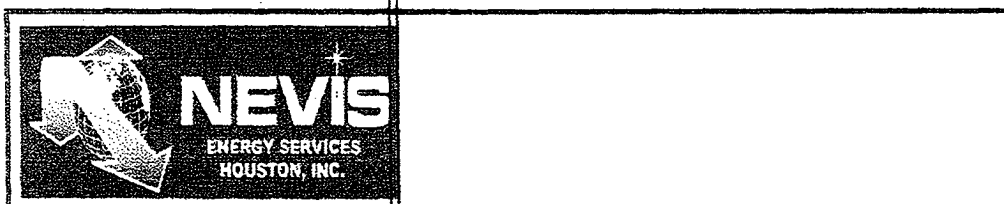


ROVD JAN 4 07
OIL CONS. DIV.
DIST. 3



OPERATOR: BLACKHILLS GAS RESOURCES
WELL: jicarrila 452-07#13
LOCATION: RIO ARRIBA CO., NM

START: 11/11/06
FINISH: 11/20/06

PROPOSED DIRECTION: 266.33

MIN. CURVATURE CALCULATIONS

SUR NUM	MD ft	INCL °	AZM. °	TVD ft	N-S ft	E-W ft	SECT. ft	DLS %/100 ft	BR %/100 ft	Temp
44	5194.0	88.50	270.0	3811.7	-95.0	-1311.8	1315.2	7.4	6.8	
45	5226.0	88.50	270.0	3812.5	-95.0	-1343.8	1347.1	0.0	0.0	
46	5257.0	88.40	269.9	3813.4	-95.1	-1374.8	1378.0	0.5	0.3	
47	5288.0	88.50	270.1	3814.2	-95.1	-1405.7	1408.9	0.7	0.3	
48	5319.0	88.50	270.2	3815.0	-95.0	-1436.7	1439.9	0.3	0.0	
49	5350.0	88.70	270.2	3815.8	-94.9	-1467.7	1470.8	0.6	0.6	
50	5382.0	89.60	270.0	3816.3	-94.8	-1499.7	1502.7	2.9	2.8	
51	5413.0	89.50	270.1	3816.5	-94.8	-1530.7	1533.6	0.5	0.3	
52	5444.0	89.20	270.1	3816.8	-94.7	-1561.7	1564.6	1.0	1.0	
53	5507.0	89.80	269.7	3817.4	-94.8	-1624.7	1627.5	1.1	1.0	
54	5538.0	90.10	269.0	3817.4	-95.2	-1655.7	1658.4	2.5	1.0	
55	5570.0	90.40	270.0	3817.3	-95.5	-1687.7	1690.4	3.3	0.9	
56	5601.0	90.70	270.0	3817.0	-95.5	-1718.7	1721.3	1.0	1.0	
57	5633.0	90.80	270.0	3816.6	-95.5	-1750.7	1753.2	0.3	0.3	
58	5664.0	90.60	270.0	3816.2	-95.5	-1781.7	1784.2	0.6	0.6	
59	5690.0	91.00	270.5	3815.8	-95.4	-1807.7	1810.1	2.5	1.5	
60	5721.0	91.10	270.8	3815.3	-95.0	-1838.7	1841.0	1.0	0.3	
61	5753.0	90.70	270.6	3814.8	-94.6	-1870.7	1872.9	1.4	1.3	
62	5784.0	91.10	270.8	3814.3	-94.2	-1901.7	1903.8	1.4	1.3	
63	5802.0	91.10	270.0	3813.9	-94.1	-1919.7	1921.8	4.4	0.0	
td	5846.3	91.10	270.0	3813.1	-94.1	-1964.0	1966.0	0.0	0.0	

Handwritten signature/initials

Surface 690/N 1345/E
Origin/Lateral 775/N 1475/E
End of lateral 784/N 732/W
MD 5864 TVD 3813

MD 4004 TVD 3923 JIC 452-7#13

SURF: 690 FN 1345 FE
94 1964
784 FN 4041
732 FW

SEC
WIDTH
2639
1402
4041

API # 30039-29470 MP

Handwritten mark



OPERATOR: BLACKHILLS GAS RESOURCES
 WELL: jicarrila 452-07#13
 LOCATION: RIO ARRIBA CO., NM

START: 11/11/06
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PROPOSED DIRECTION: 266.33

MIN. CURVATURE CALCULATIONS

SUR NUM	MD ft	INCL. °	AZM. °	TVD ft	N-S ft	E-W ft	SECT. ft	DLS %/100 ft	BR %/100 ft	Temp
22	4505.0	97.60	271.6	8861.7	-113.5	-626.0	632.0	2.0	0.6	
23	4537.0	97.80	272.3	8857.4	-112.4	-657.7	663.6	2.3	0.6	
24	4568.0	97.90	272.7	8853.2	-111.1	-688.4	694.1	1.3	0.3	
25	4600.0	97.90	272.9	8848.8	-109.5	-720.0	725.6	0.6	0.0	
26	4631.0	97.90	272.9	8844.5	-108.0	-750.7	756.1	0.0	0.0	
27	4661.0	97.80	272.7	8840.4	-106.5	-780.4	785.6	0.7	0.3	
28	4693.0	97.60	272.4	8836.1	-105.1	-812.1	817.1	1.1	0.6	
29	4724.0	97.70	271.9	8832.0	-104.0	-842.8	847.7	1.6	0.3	
30	4755.0	98.10	271.6	8827.7	-103.0	-873.5	878.3	1.6	1.3	
31	4787.0	97.30	271.5	8823.5	-102.2	-905.2	909.8	2.5	2.5	
32	4818.0	94.30	271.6	8820.3	-101.3	-936.0	940.6	9.7	9.7	
33	4850.0	92.40	271.4	8818.5	-100.5	-967.9	972.4	6.0	5.9	
34	4881.0	92.50	271.2	8817.1	-99.8	-998.9	1003.2	0.7	0.3	
35	4913.0	92.40	271.1	8815.8	-99.1	-1030.9	1035.1	0.4	0.3	
36	4944.0	90.80	270.8	8814.9	-98.6	-1061.8	1066.0	5.3	5.2	
37	4975.0	90.70	270.8	8814.5	-98.2	-1092.8	1096.9	0.3	0.3	
38	5006.0	90.80	270.9	8814.1	-97.7	-1123.8	1127.8	0.5	0.3	
39	5037.0	91.00	271.0	8813.6	-97.2	-1154.8	1158.7	0.7	0.6	
40	5069.0	91.10	270.8	8813.0	-96.7	-1186.8	1190.6	0.7	0.3	
41	5100.0	91.20	271.0	8812.4	-96.2	-1217.8	1221.5	0.7	0.3	
42	5132.0	90.80	270.8	8811.8	-95.7	-1249.8	1253.4	1.4	1.3	
43	5163.0	90.60	270.9	8811.4	-95.3	-1280.8	1284.3	0.7	0.6	

Rhett / Robert



OPERATOR: BLACKHILLS GAS RESOURCES
 WELL: jicarrila 452-07#13
 LOCATION: RIO ARRIBA CO., NM

START: 11/11/06
 FINISH: 11/20/06

PROPOSED DIRECTION: 266.33

MIN. CURVATURE CALCULATIONS

SUR NUM	MD ft	INCL. °	AZM. °	TVD ft	N-S ft	E-W ft	SECT. ft	DLS %/100 ft	BR %/100 ft	Temp
tie in	3800.0	0.35	184.2	3799.4	-59.5	-9.5	13.3	0.0	0.0	
1	3852.0	13.50	258.0	3850.9	-60.9	-15.5	19.4	25.8	25.3	
2	3873.0	25.50	263.1	3870.6	-62.0	-22.4	26.3	57.7	57.1	
3	3904.0	44.60	259.9	3895.9	-64.7	-39.9	44.0	61.9	61.6	
4	3936.0	64.50	256.8	3914.4	-70.0	-65.3	69.7	62.7	62.2	
5	3973.0	87.70	256.0	3923.2	-78.4	-100.0	104.8	62.7	62.7	
6	4004.0	92.00	260.0	3923.3	-84.9	-130.3	135.5	18.9	13.9	
7	4035.0	95.30	262.9	3921.3	-89.5	-160.9	166.3	14.2	10.6	
8	4067.0	97.70	265.5	3917.7	-92.7	-192.5	198.0	11.0	7.5	
9	4098.0	97.80	264.9	3913.5	-95.2	-223.1	228.7	1.9	0.3	
10	4129.0	98.00	264.7	3909.3	-98.0	-253.7	259.4	0.9	0.6	
11	4160.0	97.60	264.3	3905.0	-101.0	-284.3	290.1	1.8	1.3	
12	4191.0	97.70	264.4	3900.9	-104.0	-314.8	320.8	0.5	0.3	
13	4223.0	97.20	264.4	3896.8	-107.1	-346.4	352.6	1.6	1.6	
14	4255.0	97.10	267.3	3892.8	-109.4	-378.1	384.3	9.0	0.3	
15	4287.0	97.00	267.3	3888.9	-110.9	-409.8	416.1	0.3	0.3	
16	4318.0	96.60	266.6	3885.2	-112.5	-440.5	446.8	2.6	1.3	
17	4349.0	97.20	268.6	3881.5	-113.8	-471.3	477.6	6.7	1.9	
18	4380.0	97.30	269.4	3877.5	-114.4	-502.0	508.3	2.6	0.3	
19	4411.0	97.20	269.8	3873.6	-114.6	-532.8	539.0	1.3	0.3	
20	4443.0	97.10	270.3	3869.7	-114.5	-564.5	570.7	1.6	0.3	
21	4474.0	97.40	271.0	3865.7	-114.2	-595.3	601.4	2.4	1.0	

Rhett / Robert