

Results of Directional Survey

API number:	30-025-40693		
OGRID:		Operator:	APACHE CORP
		Property:	LUSK 34 FEDERAL # 2H

surface	ULSTR:	C	34	T	19S	R	32E
				330	FNL	1715	FWL

BH Loc	ULSTR:	N	34	T	19S	R	32E
14055	MD	9607.1	TVD	345	FSL	1999	FWL
				4935	FNL		

Top Perf/OH	ULSTR:	C	34	T	19S	R	32E
10095	MD	9573.6	TVD	984	FNL	1764	FWL

Bot Perf/OH	ULSTR:	N	34	T	19S	R	32E
13948	MD	9600.3	TVD	452	FSL	1991	FWL
				4828	FNL		

	MD	N/S	E/W	VD
	10089	-648.10	48.35	9573.63
TOP PERFS/OH	10095	-654.08	48.80	9573.61
	10184	-742.83	55.47	9573.38
	13905	-4455.31	272.51	9597.79
BOT PERFS/OH	13948	-4498.10	275.88	9600.34
	14001	-4550.84	280.03	9603.49

NEXT TO LAST	14009	-4558.80	280.68	9604.01
LAST READING	14055	-4604.56	284.12	9607.14
TD	14055	-4604.56	284.12	9607.14

Surface Location	330	FN	1715	FW
Projected BHL	4935	FN	1999	FW
Location of				
Top Perfs/OH	984	FN	1764	FW
Bottom Perfs/OH	4828	FN	1991	FW

SUMMARY of Subsurface Locations

Surface Location	C-34-19S-32E	330	FN	1715	FW	Vert. Depth
Top Perfs/OH	C-34-19S-32E	984	FN	1764	FW	9573.61
Bottom Perfs/OH	N-34-19S-32E	4828	FN	1991	FW	9600.34
Projected TD	N-34-19S-32E	4935	FN	1999	FW	9607.14

JUN 11 2013

OPERATOR
WELL/LEASE
COUNTY

Apache Corporation AP1# 30-025-40693
Lusk 34 Federal 2H 30' FNL + 1715' FWL WL: C 34-198-32E
Lea

STATE OF NEW MEXICO
DEVIATION REPORT

240	3/8
500	0.51
762	0.73
1,285	0.85
1,757	0.60
2,423	0.73
3,175	1.24
3,319	1.25
3,538	0.74
3,788	0.57
4,070	1.45
4,200	1.23
4,370	0.88
4,490	0.25
4,549	0.60
4,711	0.30
4,901	0.40
5,092	0.40
5,282	0.30
5,472	0.40
5,663	0.30
6,044	0.30
6,272	0.20
6,414	0.10
6,605	0.30
6,701	0.30
6,795	0.00
6,985	0.40
7,176	0.40
7,371	0.20
7,532	0.40
7,777	1.40
7,908	1.00
7,967	0.90
8,157	1.40
8,253	3.00
8,284	2.70
8,382	2.80
8,414	3 1/9

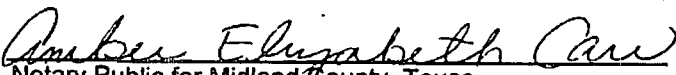
BY: 

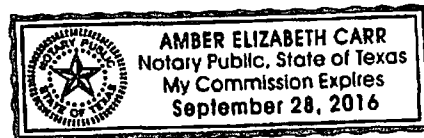
STATE OF TEXAS

COUNTY OF MIDLAND

The foregoing instrument was acknowledged before me on
Steve Moore on behalf of Patterson-UTI Drilling Company LLC.

4/30/13, by


Notary Public for Midland County, Texas
My Commission Expires:



Apache Corporation

Lea County, NM

Lusk 34 Federal 2H

Sec. 34, T19S - R32E

Job # 1210295

Survey: Phoenix MWD Surveys

Survey Report

19 October, 2012

RECEIVED

MAY 1 0 2013

HOBBS OCD



Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Site Lusk 34 Federal 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 3579.00usft (Original Well Elev)
Site:	Lusk 34 Federal 2H	MD Reference:	WELL @ 3579.00usft (Original Well Elev)
Well:	Sec. 34, T19S - R32E	North Reference:	Grid
Wellbore:	Job # 1210295	Survey Calculation Method:	Minimum Curvature
Design:	Job # 1210295	Database:	GCR DB v5000

Project		Lea County, NM	
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Lusk 34 Federal 2H			
Site Position:		Northing:	590,933.70 usft	Latitude:	32° 37' 23.5360 N
From:	Map	Easting:	718,772.00 usft	Longitude:	103° 45' 25.2497 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.31 °

Well	Sec. 34, T19S - R32E					
Well Position	+N/-S	0.00 usft	Northing:	590,933.70 usft	Latitude:	32° 37' 23.5360 N
	+E/-W	0.00 usft	Easting:	718,772.00 usft	Longitude:	103° 45' 25.2497 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,569.00 usft

Wellbore	Job # 1210295				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	04/09/12	7.60	60.50	48,754

Design		Job # 1210295		
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	176.46

Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Site Lusk 34 Federal 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 3579.00usft (Original Well Elev)
Site:	Lusk 34 Federal 2H	MD Reference:	WELL @ 3579.00usft (Original Well Elev)
Well:	Sec. 34, T19S - R32E	North Reference:	Grid
Wellbore:	Job # 1210295	Survey Calculation Method:	Minimum Curvature
Design:	Job # 1210295	Database:	GCR DB v5000

Survey Program		Date	10/19/12		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	9,000.00	Gyro Surveys (Job # 1210295)	MWD	MWD - Standard	
9,062.00	14,055.00	Phoenix MWD Surveys (Job # 1210295)	MWD	MWD - Standard	

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
9,000.00	0.92	232.94	5,419.12	8,998.12	43.95	15.54	-42.90	0.00	590,977.65	718,787.54
Tie on From Gyro data @ 9000' MD'										
9,062.00	1.00	233.60	5,481.11	9,060.11	43.33	14.71	-42.34	0.13	590,977.03	718,786.71
First Phoenix MWD Surveys @ 9062' MD										
9,094.00	0.70	237.40	5,513.11	9,092.11	43.06	14.32	-42.09	0.95	590,976.76	718,786.32
9,116.00	2.00	172.60	5,535.10	9,114.10	42.60	14.26	-41.64	8.25	590,976.30	718,786.26
9,147.00	2.90	199.60	5,566.07	9,145.07	41.33	14.07	-40.38	4.65	590,975.03	718,786.07
9,179.00	4.10	193.20	5,598.01	9,177.01	39.45	13.53	-38.54	3.94	590,973.15	718,785.53
9,211.00	6.00	185.70	5,629.89	9,208.89	36.67	13.10	-35.79	6.27	590,970.37	718,785.10
9,242.00	8.60	182.00	5,660.63	9,239.63	32.74	12.86	-31.89	8.52	590,966.44	718,784.86
9,273.00	12.50	180.70	5,691.10	9,270.10	27.07	12.74	-26.23	12.60	590,960.77	718,784.74
9,305.00	17.70	178.50	5,721.99	9,300.99	18.74	12.83	-17.91	16.35	590,952.44	718,784.83
9,337.00	23.30	178.60	5,751.95	9,330.95	7.54	13.11	-6.72	17.50	590,941.24	718,785.11
9,368.00	29.50	179.30	5,779.70	9,358.70	-6.23	13.35	7.05	20.02	590,927.47	718,785.35
9,400.00	33.50	179.40	5,806.98	9,385.98	-22.95	13.54	23.74	12.50	590,910.75	718,785.54
9,432.00	37.30	178.90	5,833.06	9,412.06	-41.48	13.82	42.25	11.91	590,892.22	718,785.82
9,463.00	41.70	178.40	5,856.98	9,435.98	-61.19	14.29	61.95	14.23	590,872.51	718,786.29
9,495.00	46.40	177.80	5,879.97	9,458.97	-83.42	15.03	84.19	14.75	590,850.28	718,787.03
9,527.00	51.20	177.10	5,901.04	9,480.04	-107.46	16.11	108.25	15.09	590,826.24	718,788.11
9,558.00	56.40	176.20	5,919.34	9,498.34	-132.43	17.57	133.26	16.94	590,801.27	718,789.57
9,590.00	61.90	174.90	5,935.75	9,514.75	-159.81	19.71	160.72	17.54	590,773.89	718,791.71
9,622.00	65.40	174.60	5,949.95	9,528.95	-188.36	22.34	189.38	10.97	590,745.34	718,794.34

Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Site Lusk 34 Federal 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 3579.00usft (Original Well Elev)
Site:	Lusk 34 Federal 2H	MD Reference:	WELL @ 3579.00usft (Original Well Elev)
Well:	Sec. 34, T19S - R32E	North Reference:	Grid
Wellbore:	Job # 1210295	Survey Calculation Method:	Minimum Curvature
Design:	Job # 1210295	Database:	GCR DB v5000

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
9,654.00	69.40	175.50	5,962.24	9,541.24	-217.78	24.88	218.90	12.77	590,715.92	718,796.88
9,685.00	72.30	176.40	5,972.41	9,551.41	-246.99	26.95	248.18	9.75	590,686.71	718,798.95
9,717.00	75.50	176.80	5,981.28	9,560.28	-277.68	28.77	278.92	10.07	590,656.02	718,800.77
9,749.00	80.60	177.10	5,987.91	9,566.91	-308.93	30.44	310.22	15.96	590,624.77	718,802.44
9,772.00	84.40	178.00	5,990.91	9,569.91	-331.71	31.41	333.01	16.97	590,601.99	718,803.41
9,804.00	87.90	178.60	5,993.06	9,572.06	-363.62	32.36	364.92	11.10	590,570.08	718,804.36
9,899.00	89.80	177.50	5,994.96	9,573.96	-458.54	35.59	459.86	2.31	590,475.16	718,807.59
9,994.00	90.20	175.70	5,994.96	9,573.96	-553.36	41.22	554.85	1.94	590,380.34	718,813.22
10,089.00	90.20	175.70	5,994.63	9,573.63	-648.10	48.35	649.85	0.00	590,285.60	718,820.35
10,184.00	90.10	175.70	5,994.38	9,573.38	-742.83	55.47	744.84	0.11	590,190.87	718,827.47
10,280.00	90.00	175.60	5,994.30	9,573.30	-838.55	62.75	840.83	0.15	590,095.15	718,834.75
10,374.00	89.70	175.90	5,994.55	9,573.55	-932.29	69.72	934.82	0.45	590,001.41	718,841.72
10,470.00	89.20	176.00	5,995.47	9,574.47	-1,028.05	76.50	1,030.81	0.53	589,905.65	718,848.50
10,565.00	89.00	176.40	5,996.96	9,575.96	-1,122.83	82.79	1,125.80	0.47	589,810.87	718,854.79
10,660.00	89.50	175.60	5,998.20	9,577.20	-1,217.59	89.42	1,220.79	0.99	589,716.11	718,861.42
10,755.00	89.40	175.70	5,999.12	9,578.12	-1,312.31	96.62	1,315.77	0.15	589,621.39	718,868.62
10,850.00	90.90	176.10	5,998.87	9,577.87	-1,407.06	103.41	1,410.76	1.63	589,526.64	718,875.41
10,946.00	90.70	175.60	5,997.53	9,576.53	-1,502.80	110.36	1,506.75	0.56	589,430.90	718,882.36
11,041.00	90.70	175.80	5,996.37	9,575.37	-1,597.53	117.48	1,601.73	0.21	589,336.17	718,889.48
11,136.00	90.00	175.60	5,995.79	9,574.79	-1,692.26	124.61	1,696.72	0.77	589,241.44	718,896.61
11,231.00	89.70	177.10	5,996.03	9,575.03	-1,787.06	130.65	1,791.72	1.61	589,146.64	718,902.65
11,326.00	90.00	177.10	5,996.28	9,575.28	-1,881.94	135.46	1,886.71	0.32	589,051.76	718,907.46
11,421.00	89.90	176.50	5,996.37	9,575.37	-1,976.79	140.76	1,981.71	0.64	588,956.91	718,912.76
11,517.00	89.60	176.20	5,996.79	9,575.79	-2,072.60	146.88	2,077.71	0.44	588,861.10	718,918.88
11,612.00	87.80	176.30	5,998.94	9,577.94	-2,167.36	153.09	2,172.68	1.90	588,766.34	718,925.09
11,707.00	87.20	175.80	6,003.08	9,582.08	-2,262.05	159.62	2,267.59	0.82	588,671.65	718,931.62
11,802.00	87.10	177.10	6,007.81	9,586.81	-2,356.75	165.50	2,362.47	1.37	588,576.95	718,937.50

Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Site Lusk 34 Federal 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 3579.00usft (Original Well Elev)
Site:	Lusk 34 Federal 2H	MD Reference:	WELL @ 3579.00usft (Original Well Elev)
Well:	Sec. 34, T19S - R32E	North Reference:	Grid
Wellbore:	Job # 1210295	Survey Calculation Method:	Minimum Curvature
Design:	Job # 1210295	Database:	GCR DB v5000

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
11,897.00	87.00	177.10	6,012.70	9,591.70	-2,451.50	170.30	2,457.34	0.11	588,482.20	718,942.30
11,992.00	86.90	177.80	6,017.75	9,596.75	-2,546.27	174.52	2,552.19	0.74	588,387.43	718,946.52
12,088.00	88.40	178.40	6,021.69	9,600.69	-2,642.13	177.70	2,648.06	1.68	588,291.57	718,949.70
12,183.00	90.40	178.60	6,022.68	9,601.68	-2,737.09	180.19	2,742.99	2.12	588,196.61	718,952.19
12,278.00	89.90	178.90	6,022.43	9,601.43	-2,832.07	182.26	2,837.92	0.61	588,101.63	718,954.26
12,373.00	89.30	179.30	6,023.10	9,602.10	-2,927.05	183.75	2,932.81	0.76	588,006.65	718,955.75
12,469.00	89.80	178.30	6,023.85	9,602.85	-3,023.03	185.76	3,028.73	1.16	587,910.67	718,957.76
12,564.00	88.70	178.20	6,025.10	9,604.10	-3,117.97	188.66	3,123.67	1.16	587,815.73	718,960.66
12,659.00	89.90	178.70	6,026.26	9,605.26	-3,212.93	191.23	3,218.61	1.37	587,720.77	718,963.23
12,754.00	89.70	179.00	6,026.59	9,605.59	-3,307.91	193.14	3,313.52	0.38	587,625.79	718,965.14
12,849.00	89.60	178.60	6,027.17	9,606.17	-3,402.89	195.13	3,408.44	0.43	587,530.81	718,967.13
12,945.00	90.80	177.10	6,026.83	9,605.83	-3,498.81	198.73	3,504.41	2.00	587,434.89	718,970.73
13,049.00	92.30	174.80	6,024.02	9,603.02	-3,602.51	206.07	3,608.36	2.64	587,331.19	718,978.07
13,144.00	93.40	175.00	6,019.30	9,598.30	-3,697.01	214.50	3,703.20	1.18	587,236.69	718,986.50
13,239.00	92.90	175.20	6,014.08	9,593.08	-3,791.52	222.61	3,798.03	0.57	587,142.18	718,994.61
13,334.00	92.00	175.70	6,010.01	9,589.01	-3,886.13	230.14	3,892.93	1.08	587,047.57	719,002.14
13,429.00	90.70	175.50	6,007.78	9,586.78	-3,980.82	237.42	3,987.89	1.38	586,952.88	719,009.42
13,525.00	89.80	175.60	6,007.36	9,586.36	-4,076.53	244.87	4,083.87	0.94	586,857.17	719,016.87
13,620.00	89.10	175.60	6,008.27	9,587.27	-4,171.25	252.16	4,178.86	0.74	586,762.45	719,024.16
13,715.00	88.10	175.90	6,010.59	9,589.59	-4,265.96	259.20	4,273.82	1.10	586,667.74	719,031.20
13,818.00	87.50	176.10	6,014.54	9,593.54	-4,368.63	266.38	4,376.74	0.61	586,565.07	719,038.38
13,905.00	86.90	175.80	6,018.79	9,597.79	-4,455.31	272.51	4,463.63	0.77	586,478.39	719,044.51
14,001.00	86.30	175.20	6,024.49	9,603.49	-4,550.84	280.03	4,559.45	0.88	586,382.86	719,052.03
14,009.00	86.20	175.50	6,025.01	9,604.01	-4,558.80	280.68	4,567.43	3.95	586,374.90	719,052.68
14,055.00	86.00	175.90	6,028.14	9,607.14	-4,604.56	284.12	4,613.32	0.97	586,329.14	719,056.12

Projection to TD, 14055'

Survey Report

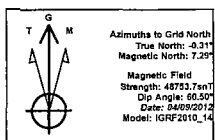


Company:	Apache Corporation	Local Co-ordinate Reference:	Site Lusk 34 Federal 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 3579.00usft (Original Well Elev)
Site:	Lusk 34 Federal 2H	MD Reference:	WELL @ 3579.00usft (Original Well Elev)
Well:	Sec. 34, T19S - R32E	North Reference:	Grid
Wellbore:	Job # 1210295	Survey Calculation Method:	Minimum Curvature
Design:	Job # 1210295	Database:	GCR DB v5000

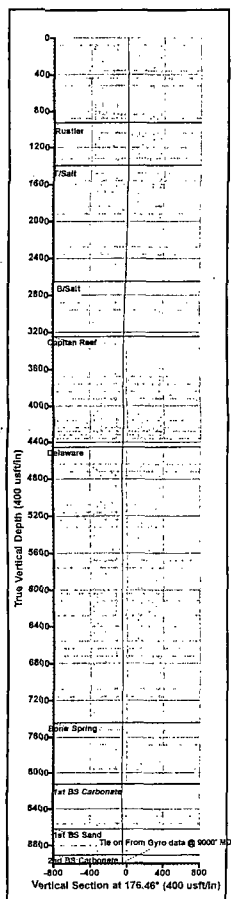
Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,000.00	8,998.12	43.95	15.54	Tie on From Gyro data @ 9000' MD'
9,062.00	9,060.11	43.33	14.71	First Phoenix MWD Surveys @ 9062' MD
14,055.00	9,607.14	-4,604.56	284.12	Projection to TD, 14055'

Apache Corporation

Project: Lea County, NM
Site: Lusk 34 Federal 2H
Well: Sec. 34, T19S - R32E
Wellbore: Job # 1210295
Plan: Plan 6 10-15-2012

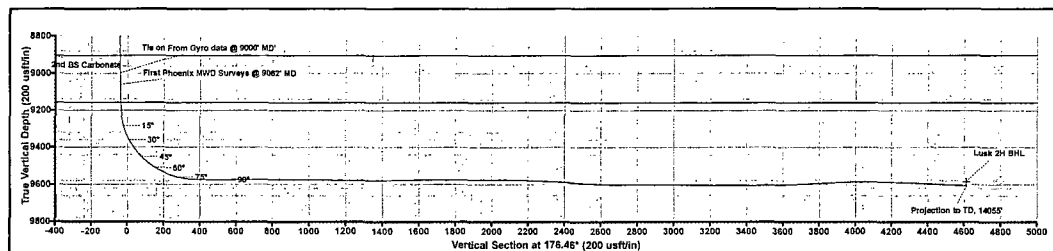
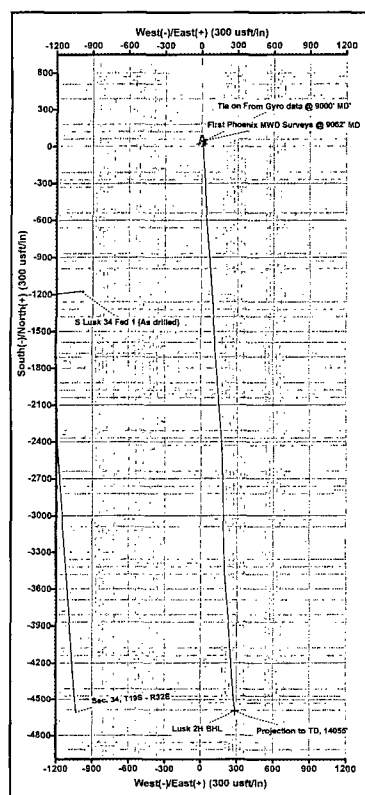
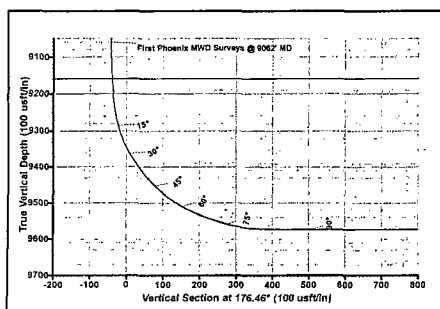


SECTION DETAILS									
MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	
12805.00	89.65	178.79	9605.88	-3359.90	194.12	0.00	0.00	3384.47	
12919.81	93.00	178.00	9603.23	-3473.62	197.34	3.00	-13.17	3479.17	
13189.61	93.00	178.00	9589.11	-3742.88	206.75	0.00	0.00	3748.50	
13348.48	90.00	174.67	9585.00	-3899.34	216.77	2.88	-131.87	3905.28	



WELL DETAILS: Sec. 34, T19S - R32E			
Northing	Easting	Ground Level: 3569.00 Latitude	Longitude
590933.70	718772.00	32° 37' 23.5360 N	103° 45' 25.2497 W

ANNOTATIONS		
TVD	MD	Annotation
9605.88	12805.00	Tie on point Build @ 3°/100°
9604.23	12898.33	Hold 53° Inc for 269.80'
9590.23	13168.13	Build @ 3°/100°
9585.14	13317.31	Hold 90° Inc to BHL
9585.00	14051.00	TD @ 14051.65' MD



José Hernandez