



00208379

*GEOSERVICES, INC.*  
*DIRECTIONAL MWD*

MWD REPORT  
FOR  
BRIGHT & COMPANY  
UNION No. 1  
Larimer County, Colorado

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JUL - 8 1993

COLO. OIL & GAS CONS. COMM.

May 1993

Houston TX Ph: 713/820-5908 Fax: 713/820-9341

ALL

eviation report

RIGHT & COMPANY

AKE CANAL

NION #1

Coordinates

Well head :

X = 0 1/2 0' 0.00

Y = 0 1/2 0' 0.00

Z = 0.0

Target :

X = 0 1/2 0' 0.00

Y = 0 1/2 0' 0.00

Z = 0.0

Impact :

X = 0 1/2 0' 0.00

Y = 0 1/2 0' 0.00

Z = 0.0

Horizontal displacement

0.00 ft

Total vertical depth

0.00 ft

Kick off point

5580.00 ft

Magnetic declination

11.10 deg

Convergence

0.00 deg

Horizontal projection computed in azimuth North 85.96 deg. ( NE 85.96 )

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COLORADO OIL & GAS CONS. COMM.

Surv no	Measured depth feet	Drift angle degree	Azimuth magnt. degree	Azimuth 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 /100f
Computation method : Radius of curvature											
1	434.0	0.00	348.90	360.00	434.0	0.0	0.0	90.00	0.0 E	0.0 N	0.00
2	485.0	0.42	248.00	259.10	485.0	-0.1	0.2	309.55	0.1 W	0.1 N	0.82
3	578.0	0.50	237.96	249.06	578.0	-0.9	0.8	263.22	0.8 W	0.1 S	0.12
4	672.0	0.42	227.99	239.09	672.0	-1.6	1.6	254.23	1.5 W	0.4 S	0.12
5	765.0	0.60	241.57	252.67	765.0	-2.3	2.4	251.36	2.3 W	0.8 S	0.23
6	859.0	0.58	265.71	276.81	859.0	-3.3	3.3	255.16	3.2 W	0.9 S	0.26
7	952.0	0.86	254.97	266.07	952.0	-4.5	4.5	259.36	4.4 W	0.8 S	0.33
8	1046.0	0.78	263.88	274.98	1046.0	-5.8	5.8	261.93	5.7 W	0.8 S	0.16
9	1139.0	0.78	252.73	263.83	1139.0	-7.1	7.0	263.27	7.0 W	0.8 S	0.16
10	1233.0	0.87	250.57	261.67	1232.9	-8.4	8.4	263.19	8.3 W	1.0 S	0.10
11	1326.0	0.96	254.98	266.08	1325.9	-9.9	9.9	263.29	9.8 W	1.2 S	0.12
12	1420.0	1.02	265.52	276.62	1419.9	-11.5	11.5	264.42	11.4 W	1.1 S	0.20
13	1513.0	1.07	261.57	272.67	1512.9	-13.2	13.2	265.73	13.1 W	1.0 S	0.09
14	1607.0	0.96	263.70	274.80	1606.9	-14.8	14.8	266.63	14.8 W	0.9 S	0.12
15	1700.0	0.86	259.96	271.06	1699.9	-16.3	16.3	267.20	16.3 W	0.8 S	0.13
16	1794.0	0.98	260.86	271.96	1793.9	-17.8	17.8	267.56	17.8 W	0.8 S	0.13
17	1887.0	1.06	262.49	273.59	1886.9	-19.5	19.4	268.01	19.4 W	0.7 S	0.09
18	1981.0	1.12	264.53	275.63	1980.8	-21.2	21.2	268.56	21.2 W	0.5 S	0.07
19	2074.0	1.40	261.50	272.60	2073.8	-23.2	23.2	269.05	23.2 W	0.4 S	0.31
20	2168.0	1.17	256.15	267.25	2167.8	-25.4	25.4	269.12	25.3 W	0.4 S	0.28
21	2261.0	1.09	262.37	273.47	2260.8	-27.2	27.2	269.21	27.2 W	0.4 S	0.16
22	2355.0	1.22	261.82	272.92	2354.8	-29.1	29.1	269.47	29.1 W	0.3 S	0.14
23	2448.0	1.53	258.16	269.26	2447.7	-31.3	31.3	269.58	31.3 W	0.2 S	0.35
24	2542.0	1.53	254.49	265.59	2541.7	-33.8	33.8	269.42	33.8 W	0.3 S	0.10
25	2635.0	1.56	259.93	271.03	2634.7	-36.3	36.3	269.34	36.3 W	0.4 S	0.16
26	2729.0	1.39	260.73	271.83	2728.6	-38.7	38.7	269.47	38.7 W	0.4 S	0.18
27	2822.0	1.50	263.63	274.73	2821.6	-41.0	41.1	269.69	41.1 W	0.2 S	0.14
28	2916.0	1.60	270.05	281.15	2915.6	-43.5	43.6	270.17	43.6 W	0.1 N	0.21
29	3009.0	1.75	278.28	289.38	3008.5	-46.1	46.2	271.05	46.2 W	0.8 N	0.30
30	3102.0	1.70	270.91	282.01	3101.5	-48.7	48.9	271.88	48.9 W	1.6 N	0.24
31	3196.0	1.53	273.21	284.31	3195.4	-51.3	51.5	272.45	51.5 W	2.2 N	0.19
32	3289.0	1.52	267.26	278.36	3288.4	-53.6	54.0	272.86	53.9 W	2.7 N	0.17
33	3383.0	1.77	270.98	282.08	3382.4	-56.3	56.7	273.21	56.6 W	3.2 N	0.29
34	3476.0	1.83	276.44	287.54	3475.3	-59.0	59.5	273.77	59.4 W	3.9 N	0.20
35	3570.0	1.83	276.29	287.39	3569.3	-61.8	62.4	274.43	62.3 W	4.8 N	0.02

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NION #1

Surv no	Measured depth feet	Drift angle degree	Azimuth magnt. degree	Azimuth 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 /100f
Computation method : Radius of curvature											
36	3663.0	1.88	278.11	289.21	3662.2	-64.6	65.4	275.06	65.1 W	5.8 N	0.08
37	3757.0	1.77	283.57	294.67	3756.2	-67.3	68.2	275.79	67.9 W	6.9 N	0.22
38	3850.0	1.86	278.75	289.85	3849.1	-69.9	71.1	276.46	70.6 W	8.0 N	0.19
39	3944.0	2.01	277.85	288.95	3943.1	-72.8	74.2	277.01	73.6 W	9.1 N	0.16
40	4037.0	1.92	270.82	281.92	4036.0	-75.9	77.3	277.36	76.7 W	9.9 N	0.28
41	4131.0	2.01	276.28	287.38	4130.0	-78.9	80.5	277.65	79.8 W	10.7 N	0.22
42	4224.0	2.17	272.72	283.82	4222.9	-82.1	83.9	277.97	83.1 W	11.6 N	0.22
43	4318.0	2.32	276.95	288.05	4316.8	-85.6	87.5	278.30	86.6 W	12.6 N	0.24
44	4411.0	2.10	279.83	290.93	4409.8	-88.8	91.0	278.74	90.0 W	13.8 N	0.27
45	4505.0	2.41	287.35	298.45	4503.7	-92.1	94.6	279.35	93.3 W	15.4 N	0.46
46	4598.0	2.62	292.45	303.55	4596.6	-95.4	98.4	280.23	96.8 W	17.5 N	0.33
47	4672.0	2.76	305.66	316.76	4670.5	-97.9	101.4	281.21	99.5 W	19.7 N	0.86
48	4692.0	2.52	296.56	307.66	4690.5	-98.6	102.2	281.47	100.2 W	20.3 N	2.41
49	4785.0	2.37	299.20	310.30	4783.4	-101.5	105.8	282.47	103.3 W	22.8 N	0.20
50	4879.0	2.61	302.40	313.50	4877.3	-104.3	109.3	283.52	106.3 W	25.6 N	0.29
51	5066.0	2.87	311.51	322.61	5064.1	-109.8	116.8	286.00	112.3 W	32.2 N	0.27
52	5159.0	2.72	312.41	323.51	5157.0	-112.3	120.4	287.30	115.0 W	35.8 N	0.17
53	5253.0	2.32	314.48	325.58	5250.9	-114.4	123.8	288.46	117.4 W	39.2 N	0.44
54	5346.0	2.28	313.40	324.50	5343.8	-116.3	126.8	289.46	119.5 W	42.2 N	0.06
55	5440.0	2.03	317.33	328.43	5437.8	-118.1	129.6	290.41	121.5 W	45.2 N	0.31
56	5533.0	1.82	318.68	329.78	5530.7	-119.5	132.1	291.25	123.1 W	47.9 N	0.23
57	5581.0	3.70	38.70	49.80	5578.7	-118.9	132.5	292.15	122.7 W	50.0 N	7.98
58	5611.0	7.80	49.90	61.00	5608.5	-116.3	130.9	293.25	120.3 W	51.7 N	14.10
59	5641.0	11.90	51.30	62.40	5638.1	-111.7	127.8	295.06	115.7 W	54.1 N	13.69
60	5673.0	15.80	48.50	59.60	5669.1	-104.7	123.4	297.93	109.0 W	57.8 N	12.36
61	5704.0	19.30	53.50	64.60	5698.7	-96.2	118.4	301.68	100.8 W	62.2 N	12.28
62	5736.0	22.90	59.80	70.90	5728.5	-85.2	112.0	306.44	90.1 W	66.5 N	13.28
63	5767.0	26.40	64.00	75.10	5756.7	-72.6	104.8	312.12	77.8 W	70.3 N	12.62
64	5799.0	29.30	69.60	80.70	5785.0	-57.8	96.9	319.31	63.2 W	73.5 N	12.20
65	5831.0	33.40	73.10	84.20	5812.3	-41.2	88.9	328.33	46.7 W	75.6 N	14.01
66	5862.0	36.50	72.40	83.50	5837.7	-23.5	82.8	339.49	29.0 W	77.5 N	10.08
67	5893.0	39.10	69.60	80.70	5862.2	-4.5	80.8	352.76	10.2 W	80.2 N	10.05
68	5919.0	41.60	72.40	83.50	5882.0	12.3	82.7	4.49	6.5 E	82.5 N	11.88
69	5941.0	43.40	75.30	86.40	5898.2	27.1	86.4	14.26	21.3 E	83.8 N	12.09
70	5977.0	46.70	74.60	85.70	5923.7	52.6	97.5	28.63	46.7 E	85.5 N	9.27
71	6008.0	47.30	74.60	85.70	5944.8	75.3	111.4	38.47	69.3 E	87.2 N	1.94
72	6039.0	51.00	72.40	83.50	5965.1	98.7	128.8	46.01	92.6 E	89.4 N	13.09
73	6067.0	55.37	71.50	82.60	5981.9	121.1	147.3	51.27	114.9 E	92.2 N	15.82
74	6099.0	59.75	71.50	82.60	5999.0	148.1	170.9	55.98	141.7 E	95.6 N	13.69
75	6130.0	63.87	70.50	81.60	6013.7	175.3	195.8	59.50	168.7 E	99.4 N	13.59
76	6163.0	67.75	69.50	80.60	6027.2	205.3	224.1	62.33	198.5 E	104.0 N	12.08
77	6195.0	72.63	69.50	80.60	6038.0	235.3	252.8	64.47	228.2 E	109.0 N	15.25
78	6226.0	78.75	71.00	82.10	6045.7	265.2	281.7	66.25	257.8 E	113.5 N	20.29

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Computation method : Radius of curvature											
79	6254.0	84.25	71.00	82.10	6049.8	292.8	308.4	67.65	285.3 E	117.3 N	19.64
80	6285.0	88.25	73.00	84.10	6051.8	323.7	338.3	69.05	316.0 E	121.0 N	14.42
81	6316.0	88.88	73.50	84.60	6052.6	354.7	368.3	70.32	346.8 E	124.0 N	2.59
82	6347.0	88.75	74.00	85.10	6053.3	385.7	398.4	71.44	377.7 E	126.8 N	1.67
83	6379.0	88.62	73.50	84.60	6054.0	417.7	429.6	72.43	409.5 E	129.7 N	1.61
84	6410.0	87.75	73.50	84.60	6055.0	448.6	459.9	73.24	440.4 E	132.6 N	2.81
85	6441.0	87.62	74.00	85.10	6056.2	479.6	490.3	73.97	471.2 E	135.4 N	1.67
86	6473.0	87.12	74.00	85.10	6057.7	511.6	521.7	74.65	503.1 E	138.1 N	1.56
87	6503.0	86.50	74.00	85.10	6059.4	541.5	551.2	75.21	532.9 E	140.7 N	2.07
88	6534.0	86.50	74.50	85.60	6061.3	572.4	581.7	75.75	563.8 E	143.2 N	1.61
89	6566.0	86.25	74.00	85.10	6063.3	604.4	613.2	76.25	595.6 E	145.8 N	1.74
90	6597.0	86.25	74.00	85.10	6065.3	635.3	643.8	76.67	626.4 E	148.4 N	0.00
91	6629.0	86.12	74.00	85.10	6067.4	667.2	675.3	77.07	658.2 E	151.1 N	0.41
92	6660.0	86.12	74.00	85.10	6069.5	698.2	706.0	77.42	689.0 E	153.8 N	0.00
93	6691.0	86.00	74.50	85.60	6071.7	729.1	736.6	77.75	719.9 E	156.3 N	1.65
94	6723.0	85.75	74.00	85.10	6074.0	761.0	768.3	78.06	751.7 E	158.9 N	1.74
95	6754.0	86.00	74.00	85.10	6076.2	791.9	799.0	78.34	782.5 E	161.5 N	0.80
96	6794.0	86.25	74.00	85.10	6078.9	831.8	838.6	78.66	822.2 E	164.9 N	0.62
97	6823.0	88.00	74.50	85.60	6080.4	860.8	867.4	78.88	851.1 E	167.3 N	6.28
98	6854.0	88.00	73.50	84.60	6081.4	891.8	898.2	79.09	882.0 E	169.9 N	3.22
99	6885.0	86.88	74.00	85.10	6082.8	922.7	929.0	79.29	912.8 E	172.7 N	3.96
100	6915.0	86.37	74.00	85.10	6084.6	952.7	958.8	79.47	942.7 E	175.3 N	1.70
101	6945.0	86.12	73.50	84.60	6086.6	982.6	988.6	79.63	972.5 E	178.0 N	1.86
102	6977.0	87.00	73.50	84.60	6088.5	1014.5	1020.4	79.79	1004.3 E	181.0 N	2.75
103	7009.0	86.63	74.00	85.10	6090.3	1046.5	1052.3	79.94	1036.1 E	183.8 N	1.94
104	7040.0	86.75	73.00	84.10	6092.0	1077.4	1083.1	80.07	1066.9 E	186.7 N	3.24
105	7059.0	86.62	73.00	84.10	6093.1	1096.4	1102.0	80.14	1085.8 E	188.7 N	0.67
106	7090.0	86.62	72.50	83.60	6095.0	1127.3	1132.9	80.24	1116.5 E	192.0 N	1.61
107	7121.0	87.12	71.50	82.60	6096.7	1158.2	1163.8	80.32	1147.3 E	195.7 N	3.60
108	7152.0	88.75	71.00	82.10	6097.8	1189.1	1194.8	80.37	1178.0 E	199.8 N	5.50
109	7183.0	89.25	71.00	82.10	6098.3	1220.1	1225.8	80.41	1208.7 E	204.1 N	1.61
110	7215.0	89.50	70.50	81.60	6098.7	1252.0	1257.8	80.45	1240.3 E	208.6 N	1.75
111	7246.0	89.00	70.50	81.60	6099.1	1282.9	1288.8	80.48	1271.0 E	213.2 N	1.61
112	7278.0	88.12	71.50	82.60	6099.9	1314.8	1320.7	80.52	1302.7 E	217.6 N	4.16
113	7309.0	88.25	72.00	83.10	6100.9	1345.7	1351.7	80.57	1333.4 E	221.4 N	1.67
114	7340.0	88.62	71.50	82.60	6101.7	1376.7	1382.7	80.62	1364.2 E	225.3 N	2.01
115	7372.0	88.25	72.00	83.10	6102.6	1408.6	1414.6	80.67	1395.9 E	229.3 N	1.94
116	7402.0	86.88	73.50	84.60	6103.9	1438.6	1444.6	80.74	1425.7 E	232.5 N	6.77
117	7434.0	85.75	73.50	84.60	6105.9	1470.5	1476.4	80.82	1457.5 E	235.5 N	3.53
118	7465.0	85.87	73.00	84.10	6108.2	1501.4	1507.3	80.89	1488.3 E	238.5 N	1.65
119	7496.0	85.87	72.50	83.60	6110.4	1532.3	1538.2	80.95	1519.0 E	241.8 N	1.61
120	7527.0	85.87	72.50	83.60	6112.6	1563.2	1569.0	81.01	1549.8 E	245.3 N	0.00
121	7565.0	85.12	73.00	84.10	6115.6	1601.1	1606.9	81.07	1587.4 E	249.3 N	2.37

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Computation method : Radius of curvature											
122	7596.0	83.50	73.50	84.60	6118.7	1631.9	1637.7	81.13	1618.1 E	252.4 N	5.47
123	7627.0	84.12	74.00	85.10	6122.0	1662.7	1668.4	81.20	1648.8 E	255.1 N	2.56
124	7658.0	84.25	73.50	84.60	6125.2	1693.5	1699.2	81.27	1679.5 E	257.9 N	1.66
125	7690.0	84.37	73.50	84.60	6128.4	1725.4	1731.0	81.33	1711.2 E	260.9 N	0.37
126	7722.0	84.37	73.00	84.10	6131.5	1757.2	1762.8	81.39	1742.9 E	264.0 N	1.55
127	7753.0	85.00	73.50	84.60	6134.4	1788.1	1793.6	81.44	1773.6 E	267.1 N	2.59
128	7784.0	84.62	73.50	84.60	6137.2	1818.9	1824.5	81.49	1804.4 E	270.0 N	1.23
129	7816.0	84.38	74.00	85.10	6140.2	1850.8	1856.3	81.55	1836.1 E	272.8 N	1.73
130	7846.0	83.87	74.00	85.10	6143.3	1880.6	1886.0	81.60	1865.8 E	275.4 N	1.70
131	7878.0	82.50	74.00	85.10	6147.1	1912.4	1917.8	81.66	1897.5 E	278.1 N	4.28
132	7910.0	82.63	73.00	84.10	6151.2	1944.1	1949.4	81.71	1929.1 E	281.1 N	3.12
133	7941.0	83.00	73.50	84.60	6155.1	1974.8	1980.2	81.75	1959.7 E	284.1 N	2.00
134	7965.0	83.25	73.00	84.10	6158.0	1998.7	2004.0	81.78	1983.4 E	286.5 N	2.32
135	7994.0	83.62	73.00	84.10	6161.3	2027.5	2032.8	81.81	2012.0 E	289.4 N	1.28
136	8026.0	84.00	73.50	84.60	6164.8	2059.3	2064.5	81.85	2043.7 E	292.6 N	1.95
137	8058.0	83.50	73.50	84.60	6168.2	2091.1	2096.3	81.89	2075.4 E	295.6 N	1.56
138	8088.0	83.25	73.50	84.60	6171.7	2120.8	2126.1	81.93	2105.0 E	298.4 N	0.83
139	8119.0	82.38	73.50	84.60	6175.6	2151.6	2156.8	81.97	2135.7 E	301.3 N	2.81
140	8150.0	82.50	73.50	84.60	6179.7	2182.3	2187.5	82.01	2166.3 E	304.1 N	0.39
141	8182.0	82.75	73.50	84.60	6183.8	2214.0	2219.2	82.04	2197.9 E	307.1 N	0.78