

Scientific Drilling

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DEC 15 2009

HOBBSOCD

SUR: M-15-21s-37e, 990/S & 1100/W
BHL: M-15-21s-37e, 969/S & 954/W
API # 30-025-39557

APACHE CORPORATION

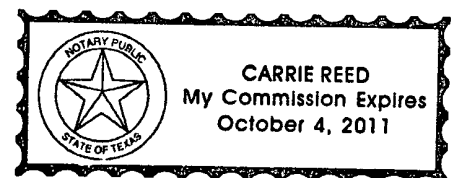
Field: Penrose Skelly
Site: Lea County, NM
Well: Argo #13
Wellpath: DH - Job #32D1109478
Survey: 11/09/09-11/13/09

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

.....*R. Wharton*..... Company Representative

Notorized this date 18th of November, 2009.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific Drilling International

Survey Report

Company: APACHE CORPORATION	Date: 11/18/2009	Time: 13:52:35	Page: 1
Field: Penrose Skelly	Co-ordinate(NE) Reference: Site: Lea County, NM, Grid North		
Site: Lea County, NM	Vertical (TVD) Reference: SITE 0.0		
Well: Argo #13	Section (VS) Reference: Well (0.00N,0.00E,258.99Azi)		
Wellpath: VH - Job #32K1109483	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey: 11/10/09	Start Date: 11/10/2009
Company: Scientific Drilling Internatio	Engineer: Garza w/Gray
Tool: Keeper;Keeper Gyro	Tied-to: From Surface

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.00	0.00	359.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.36	212.67	100.00	0.22	-0.26	-0.17	0.36	0.31	212.67
200.00	0.27	263.62	200.00	0.67	-0.56	-0.57	0.28	0.80	225.93
300.00	0.04	206.06	300.00	0.92	-0.61	-0.82	0.25	1.03	233.33
400.00	0.12	155.78	400.00	0.92	-0.74	-0.80	0.10	1.09	227.08
500.00	0.05	337.83	500.00	0.91	-0.79	-0.77	0.17	1.11	224.05
600.00	0.19	176.76	600.00	0.94	-0.92	-0.78	0.24	1.20	220.15
700.00	0.28	173.18	700.00	0.98	-1.33	-0.74	0.09	1.52	209.04
800.00	0.32	178.27	800.00	1.04	-1.85	-0.70	0.05	1.98	200.73
900.00	0.49	211.56	899.99	1.37	-2.49	-0.92	0.28	2.66	200.16
1000.00	0.65	197.23	999.99	1.93	-3.40	-1.31	0.21	3.64	201.03
1100.00	0.72	229.11	1099.98	2.75	-4.35	-1.95	0.38	4.77	204.14
1150.00	0.51	180.53	1149.98	3.06	-4.78	-2.19	1.08	5.26	204.61



Scientific Drilling International

Survey Report

Company: APACHE CORPORATION Date: 11/18/2009 Time: 13:56:42 Page: 1
Field: Penrose Skelly Co-ordinate(NE) Reference: Site: Lea County, NM, Grid North
Site: Lea County, NM Vertical (TVD) Reference: SITE 0.0
Well: Argo #13 Section (VS) Reference: Well (0.00N,0.00E,258.99Azi)
Wellpath: DH - Job #32D1109478 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: 11/09/09-11/13/09 Start Date: 11/09/2009
Company: Scientific Drilling Internatio Engineer: Lopez/Baldwin/Baldwin
Tool: MWD;MWD Tied-to: From: Definitive Path

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
1150.00	0.51	180.53	1149.98	3.06	-4.78	-2.19	0.00	5.26	204.61
1306.00	0.78	178.94	1305.97	3.38	-6.54	-2.18	0.17	6.89	198.42
1369.00	0.68	157.82	1368.96	3.39	-7.31	-2.03	0.45	7.59	195.50
1433.00	0.94	163.36	1432.96	3.26	-8.17	-1.73	0.42	8.35	191.99
1496.00	0.94	163.52	1495.95	3.16	-9.16	-1.44	0.00	9.27	188.93
1560.00	0.98	162.28	1559.94	3.05	-10.18	-1.12	0.07	10.24	186.30
1623.00	0.78	165.05	1622.93	2.95	-11.11	-0.85	0.32	11.14	184.37
1686.00	0.85	171.22	1685.93	2.94	-11.98	-0.67	0.18	12.00	183.19
1750.00	0.71	176.13	1749.92	3.01	-12.85	-0.57	0.24	12.86	182.53
1814.00	0.76	153.94	1813.91	2.95	-13.63	-0.35	0.45	13.63	181.49
1877.00	0.62	131.20	1876.91	2.63	-14.23	0.09	0.48	14.23	179.66
1940.00	0.93	133.48	1939.90	2.13	-14.80	0.71	0.49	14.82	177.24
2004.00	0.88	127.64	2003.90	1.50	-15.46	1.48	0.16	15.53	174.54
2067.00	1.14	114.76	2066.89	0.67	-16.02	2.43	0.55	16.20	171.37
2131.00	1.12	151.92	2130.87	-0.03	-16.84	3.30	1.13	17.16	168.90
2194.00	1.21	170.03	2193.86	-0.20	-18.04	3.71	0.60	18.41	168.38
2258.00	1.29	179.35	2257.85	-0.05	-19.42	3.83	0.34	19.80	168.83
2322.00	1.26	182.22	2321.83	0.24	-20.84	3.81	0.11	21.19	169.63
2385.00	1.62	218.97	2384.81	1.08	-22.23	3.23	1.54	22.46	171.74
2448.00	2.50	243.78	2447.77	3.08	-23.53	1.44	1.96	23.57	176.51
2511.00	3.48	255.27	2510.69	6.32	-24.62	-1.65	1.82	24.68	183.83
2575.00	4.66	263.07	2574.52	10.85	-25.43	-6.11	2.03	26.15	193.50
2638.00	5.65	265.98	2637.27	16.48	-25.96	-11.74	1.62	28.49	204.34
2702.00	6.55	266.26	2700.91	23.23	-26.41	-18.53	1.41	32.26	215.04
2765.00	6.92	267.58	2763.47	30.55	-26.81	-25.90	0.64	37.28	224.02
2828.00	6.83	268.29	2826.02	38.00	-27.08	-33.44	0.20	43.03	231.00
2891.00	6.53	267.34	2888.59	45.24	-27.36	-40.76	0.51	49.09	236.13
2955.00	7.16	268.93	2952.13	52.77	-27.60	-48.39	1.03	55.71	240.30
3018.00	8.09	268.07	3014.58	61.01	-27.83	-56.74	1.49	63.20	243.88
3081.00	8.29	269.64	3076.93	69.85	-28.00	-65.71	0.48	71.43	246.92
3144.00	8.13	269.67	3139.29	78.69	-28.06	-74.71	0.25	79.80	249.42
3208.00	7.99	269.13	3202.66	87.52	-28.15	-83.68	0.25	88.29	251.41
3272.00	7.75	270.45	3266.05	96.13	-28.18	-92.45	0.47	96.65	253.04
3335.00	7.46	270.96	3328.50	104.29	-28.08	-100.78	0.47	104.62	254.43
3399.00	7.16	271.47	3391.98	112.25	-27.91	-108.92	0.48	112.44	255.63
3462.00	6.44	272.53	3454.53	119.52	-27.65	-116.38	1.16	119.62	256.63
3526.00	5.40	270.63	3518.19	125.96	-27.46	-122.98	1.65	126.00	257.41
3589.00	3.96	270.61	3580.98	130.99	-27.41	-128.12	2.29	131.01	257.93
3653.00	2.68	269.71	3644.87	134.63	-27.39	-131.82	2.00	134.64	258.26
3716.00	1.42	263.63	3707.83	136.85	-27.48	-134.07	2.03	136.86	258.41
3779.00	1.03	260.11	3770.82	138.20	-27.67	-135.40	0.63	138.20	258.45
3843.00	1.17	258.76	3834.80	139.42	-27.89	-136.61	0.22	139.43	258.46
3906.00	1.22	258.68	3897.79	140.74	-28.15	-137.90	0.08	140.74	258.46
3970.00	1.15	254.68	3961.78	142.06	-28.46	-139.19	0.17	142.07	258.45
4034.00	1.27	262.98	4025.76	143.41	-28.71	-140.51	0.33	143.41	258.45
4098.00	1.25	311.13	4089.75	144.54	-28.34	-141.74	1.61	144.55	258.69
4161.00	1.49	325.49	4152.73	145.29	-27.21	-142.72	0.66	145.29	259.21
4225.00	1.63	332.42	4216.71	145.88	-25.72	-143.62	0.37	145.90	259.85
4288.00	1.61	335.30	4279.68	146.35	-24.12	-144.40	0.13	146.40	260.52



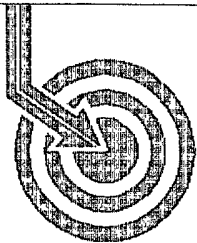
Scientific Drilling International

Survey Report

Company:	APACHE CORPORATION	Date:	11/18/2009	Time:	13:56:42	Page:	2
Field:	Penrose Skelly	Co-ordinate(NE) Reference:	Site: Lea County, NM, Grid North				
Site:	Lea County, NM	Vertical (TVD) Reference:	SITE 0.0				
Well:	Argo #13	Section (VS) Reference:	Well (0.00N,0.00E,258.99Azi)				
Wellpath:	DH - Job #32D1109478	Survey Calculation Method:	Minimum Curvature				Db: Sybase

Survey

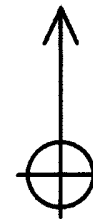
MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
4348.00	1.56	334.67	4339.66	146.75	-22.62	-145.10	0.09	146.85	261.14



Scientific Drilling

Field: Penrose Skelly
Site: Lea County, NM
Well: Argo #13
Wellpath: DH - Job #32D1109478
Survey: 11/09/09-11/13/09
West(-)/East(+) [20ft/in]

G/T/M



Azimuths to Grid North
True North: 0.00°
Magnetic North: 0.00°

Magnetic Field
Strength: 0nT
Dip Angle: 0.00°
Date: 11/18/2009
Model: igrf2000

uth(-)/North(+) [20ft/in]

