



SUR: C-35-18s-35e, 660/N & 1980/W
BHL: C-35-18s-35e, 671/N & 2247/W
API # 30-025-03152

PALADIN OIL & GAS

LEA COUNTY, NEW MEXICO

SVU-35-3 Sidetrack

Well #35-3

D-3840MD

Design: D-3840MD

Standard Survey Report

29 April, 2004





Leam Drilling Systems, Inc.

Survey Report

Database: EDM 2003.5 Single User Db
Company: PALADIN OIL & GAS
Project: LEA COUNTY, NEW MEXICO
Site: SVU-35-3 Sidetrack
Well: Well #35-3
Wellbore: D-3840MD
Design: D-3840MD

Local Co-ordinate Reference: Well Well #35-3
TVD Reference: WELL @ 0.0ft (Original Well Elev)
MD Reference: WELL @ 0.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	LEA COUNTY, NEW MEXICO		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	SVU-35-3 Sidetrack, Lea County, New Mexico			
Site Position:		Northing:	826046.16 ft	Latitude: 33° 15' 59.999" N
From:	Lat/Long	Easting:	810760.28 ft	Longitude: 103° 18' 59.999" W
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence: 0.56 °

Well	Well #35-3			
Well Position	+N/-S	0.0 ft	Northing: 826046.16 ft	Latitude: 33° 15' 59.999" N
	+E/-W	0.0 ft	Easting: 810760.28 ft	Longitude: 103° 18' 59.999" W
Position Uncertainty		ft	Wellhead Elevation: ft	Ground Level: 0.0 ft

Wellbore	D-3840MD			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)
	igrf2000	3/19/2004	8.54	61.42
				Field Strength (nT) 50152

Design	D-3840MD			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth:
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	135.000

Survey Program	Date 4/29/2004		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
100.0	13763.0	Survey #1 (D-3840MD)	Description

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.000	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.22	102.830	100.0	0.0	0.2	0.2	0.22	0.22	0.00
100'MD to 7375'MD - Scientific Keeper Gyro									
200.0	0.21	103.470	200.0	-0.1	0.6	0.5	0.01	-0.01	0.64
300.0	0.23	150.990	300.0	-0.3	0.8	0.8	0.18	0.02	47.52
400.0	0.27	153.050	400.0	-0.7	1.0	1.2	0.04	0.04	2.06
500.0	0.37	178.900	500.0	-1.3	1.1	1.7	0.17	0.10	25.85
600.0	0.41	160.540	600.0	-1.9	1.3	2.3	0.13	0.04	-18.36
700.0	0.42	161.400	700.0	-2.6	1.5	2.9	0.01	0.01	0.86
800.0	0.28	142.170	800.0	-3.1	1.8	3.5	0.18	-0.14	-19.23
900.0	0.44	118.830	900.0	-3.5	2.3	4.1	0.21	0.16	-23.34



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MD Reference: WELL @ 0.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1000.0	0.44	133.840	1000.0	-4.0	2.9	4.8	0.11	0.00	15.01
1100.0	0.43	168.810	1100.0	-4.6	3.2	5.5	0.26	-0.01	34.97
1200.0	0.42	164.470	1200.0	-5.3	3.4	6.2	0.03	-0.01	-4.34
1300.0	0.45	168.460	1300.0	-6.1	3.6	6.8	0.04	0.03	3.99
1400.0	0.43	167.790	1400.0	-6.8	3.7	7.5	0.02	-0.02	-0.67
1500.0	0.32	162.630	1500.0	-7.5	3.9	8.0	0.11	-0.11	-5.16
1600.0	0.25	155.300	1600.0	-7.9	4.1	8.5	0.08	-0.07	-7.33
1700.0	0.20	190.220	1700.0	-8.3	4.1	8.8	0.14	-0.05	34.92
1800.0	0.14	176.460	1800.0	-8.6	4.1	9.0	0.07	-0.06	-13.76
1900.0	0.09	172.990	1900.0	-8.8	4.1	9.1	0.05	-0.05	-3.47
2000.0	0.33	104.260	2000.0	-8.9	4.4	9.4	0.31	0.24	-68.73
2100.0	0.39	111.740	2100.0	-9.1	5.0	10.0	0.08	0.06	7.48
2200.0	0.42	106.590	2200.0	-9.4	5.7	10.6	0.05	0.03	-5.15
2300.0	0.39	114.580	2300.0	-9.6	6.3	11.3	0.06	-0.03	7.99
2400.0	0.40	117.240	2400.0	-9.9	7.0	11.9	0.02	0.01	2.66
2500.0	0.56	99.930	2500.0	-10.2	7.7	12.7	0.21	0.16	-17.31
2600.0	0.57	89.130	2599.9	-10.2	8.7	13.4	0.11	0.01	-10.80
2700.0	0.74	78.250	2699.9	-10.1	9.9	14.1	0.21	0.17	-10.88
2800.0	0.89	63.840	2799.9	-9.6	11.2	14.7	0.25	0.15	-14.41
2900.0	0.89	54.470	2899.9	-8.8	12.5	15.1	0.15	0.00	-9.37
3000.0	1.07	51.580	2999.9	-7.8	13.9	15.3	0.19	0.18	-2.89
3100.0	1.28	47.830	3099.9	-6.5	15.4	15.5	0.22	0.21	-3.75
3200.0	1.10	39.660	3199.9	-5.0	16.9	15.4	0.25	-0.18	-8.17
3300.0	0.98	45.790	3299.8	-3.6	18.1	15.4	0.16	-0.12	6.13
3400.0	0.89	37.780	3399.8	-2.4	19.2	15.3	0.16	-0.09	-8.01
3500.0	0.79	36.340	3499.8	-1.3	20.1	15.1	0.10	-0.10	-1.44
3600.0	1.04	59.760	3599.8	-0.2	21.3	15.2	0.44	0.25	23.42
3700.0	0.93	64.850	3699.8	0.6	22.8	15.7	0.14	-0.11	5.09
3800.0	1.04	82.210	3799.8	1.0	24.4	16.5	0.32	0.11	17.36
3900.0	0.95	81.940	3899.8	1.3	26.1	17.6	0.09	-0.09	-0.27
4000.0	0.63	74.030	3999.8	1.5	27.5	18.4	0.34	-0.32	-7.91
4100.0	0.73	70.000	4099.7	1.9	28.6	18.9	0.11	0.10	-4.03
4200.0	0.58	59.990	4199.7	2.4	29.7	19.3	0.19	-0.15	-10.01
4300.0	0.55	56.600	4299.7	2.9	30.5	19.5	0.04	-0.03	-3.39
4400.0	0.53	61.630	4399.7	3.4	31.3	19.7	0.05	-0.02	5.03
4500.0	0.51	57.800	4499.7	3.8	32.1	20.0	0.04	-0.02	-3.83
4600.0	0.53	57.960	4599.7	4.3	32.8	20.2	0.02	0.02	0.16
4700.0	0.53	50.910	4699.7	4.8	33.6	20.3	0.07	0.00	-7.05
4800.0	0.61	58.440	4799.7	5.4	34.4	20.5	0.11	0.08	7.53
4900.0	0.54	57.970	4899.7	5.9	35.3	20.7	0.07	-0.07	-0.47
5000.0	0.50	59.850	4999.7	6.4	36.0	20.9	0.04	-0.04	1.88
5100.0	0.55	59.580	5099.7	6.9	36.8	21.2	0.05	0.05	-0.27
5200.0	0.57	65.990	5199.7	7.3	37.7	21.5	0.07	0.02	6.41
5300.0	0.61	60.700	5299.7	7.8	38.6	21.8	0.07	0.04	-5.29
5400.0	0.62	63.500	5399.7	8.3	39.6	22.1	0.03	0.01	2.80
5500.0	0.55	67.900	5499.7	8.7	40.5	22.5	0.08	-0.07	4.40
5600.0	0.49	59.440	5599.7	9.1	41.3	22.8	0.10	-0.06	-8.46
5700.0	0.54	62.390	5699.7	9.5	42.1	23.0	0.06	0.05	2.95
5800.0	0.46	61.480	5799.7	10.0	42.9	23.3	0.08	-0.08	-0.91
5900.0	0.45	64.920	5899.7	10.3	43.6	23.5	0.03	-0.01	3.44
6000.0	0.55	62.080	5999.7	10.7	44.4	23.8	0.10	0.10	-2.84
6100.0	0.48	68.270	6099.7	11.1	45.2	24.1	0.09	-0.07	6.19
6200.0	0.44	65.220	6199.7	11.4	45.9	24.4	0.05	-0.04	-3.05
6300.0	0.50	59.230	6299.7	11.8	46.6	24.6	0.08	0.06	-5.99



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North Reference: True
Survey Calculation Method: Minimum Curvature

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6400.0	0.52	60.700	6399.6	12.2	47.4	24.9	0.02	0.02	1.47
6500.0	0.53	69.220	6499.6	12.6	48.2	25.2	0.08	0.01	8.52
6600.0	0.48	66.680	6599.6	12.9	49.0	25.5	0.05	-0.05	-2.54
6700.0	0.56	69.140	6699.6	13.3	49.9	25.9	0.08	0.08	2.46
6800.0	0.52	76.720	6799.6	13.6	50.8	26.3	0.08	-0.04	7.58
6900.0	0.59	77.210	6899.6	13.8	51.7	26.8	0.07	0.07	0.49
7000.0	0.56	72.930	6999.6	14.0	52.7	27.3	0.05	-0.03	-4.28
7100.0	0.59	74.370	7099.6	14.3	53.7	27.8	0.03	0.03	1.44
7200.0	0.56	67.910	7199.6	14.6	54.6	28.3	0.07	-0.03	-6.46
7300.0	0.76	76.660	7299.6	15.0	55.7	28.8	0.22	0.20	8.75
7375.0	0.68	75.390	7374.6	15.2	56.6	29.3	0.11	-0.11	-1.69
7400.0	0.74	81.770	7399.6	15.3	56.9	29.5	0.40	0.24	25.52
7400' to 11770'MD: Gyro Data Gyro									
7600.0	5.11	143.780	7599.3	8.3	63.5	39.0	2.40	2.18	31.00
7800.0	4.77	141.490	7798.6	-5.4	73.9	56.1	0.20	-0.17	-1.14
8000.0	5.91	148.400	7997.7	-20.7	84.5	74.4	0.65	0.57	3.45
8200.0	5.30	141.480	8196.7	-36.7	95.6	93.6	0.45	-0.30	-3.46
8400.0	5.05	139.880	8395.9	-50.7	107.1	111.5	0.14	-0.12	-0.80
8600.0	4.11	157.470	8595.3	-64.0	115.5	126.9	0.84	-0.47	8.79
8800.0	4.42	154.150	8794.7	-77.6	121.6	140.8	0.20	0.15	-1.66
9000.0	3.17	161.780	8994.3	-89.8	126.7	153.0	0.67	-0.62	3.81
9200.0	2.57	152.050	9194.1	-99.0	130.5	162.3	0.39	-0.30	-4.86
9400.0	2.25	140.890	9393.9	-106.0	135.1	170.5	0.28	-0.16	-5.58
9600.0	2.56	130.480	9593.7	-111.9	141.0	178.8	0.27	0.15	-5.20
9796.6	3.67	127.051	9790.0	-118.6	149.3	189.4	0.57	0.56	-1.74
Vertical Point 35-3									
9800.0	3.69	127.010	9793.4	-118.7	149.5	189.6	0.57	0.57	-1.21
10000.0	5.48	130.410	9992.8	-128.8	161.9	205.5	0.90	0.89	1.70
10200.0	3.93	127.390	10192.1	-139.1	174.6	221.8	0.78	-0.77	-1.51
10400.0	2.88	140.100	10391.7	-147.1	183.3	233.6	0.64	-0.52	6.35
10600.0	1.46	209.280	10591.6	-153.2	185.3	239.3	1.36	-0.71	34.59
10800.0	0.23	29.770	10791.6	-155.1	184.2	239.9	0.84	-0.61	-89.75
11000.0	0.61	337.820	10991.6	-153.8	184.0	238.8	0.25	0.19	-25.97
11200.0	1.29	14.480	11191.5	-150.6	184.2	236.7	0.44	0.34	18.33
11400.0	3.57	18.480	11391.4	-142.5	186.7	232.8	1.14	1.14	2.00
11600.0	6.78	19.470	11590.5	-125.5	192.6	224.9	1.61	1.60	0.49
11770.0	7.88	20.020	11759.1	-105.1	200.0	215.7	0.65	0.65	0.32
11965.0	7.50	38.700	11952.4	-82.6	212.5	208.6	1.29	-0.19	9.58
11965'MD to 13718'MD: Leam MWD									
12159.0	7.60	42.600	12144.7	-63.2	229.1	206.7	0.27	0.05	2.01
12254.0	7.90	40.500	12238.8	-53.6	237.6	205.9	0.43	0.32	-2.21
12349.0	8.30	40.800	12332.9	-43.5	246.3	204.9	0.42	0.42	0.32
12445.0	6.20	49.500	12428.1	-34.9	254.8	204.8	2.46	-2.19	9.06
12541.0	5.60	55.400	12523.6	-28.8	262.6	206.1	0.89	-0.62	6.15
12636.0	5.20	52.000	12618.2	-23.6	269.8	207.4	0.54	-0.42	-3.58
12732.0	4.90	57.200	12713.8	-18.7	276.7	208.8	0.57	-0.31	5.42
12827.0	4.20	69.500	12808.5	-15.2	283.3	211.1	1.26	-0.74	12.95
12922.0	3.40	67.800	12903.3	-13.0	289.2	213.7	0.85	-0.84	-1.79
13016.0	1.00	27.600	12997.2	-11.2	292.2	214.5	2.89	-2.55	-42.77
13113.0	1.70	21.900	13094.2	-9.1	293.1	213.7	0.73	0.72	-5.88
13208.0	2.70	28.500	13189.1	-5.8	294.7	212.5	1.08	1.05	6.95
13305.0	2.50	17.300	13286.1	-1.8	296.4	210.9	0.56	-0.21	-11.55
13400.0	3.50	259.200	13381.0	-0.4	294.2	208.3	5.44	1.05	-124.32



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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13496.0	3.30	264.500	13476.8	-1.2	288.5	204.9	0.39	-0.21	5.52
13592.0	6.10	240.200	13572.5	-4.0	281.4	201.8	3.52	2.92	-25.31
13687.0	5.20	245.800	13667.0	-8.3	273.1	198.9	1.11	-0.95	5.89
13718.0	5.40	245.800	13697.9	-9.4	270.4	197.9	0.65	0.65	0.00
13718'MD - Final Leam MWD Survey									
13763.0	5.40	245.800	13742.7	-11.2	266.6	196.4	0.00	0.00	0.00
13763' MD - Projected Total Depth									

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S ft	+E/-W ft	Northing (ft)	Easting (ft)	Latitude	Longitude
Vertical Point 35-3 -Point	0.00	0.00	9790.0	-141.4	141.4	825906.13	810903.07	33° 15' 58.600" N	103° 18' 58.334" W

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
100.0	100.0	0.0	0.2	100'MD to 7375'MD - Scientific Keeper Gyro
7400.0	7399.6	15.3	56.9	7400' to 11770'MD: Gyro Data Gyro
11965.0	11952.4	-82.6	212.5	11965'MD to 13718'MD: Leam MWD
13718.0	13697.9	-9.4	270.4	13718'MD - Final Leam MWD Survey
13763.0	13742.7	-11.2	266.6	13763' MD - Projected Total Depth

Paladin Oil & Gas
SVU 35-3 Sdetrack
Well #35 - 3
Lea County, New Mexico

Leam MWD: from 11770'MD – 13718'MD

This Borehole Survey taken between 4/10/03 and 4/19/03 has been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:
Date: 04-28-04

Name Nora Tucker
Title: Operations Manager