3670.0	87.88	306.50	317.50	2949.5	803.1	816.8	323.51	485.8 W	656.6 N	0.4	0.0	-0.4
60	3701.0	88.00	306.50	317.50	2950.7	833.9	847.6	323.29	506.7 W	679.5 N	0.4	0.0	0.4
61	3732.0	86.25	306.50	317.50	2952.2	864.8	878.4	323.08	527.6 W	702.3 N	5.6	0.0	-5.6
62	3762.0	86.25	306.00	317.00	2954.2	894.7	908.2	322.89	548.0 W	724.3 N	1.6	-1.7	0.0
63	3792.0	86.25	306.00	317.00	2956.1	924.5	938.0	322.70	568.4 W	746.2 N	0.0	0.0	0.0
64	3823.0	86.50	306.50	317.50	2958.1	955.4	968.8	322.53	589.4 W	768.9 N	1.8	1.6	0.8
65	3854.0	87.00	306.50	317.50	2959.8	986.2	999.6	322.37	610.3 W	791.7 N	1.6	0.0	1.6
66	3883.0	87.00	306.50	317.50	2961.4	1015.1	1028.5	322.24	629.9 W	813.1 N	0.0	0.0	0.0
67	3914.0	85.63	307.00	318.00	2963.4	1045.9	1059.3	322.11	650.7 W	836.0 N	4.7	1.6	-4.4
68	3944.0	85.13	307.50	318.50	2965.8	1075.7	1089.2	322.00	670.6 W	858.3 N	2.3	1.7	-1.7
69	3974.0	84.75	307.00	318.00	2968.4	1105.5	1119.0	321.90	690.5 W	880.6 N	2.1	-1.7	-1.3
70	4005.0	86.25	307.50	318.50	2970.9	1136.2	1149.8	321.80	711.0 W	903.6 N	5.1	1.6	4.8
71	4035.0	86.75	307.50	318.50	2972.7	1166.1	1179.7	321.72	730.9 W	926.1 N	1.6	0.0	1.7
72	4065.0	86.25	307.50	318.50	2974.5	1195.9	1209.6	321.64	750.7 W	948.5 N	1.6	0.0	-1.7
73	4095.0	86.75	307.50	318.50	2976.3	1225.7	1239.5	321.56	770.6 W	970.9 N	1.6	0.0	1.7
74	4125.0	86.88	308.00	319.00	2978.0	1255.5	1269.4	321.50	790.3 W	993.4 N	1.7	1.7	0.4
75	4186.0	86.63	308.50	319.50	2981.5	1316.0	1330.3	321.39	830.1 W	1039.6 N	0.9	0.8	-0.4
76	4245.0	86.75	309.00	320.00	2984.9	1374.5	1389.2	321.32	868.1 W	1084.5 N	0.9	0.8	0.2
77	4306.0	87.13	309.50	320.50	2988.1	1434.9	1450.1	321.28	907.1 W	1131.4 N	1.0	0.8	0.6
78	4336.0	87.75	309.50	320.50	2989.5	1464.6	1480.1	321.26	926.1 W	1154.5 N	2.1	0.0	2.1

Geoservices-Directional

Deviation report

Well :
 Field :
 Company :

PIEDRA LUMBRER
 RIO PUERTO
 MERIDIAN OIL CO.

Surv no	Measured depth feet	Drift angle degree	Azinut magnt. degree	Azinut geogr. degree	Vertical depth feet	Horizntl prjction feet	Horizntl displcmt feet	Average Az(geo) degree	Relative East/West feet	Coordinates. Nor/South feet	Dog leg dleg dlgH grBu /100ft		
Computation method : Radius of curvature													
79	4367.0	87.63	309.00	320.00	2990.7	1495.4	1511.0	321.24	945.9 W	1178.3 N	1.6	-1.6	-0.4
80	4458.0	88.13	308.50	319.50	2994.1	1585.7	1601.9	321.16	1004.7 W	1247.7 N	0.8	-0.5	0.5
81	4550.0	88.00	308.00	319.00	2997.2	1677.1	1693.8	321.05	1064.7 W	1317.4 N	0.6	-0.5	-0.1
82	4610.0	87.50	306.50	317.50	2999.5	1736.8	1753.7	320.96	1104.6 W	1362.1 N	2.6	-2.5	-0.8
83	4701.0	87.03	302.50	313.50	3003.9	1827.6	1844.2	320.69	1168.3 W	1426.9 N	4.4	-4.4	-0.5
84	4792.0	86.13	300.50	311.50	3009.3	1918.4	1934.1	320.31	1235.3 W	1488.3 N	2.4	-2.2	-1.0
85	4852.0	87.00	300.50	311.50	3012.9	1978.3	1993.4	320.04	1280.2 W	1528.0 N	1.5	0.0	1.5
86	4943.0	88.50	301.00	312.00	3016.5	2069.2	2083.4	319.68	1348.0 W	1588.5 N	1.7	0.5	1.6
87	5004.0	89.00	300.50	311.50	3017.8	2130.2	2143.8	319.46	1393.5 W	1629.1 N	1.1	-0.8	0.8
88	5065.0	89.63	300.50	311.50	3018.5	2191.1	2204.2	319.24	1439.2 W	1669.5 N	1.0	0.0	1.0
89	5096.0	90.00	300.50	311.50	3018.6	2222.1	2234.9	319.13	1462.4 W	1690.1 N	1.2	0.0	1.2
90	5188.0	90.00	300.00	311.00	3018.6	2314.1	2326.1	318.82	1531.6 W	1750.7 N	0.5	-0.5	0.0
91	5218.0	89.63	300.50	311.50	3018.7	2344.1	2355.8	318.72	1554.1 W	1770.5 N	2.1	1.7	-1.2
92	5280.0	89.00	300.00	311.00	3019.5	2406.0	2417.3	318.53	1600.7 W	1811.4 N	1.3	-0.8	-1.0
93	5340.0	88.00	299.50	310.50	3021.1	2466.0	2476.8	318.34	1646.2 W	1850.5 N	1.9	-0.8	-1.7
94	5401.0	87.38	299.00	310.00	3023.5	2526.9	2537.1	318.15	1692.7 W	1889.9 N	1.3	-0.8	-1.0
95	5522.0	86.50	298.50	309.50	3030.0	2647.5	2656.7	317.77	1785.6 W	1967.2 N	0.8	-0.4	-0.7
96	5612.0	86.50	298.50	309.50	3035.5	2737.1	2745.6	317.50	1854.9 W	2024.3 N	0.0	0.0	0.0
97	5702.0	86.63	298.00	309.00	3040.9	2826.8	2834.6	317.24	1924.5 W	2081.2 N	0.6	-0.6	0.1
98	5792.0	86.13	297.50	308.50	3046.5	2916.4	2923.4	316.98	1994.5 W	2137.4 N	0.8	-0.6	-0.6
99	5882.0	87.13	298.50	309.50	3051.8	3006.0	3012.4	316.74	2064.3 W	2193.9 N	1.6	1.1	1.1
100	6003.0	86.88	297.50	308.50	3058.2	3126.5	3132.2	316.45	2158.2 W	2270.0 N	0.8	-0.8	-0.2
101	6124.0	86.88	297.50	308.50	3064.7	3247.0	3251.9	316.15	2252.8 W	2345.2 N	0.0	0.0	0.0
102	6246.0	87.13	298.50	309.50	3071.1	3368.5	3372.8	315.89	2347.5 W	2421.8 N	0.8	0.8	0.2
103	6367.0	86.88	298.00	309.00	3077.4	3489.1	3492.9	315.66	2441.1 W	2498.3 N	0.5	-0.4	-0.2
104	6453.0	87.00	298.50	309.50	3082.0	3574.8	3578.2	315.51	2507.6 W	2552.6 N	0.6	0.6	0.1