

Scientific Drilling

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AUG 05 1999
OIL CON. DIV.
DIST. 3

PENWELL ENERGY

Field: Entrada Wildcat
Site: Sandoval County, NM
Well: Penistaja Federal 23 #1
Wellpath: OH - Job #41F0699042
Survey: Penistaja Federal 23 #1

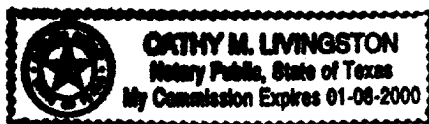
H-23-20N-4W
30-043-20947

OIL CON. DIV.
DIST. 3

This survey is correct to the best of my knowledge
and is supported by actual field data.

[Signature]

Company Representative



Cathy M. Livingston
NOTARY PUBLIC IN AND FOR THE
STATE OF Texas

SCIENTIFIC DRILLING

SURVEY REPORT

Company: PENWELL ENERGY
Field: Entrada Wildcat
Site: Sandoval County, NM
Well: Penistaja Federal 23 #1
Wellpath: OH - Job #41F0699042

Date: 7/6/1999 **Time:** 10:18:06 **Page:** 1
Co-ordinate(N/E) Reference: Site: Sandoval County, NM, True North
Vertical (TVD) Reference: SITE 0.0 above Mean Sea Level
Section (VS) Reference: Slot (0.0E,0.0N,0.0Azi)
Survey Calculation Method: Minimum Curvature

Survey: Penistaja Federal 23 #1

Start Date: 7/6/1999

Company: Casper S.D.I.
Tool: Keeper

Engineer: John Backner

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.0
200.0	0.28	272.01	200.0	0.0	-0.5	0.0	0.14	272.01	0.5
400.0	0.52	345.21	400.0	0.9	-1.2	0.9	0.26	307.03	1.5
600.0	0.25	35.66	600.0	2.1	-1.2	2.1	0.20	331.05	2.4
800.0	0.33	106.79	800.0	2.3	-0.4	2.3	0.17	350.74	2.4
1000.0	0.46	100.48	1000.0	2.0	1.0	2.0	0.07	25.44	2.2
1200.0	0.26	122.33	1200.0	1.6	2.1	1.6	0.12	52.61	2.7
1400.0	0.38	148.82	1400.0	0.8	2.9	0.8	0.09	73.99	3.0
1600.0	0.47	119.34	1600.0	-0.1	3.9	-0.1	0.12	92.17	3.9
1800.0	0.59	132.31	1800.0	-1.2	5.4	-1.2	0.08	102.98	5.5
2000.0	0.43	136.59	2000.0	-2.5	6.7	-2.5	0.08	110.40	7.1
2200.0	0.82	170.31	2199.9	-4.4	7.4	-4.4	0.26	120.85	8.7
2400.0	0.96	181.47	2399.9	-7.5	7.6	-7.5	0.11	134.61	10.7
2600.0	0.97	167.78	2599.9	-10.9	7.9	-10.9	0.12	143.80	13.4
2800.0	0.94	168.07	2799.9	-14.1	8.6	-14.1	0.02	148.52	16.5
3000.0	0.82	169.99	2999.8	-17.1	9.2	-17.1	0.06	151.68	19.5
3200.0	0.54	173.88	3199.8	-19.5	9.6	-19.5	0.14	153.81	21.7
3400.0	0.66	190.74	3399.8	-21.5	9.5	-21.5	0.11	156.29	23.5
3600.0	0.67	194.21	3599.8	-23.8	9.0	-23.8	0.02	159.37	25.4
3800.0	0.61	217.34	3799.8	-25.8	8.0	-25.8	0.13	162.71	27.0
4000.0	0.70	214.61	3999.8	-27.6	6.7	-27.6	0.05	166.39	28.4
4200.0	0.41	217.00	4199.8	-29.2	5.6	-29.2	0.14	169.21	29.7
4400.0	0.25	196.53	4399.8	-30.2	5.0	-30.2	0.10	170.57	30.6
4600.0	0.31	257.80	4599.8	-30.7	4.4	-30.7	0.14	171.92	31.0
4800.0	1.22	331.48	4799.7	-29.0	2.8	-29.0	0.59	174.45	29.1
5000.0	1.26	317.98	4999.7	-25.5	0.3	-25.5	0.15	179.27	25.5
5200.0	0.35	339.17	5199.7	-23.3	-1.4	-23.3	0.47	183.35	23.3
5400.0	0.16	55.70	5399.7	-22.5	-1.3	-22.5	0.17	183.43	22.6
5600.0	0.53	220.84	5599.7	-23.1	-1.7	-23.1	0.34	184.27	23.1
5800.0	0.80	173.46	5799.7	-25.2	-2.2	-25.2	0.29	184.93	25.3
6000.0	0.99	147.83	5999.6	-28.0	-1.1	-28.0	0.22	182.23	28.0
6200.0	1.16	107.15	6199.6	-30.1	1.8	-30.1	0.38	176.64	30.1
6285.0	1.30	111.19	6284.6	-30.7	3.5	-30.7	0.19	173.52	30.9



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