



DIRECTIONAL SURVEY CERTIFICATION

S 1105/N 1085/W
BHL 1117/N 1245/W
BHL 1675/N 1844/E

RE: Mallon Oil Company (Operator)

Jicarilla 29-02-04 #21 (Well Name & No.)

Section 4 Twp. 29 N Range 02 W

Well File No. 300-39-27674

I, Matthew K. Brown, having personal knowledge of all the facts, hereby certify that the

attached directional surveys for the well run from measured depth of

187 feet to a measured depth of 6,177 feet,

respectively, are true and correct as determined from all available records.

Matthew K. Brown
Signature

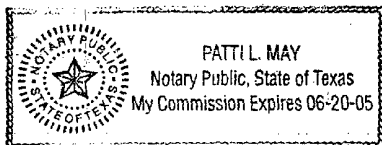
Operations Coord.
Title

Nevis Energy Services, Inc
Company

State of Texas
County of Harris

On this 06 day of January, 2005, before me personally appeared

Matthew K. Brown to me known as the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.



Patti L. May
Notary Public

6/20/05
My Commission Expires

6



06 January 2005

State of New Mexico
Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410

Re: Mallon Oil Company
Jicarilla 29-02-04 #21
Rio Arriba Co., NM
Job #204-289
API No. 300-39-27674

To whom it May Concern:

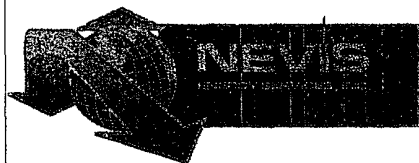
Enclosed please find the Directional Survey data and Lease Plat for the above referenced well to be filed with your group.

Name & Title of Surveyor	Drainhole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Jeff Arenas	#21	187	6,177	06 Nov 04	12 Nov 04	MWD

Thank you for the opportunity to be of service. Please contact me if you have any questions or require additional information.

Sincerely,

Matthew K. Brown
Operations Coordinator



1724-B Townhurst Dr, Houston, Tx 77043
(713) 827-8302
www.nevisenergy.com

Job Number: 204-289
Company: Black Hills E & P
Lease/Well: Jicarilla 29-02-04 # 21
Location: Rio Arriba Co., NM
Rig Name: Key # 44
RKB: ☐
G.L. or M.S.L.: API #300-39-27674

State/Country: NM
Declination: 10.39° East
Grid: ☐
File name: N:\BLACKH~1\204-28~1\29-02-04.SVY
Date/Time: 21-Jan-05 / 11:25
Curve Name: Final NMOCD Filing

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 103.90
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT
Tie In From Surface						
.00	.00	.00	.00	.00	.00	.00
First Nevis MWD Survey						
187.00	.20	260.00	187.00	-.06	-.32	-.30
374.00	.40	323.80	374.00	.41	-1.03	-1.10
561.00	.60	336.90	560.99	1.84	-1.80	-2.19
746.00	.90	7.50	745.97	4.17	-1.99	-2.93
932.00	.90	8.10	931.95	7.07	-1.59	-3.24
1111.00	.90	7.40	1110.93	9.85	-1.21	-3.54
1290.00	1.30	348.60	1289.90	13.24	-1.43	-4.57
1469.00	.50	326.50	1468.87	15.88	-2.27	-6.01
1657.00	1.40	275.30	1656.85	16.78	-5.01	-8.89
1845.00	1.70	278.20	1844.78	17.39	-10.05	-13.93
2034.00	2.20	293.90	2033.67	19.25	-16.14	-20.30
2221.00	2.60	298.60	2220.51	22.74	-23.15	-27.93
2409.00	2.50	308.10	2408.32	27.31	-30.12	-35.80
2595.00	2.00	307.70	2594.18	31.80	-35.88	-42.47
2656.00	1.70	314.90	2655.15	33.09	-37.36	-44.22
2842.00	1.50	312.20	2841.07	36.67	-41.12	-48.73
3031.00	1.30	319.10	3030.02	39.95	-44.36	-52.66
3217.00	1.00	295.60	3215.98	42.25	-47.20	-55.97
3402.00	.69	269.40	3400.96	42.93	-49.77	-58.63
3529.00	.70	316.80	3527.95	43.49	-51.07	-60.02

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT
3560.00	40	320.30	3558.95	43.71	-51.27	-60.27
3591.00	5.20	101.40	3589.91	43.52	-49.96	-58.95
3623.00	12.20	98.60	3621.52	42.73	-45.19	-54.13
3655.00	18.80	97.30	3652.34	41.56	-36.72	-45.63
3685.00	21.20	97.20	3680.53	40.27	-26.54	-35.44
3716.00	25.80	99.10	3708.95	38.50	-14.31	-23.14
3748.00	31.40	99.20	3737.04	36.06	.80	-7.88
3781.00	37.50	100.10	3764.24	32.92	19.20	10.73
3814.00	42.90	103.20	3789.43	28.59	40.04	32.00
3846.00	45.10	105.00	3812.45	23.17	61.59	54.22
3877.00	48.20	105.60	3833.73	17.22	83.33	76.75
3908.00	52.10	106.50	3853.59	10.64	106.20	100.53
3939.00	56.20	106.40	3871.74	3.53	130.29	125.63
3971.00	59.60	108.60	3888.75	-4.63	156.14	152.68
4000.00	61.90	105.70	3902.92	-12.09	180.31	177.93
4031.00	65.40	105.10	3916.68	-19.46	207.09	205.70
4062.00	68.90	105.30	3928.71	-26.95	234.65	234.25
4092.00	72.50	104.90	3938.63	-34.32	261.98	262.56
4123.00	74.60	105.10	3947.40	-42.02	290.70	292.28
4153.00	75.00	105.00	3955.27	-49.53	318.66	321.23
4185.00	74.80	105.00	3963.61	-57.53	348.50	352.11
4216.00	75.00	104.90	3971.68	-65.25	377.42	382.04
4247.00	76.40	104.20	3979.34	-72.80	406.49	412.08
4276.00	79.70	104.00	3985.34	-79.71	434.00	440.44
4309.00	82.70	104.50	3990.39	-87.74	465.61	473.05
4341.00	83.70	104.00	3994.18	-95.56	496.41	504.82
4373.00	86.40	103.70	3996.94	-103.19	527.36	536.70
4404.00	89.30	103.60	3998.10	-110.50	557.46	567.68
4613.00	91.50	104.00	3996.64	-160.35	760.41	776.66
4676.00	91.70	103.20	3994.88	-175.15	821.61	839.63
4739.00	91.40	104.30	3993.18	-190.12	882.79	902.61
4801.00	91.10	104.10	3991.83	-205.33	942.88	964.59
4864.00	91.30	104.70	3990.51	-220.99	1003.88	1027.58
4927.00	91.90	105.50	3988.75	-237.40	1064.68	1090.54
4990.00	92.30	105.90	3986.44	-254.43	1125.29	1153.46
5052.00	92.10	106.10	3984.06	-271.51	1184.85	1215.37
5115.00	89.50	106.40	3983.18	-289.14	1245.32	1278.31
5178.00	89.40	106.70	3983.79	-307.08	1305.71	1341.24
5241.00	89.40	106.40	3984.45	-325.03	1366.09	1404.17
5303.00	89.80	106.60	3984.88	-342.63	1425.54	1466.10
5366.00	91.30	106.10	3984.27	-360.37	1485.99	1529.04
5429.00	92.50	105.60	3982.18	-377.56	1546.56	1591.97
5491.00	88.40	106.10	3981.70	-394.49	1606.18	1653.92
5554.00	87.60	105.10	3983.90	-411.43	1666.82	1716.85
5617.00	87.40	103.60	3986.64	-427.02	1727.80	1779.79

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT
5684.00	90.80	104.50	3987.70	-443.29	1792.78	1846.77
5747.00	90.60	104.90	3986.93	-459.27	1853.71	1909.76
5810.00	90.20	104.80	3986.49	-475.42	1914.60	1972.75
5872.00	89.70	104.90	3986.54	-491.31	1974.53	2034.74
5935.00	88.00	104.20	3987.81	-507.13	2035.50	2097.72
5996.00	86.60	101.30	3990.68	-520.58	2094.92	2158.63
6059.00	88.90	104.20	3993.15	-534.47	2156.31	2221.56
6122.00	90.90	103.50	3993.26	-549.55	2217.47	2284.55
Last Nevis MWD Survey						
6177.00	91.30	103.50	3992.21	-562.39	2270.94	2339.54
Survey Projected to Bit						
6208.00	91.30	103.50	3991.50	-569.62	2301.08	2370.53