



PHOENIX
TECHNOLOGY SERVICES

30-015-40470

Apache Corporation

Eddy County, NM (Nad27)

NFE Federal

NFE Federal 27H

Job # 1210329

Survey: Phoenix MWD Surveys

Approach Energy Survey Report

22 November, 2012

Apache
EXPLORING WHAT'S POSSIBLE



Approach Energy Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well NFE Federal 27H
Project:	Eddy County, NM (Nad27)	TVD Reference:	WELL @ 3741.00usft (Basic 44)
Site:	NFE Federal	MD Reference:	WELL @ 3741.00usft (Basic 44)
Well:	NFE Federal 27H	North Reference:	Grid
Wellbore:	Job # 1210329	Survey Calculation Method:	Minimum Curvature
Design:	Job # 1210329	Database:	Compass5000

Project: Eddy County, NM (Nad27)			
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: NFE Federal					
Site Position:		Northing:	673,264.70 usft	Latitude:	32° 51' 0.4904 N
From:	Map	Easting:	633,303.50 usft	Longitude:	103° 53' 57.3497 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.24 °

Well		NFE Federal 27H				
Well Position	+N/-S	0.00 usft	Northing:	673,394.69 usft	Latitude:	32° 51' 1.7767 N
	+E/-W	0.00 usft	Easting:	633,303.50 usft	Longitude:	103° 53' 57.3434 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,727.00 usft	

Wellbore		Job # 1210329			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	10/12/12	7.62	60.68	48,822

Design		Job # 1210329			
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	89.60	

Survey Program		Date	11/22/12		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
497.00	10,415.00	Phoenix MWD Surveys (Job # 1210329)	MWD	MWD - Standard	



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TVD Reference: WELL @ 3741.00usft (Basic 44)
MD Reference: WELL @ 3741.00usft (Basic 44)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass5000

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)	
0.00	0.00	0.00	3,741.00	0.00	0.00	0.00	0.00	0.00	0.00	673,394.69	633,303.50
497.00	2.10	249.90	3,244.11	496.89	-3.13	-8.55	-8.57	0.42	673,391.56	633,294.95	
First Phoenix MWD Survey 497 MD											
612.00	1.40	260.70	3,129.17	611.83	-4.08	-11.92	-11.95	0.67	673,390.61	633,291.58	
696.00	1.20	274.70	3,045.19	695.81	-4.17	-13.81	-13.84	0.45	673,390.52	633,289.69	
780.00	0.90	313.70	2,961.20	779.80	-3.65	-15.16	-15.19	0.90	673,391.05	633,288.34	
863.00	1.50	358.50	2,878.22	862.78	-2.11	-15.66	-15.67	1.29	673,392.58	633,287.84	
947.00	2.10	26.50	2,794.26	946.74	0.37	-15.00	-15.00	1.25	673,395.06	633,288.50	
1,030.00	2.40	32.80	2,711.32	1,029.68	3.19	-13.38	-13.36	0.47	673,397.88	633,290.12	
1,114.00	3.00	41.10	2,627.41	1,113.59	6.32	-10.98	-10.94	0.85	673,401.02	633,292.52	
1,197.00	3.20	47.00	2,544.54	1,196.46	9.54	-7.86	-7.80	0.45	673,404.23	633,295.64	
1,280.00	2.40	58.10	2,461.63	1,279.37	12.04	-4.69	-4.61	1.16	673,406.73	633,298.81	
1,363.00	1.40	66.60	2,378.68	1,362.32	13.36	-2.29	-2.19	1.25	673,408.05	633,301.21	
1,447.00	0.80	76.70	2,294.70	1,446.30	13.90	-0.77	-0.68	0.75	673,408.59	633,302.73	
1,531.00	1.00	79.10	2,210.71	1,530.29	14.17	0.52	0.62	0.24	673,408.87	633,304.02	
1,614.00	1.20	84.60	2,127.72	1,613.28	14.39	2.09	2.19	0.27	673,409.09	633,305.59	
1,698.00	1.40	87.60	2,043.74	1,697.26	14.52	3.99	4.09	0.25	673,409.21	633,307.49	
1,781.00	1.60	84.90	1,960.77	1,780.23	14.66	6.16	6.26	0.26	673,409.36	633,309.66	
1,865.00	1.20	94.10	1,876.80	1,864.20	14.71	8.21	8.31	0.54	673,409.40	633,311.71	
1,948.00	1.10	108.00	1,793.81	1,947.19	14.40	9.83	9.93	0.36	673,409.09	633,313.33	
2,032.00	1.00	118.00	1,709.83	2,031.17	13.80	11.24	11.34	0.25	673,408.50	633,314.74	
2,115.00	0.80	133.40	1,626.84	2,114.16	13.07	12.31	12.40	0.38	673,407.76	633,315.81	
2,199.00	0.50	146.60	1,542.84	2,198.16	12.36	12.93	13.02	0.40	673,407.05	633,316.43	
2,283.00	0.90	203.00	1,458.85	2,282.15	11.44	12.88	12.96	0.89	673,406.14	633,316.38	
2,366.00	1.00	217.60	1,375.86	2,365.14	10.27	12.18	12.25	0.31	673,404.96	633,315.68	
2,450.00	0.80	232.20	1,291.87	2,449.13	9.33	11.27	11.33	0.36	673,404.02	633,314.77	
2,533.00	0.80	231.50	1,208.88	2,532.12	8.61	10.36	10.42	0.01	673,403.31	633,313.86	



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Wellbore: Job # 1210329
Design: Job # 1210329

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TVD Reference: WELL @ 3741.00usft (Basic 44)
MD Reference: WELL @ 3741.00usft (Basic 44)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass5000

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)	
2,617.00	1.00	240.50	1,124.89	2,616.11	7.89	9.26	9.32	0.29	673,402.58	633,312.76	
2,701.00	1.00	244.80	1,040.90	2,700.10	7.22	7.96	8.01	0.09	673,401.91	633,311.46	
2,784.00	1.30	248.10	957.92	2,783.08	6.56	6.43	6.48	0.37	673,401.25	633,309.93	
2,868.00	1.10	263.60	873.94	2,867.06	6.11	4.75	4.79	0.45	673,400.80	633,308.25	
2,952.00	1.20	282.20	789.95	2,951.05	6.21	3.09	3.13	0.46	673,400.90	633,306.59	
3,036.00	1.10	320.50	705.97	3,035.03	7.01	1.71	1.76	0.91	673,401.71	633,305.21	
3,119.00	1.60	4.60	622.99	3,118.01	8.78	1.30	1.36	1.34	673,403.48	633,304.80	
3,203.00	2.10	12.10	539.04	3,201.96	11.46	1.72	1.80	0.66	673,406.15	633,305.22	
3,326.00	2.40	16.00	416.13	3,324.87	16.14	2.90	3.01	0.27	673,410.83	633,306.40	
3,410.00	1.00	10.60	332.17	3,408.83	18.55	3.52	3.65	1.68	673,413.24	633,307.02	
3,493.00	1.20	221.40	249.18	3,491.82	18.61	3.08	3.21	2.56	673,413.30	633,306.58	
3,577.00	1.00	205.70	165.19	3,575.81	17.29	2.18	2.30	0.43	673,411.98	633,305.68	
3,660.00	1.30	208.40	82.21	3,658.79	15.81	1.41	1.52	0.37	673,410.50	633,304.91	
3,744.00	1.20	215.20	-1.77	3,742.77	14.25	0.45	0.55	0.21	673,408.94	633,303.95	
3,827.00	1.20	208.50	-84.75	3,825.75	12.78	-0.46	-0.37	0.17	673,407.47	633,303.04	
3,911.00	1.00	215.50	-168.74	3,909.74	11.41	-1.31	-1.23	0.29	673,406.10	633,302.19	
3,995.00	1.00	217.40	-252.73	3,993.73	10.23	-2.18	-2.11	0.04	673,404.92	633,301.32	
4,078.00	1.10	210.90	-335.71	4,076.71	8.97	-3.03	-2.96	0.19	673,403.66	633,300.47	
4,161.00	0.80	210.90	-418.70	4,159.70	7.79	-3.73	-3.68	0.36	673,402.48	633,299.77	
4,245.00	1.00	132.10	-502.69	4,243.69	6.79	-3.49	-3.44	1.37	673,401.49	633,300.01	
4,328.00	1.40	123.50	-585.67	4,326.67	5.75	-2.11	-2.07	0.53	673,400.44	633,301.39	
4,412.00	1.00	127.60	-669.66	4,410.66	4.73	-0.67	-0.64	0.49	673,399.43	633,302.83	
4,496.00	1.30	124.60	-753.64	4,494.64	3.75	0.69	0.72	0.36	673,398.44	633,304.19	
4,579.00	1.20	130.00	-836.62	4,577.62	2.65	2.13	2.15	0.19	673,397.35	633,305.63	
4,663.00	1.00	135.40	-920.60	4,661.60	1.57	3.32	3.33	0.27	673,396.26	633,306.82	
4,747.00	0.90	126.70	-1,004.59	4,745.59	0.65	4.37	4.37	0.21	673,395.34	633,307.87	
4,831.00	0.90	136.70	-1,088.58	4,829.58	-0.23	5.35	5.35	0.19	673,394.47	633,308.85	



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Survey Calculation Method:
Database:
Well: NFE Federal 27H
WELL @ 3741.00usft (Basic 44)
WELL @ 3741.00usft (Basic 44)
Grid
Minimum Curvature
Compass5000

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)	
4,915.00	0.90	129.70	-1,172.57	4,913.57	-1.13	6.31	6.30	0.13	673,393.57	633,309.81	
4,998.00	0.10	291.30	-1,255.57	4,996.57	-1.52	6.74	6.73	1.20	673,393.18	633,310.24	
5,081.00	0.50	299.30	-1,338.57	5,079.57	-1.31	6.36	6.35	0.48	673,393.38	633,309.86	
5,165.00	0.80	293.70	-1,422.56	5,163.56	-0.90	5.50	5.50	0.36	673,393.79	633,309.00	
5,249.00	0.60	295.00	-1,506.56	5,247.56	-0.48	4.57	4.56	0.24	673,394.22	633,308.07	
5,272.00	0.90	295.90	-1,529.55	5,270.55	-0.35	4.29	4.29	1.31	673,394.35	633,307.79	
5,356.00	0.60	274.40	-1,613.55	5,354.55	-0.03	3.26	3.26	0.48	673,394.67	633,306.76	
5,452.00	0.60	267.00	-1,709.54	5,450.54	-0.01	2.26	2.26	0.08	673,394.68	633,305.76	
5,484.00	0.30	76.30	-1,741.54	5,482.54	0.00	2.17	2.17	2.80	673,394.69	633,305.67	
5,517.00	6.90	92.30	-1,774.46	5,515.46	-0.06	4.24	4.24	20.04	673,394.63	633,307.74	
5,549.00	14.40	91.00	-1,805.88	5,546.88	-0.21	10.15	10.15	23.45	673,394.49	633,313.65	
5,581.00	20.30	93.10	-1,836.41	5,577.41	-0.58	19.68	19.67	18.54	673,394.12	633,323.18	
5,613.00	26.20	90.40	-1,865.80	5,606.80	-0.93	32.30	32.29	18.73	673,393.77	633,335.80	
5,645.00	32.00	88.90	-1,893.75	5,634.75	-0.81	47.85	47.84	18.27	673,393.88	633,351.35	
5,677.00	35.90	87.70	-1,920.29	5,661.29	-0.27	65.71	65.71	12.37	673,394.42	633,369.21	
5,709.00	39.90	87.80	-1,945.54	5,686.54	0.50	85.35	85.35	12.50	673,395.19	633,388.85	
5,741.00	43.70	88.30	-1,969.39	5,710.39	1.22	106.66	106.67	11.92	673,395.91	633,410.16	
5,773.00	46.80	89.70	-1,991.92	5,732.92	1.61	129.38	129.39	10.17	673,396.30	633,432.88	
5,805.00	49.10	91.20	-2,013.35	5,754.35	1.42	153.14	153.14	7.99	673,396.11	633,456.64	
5,838.00	52.20	91.70	-2,034.27	5,775.27	0.77	178.64	178.65	9.47	673,395.46	633,482.14	
5,870.00	55.70	92.00	-2,053.10	5,794.10	-0.07	204.50	204.49	10.96	673,394.62	633,508.00	
5,902.00	58.70	92.10	-2,070.43	5,811.43	-1.03	231.38	231.36	9.38	673,393.66	633,534.88	
5,934.00	61.70	91.80	-2,086.33	5,827.33	-1.98	259.13	259.11	9.41	673,392.72	633,562.63	
5,966.00	64.60	90.40	-2,100.78	5,841.78	-2.52	287.67	287.64	9.87	673,392.17	633,591.17	
5,998.00	68.80	89.40	-2,113.44	5,854.44	-2.46	317.05	317.03	13.43	673,392.23	633,620.55	
6,030.00	73.20	88.50	-2,123.86	5,864.86	-1.91	347.29	347.27	14.00	673,392.79	633,650.79	
6,062.00	77.10	88.40	-2,132.05	5,873.05	-1.07	378.21	378.19	12.19	673,393.62	633,681.71	



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WELL @ 3741.00usft (Basic 44)
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Minimum Curvature
Compass5000

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)	
6,094.00	80.10	89.40	-2,138.38	5,879.38	-0.47	409.57	409.55	9.86	673,394.22	633,713.07	
6,126.00	84.20	88.90	-2,142.75	5,883.75	0.00	441.26	441.25	12.91	673,394.70	633,744.76	
6,158.00	87.20	88.70	-2,145.15	5,886.15	0.67	473.16	473.15	9.40	673,395.36	633,776.66	
6,255.00	92.00	88.30	-2,145.82	5,886.82	3.21	570.09	570.10	4.97	673,397.90	633,873.59	
6,351.00	91.30	89.10	-2,143.06	5,884.06	5.39	666.03	666.05	1.11	673,400.08	633,969.53	
6,447.00	90.30	90.50	-2,141.72	5,882.72	5.72	762.01	762.03	1.79	673,400.41	634,065.51	
6,543.00	89.80	91.10	-2,141.64	5,882.64	4.38	858.00	858.01	0.81	673,399.07	634,161.50	
6,640.00	89.40	90.90	-2,142.31	5,883.31	2.69	954.98	954.98	0.46	673,397.38	634,258.48	
6,736.00	90.10	90.70	-2,142.73	5,883.73	1.35	1,050.97	1,050.96	0.76	673,396.04	634,354.47	
6,832.00	90.10	90.70	-2,142.57	5,883.57	0.17	1,146.97	1,146.94	0.00	673,394.87	634,450.47	
6,929.00	89.60	90.80	-2,142.82	5,883.82	-1.10	1,243.96	1,243.92	0.53	673,393.60	634,547.46	
7,017.00	89.70	90.30	-2,143.36	5,884.36	-1.94	1,331.95	1,331.91	0.58	673,392.75	634,635.45	
7,113.00	89.80	88.80	-2,143.78	5,884.78	-1.19	1,427.94	1,427.90	1.57	673,393.51	634,731.44	
7,209.00	89.00	88.10	-2,144.78	5,885.78	1.41	1,523.90	1,523.88	1.11	673,396.10	634,827.40	
7,305.00	89.00	88.00	-2,146.46	5,887.46	4.68	1,619.83	1,619.83	0.10	673,399.37	634,923.33	
7,402.00	89.10	88.30	-2,148.06	5,889.06	7.81	1,716.77	1,716.78	0.33	673,402.50	635,020.27	
7,498.00	89.10	88.70	-2,149.57	5,890.57	10.32	1,812.72	1,812.75	0.42	673,405.01	635,116.22	
7,594.00	88.80	88.40	-2,151.33	5,892.33	12.75	1,908.68	1,908.72	0.44	673,407.44	635,212.18	
7,691.00	88.00	88.20	-2,154.04	5,895.04	15.63	2,005.60	2,005.66	0.85	673,410.32	635,309.10	
7,787.00	89.20	88.30	-2,156.39	5,897.39	18.56	2,101.52	2,101.60	1.25	673,413.25	635,405.02	
7,883.00	88.80	90.70	-2,158.06	5,899.06	19.39	2,197.49	2,197.58	2.53	673,414.09	635,500.99	
7,979.00	88.80	91.20	-2,160.07	5,901.07	17.80	2,293.46	2,293.53	0.52	673,412.50	635,596.96	
8,076.00	88.70	90.60	-2,162.19	5,903.19	16.28	2,390.42	2,390.48	0.63	673,410.97	635,693.92	
8,172.00	88.30	89.90	-2,164.70	5,905.70	15.86	2,486.39	2,486.44	0.84	673,410.55	635,789.89	
8,268.00	88.20	90.30	-2,167.63	5,908.63	15.69	2,582.34	2,582.39	0.43	673,410.39	635,885.84	
8,363.00	88.30	89.80	-2,170.53	5,911.53	15.61	2,677.30	2,677.34	0.54	673,410.30	635,980.80	
8,461.00	88.60	89.10	-2,173.18	5,914.18	16.55	2,775.26	2,775.31	0.78	673,411.24	636,078.76	



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Site:	NFE Federal	MD Reference:	WELL @ 3741.00usft (Basic 44)
Well:	NFE Federal 27H	North Reference:	Grid
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Design:	Job # 1210329	Database:	Compass5000

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)	
8,557.00	89.30	88.60	-2,174.94	5,915.94	18.48	2,871.22	2,871.28	0.90	673,413.17	636,174.72	
8,653.00	90.30	88.50	-2,175.28	5,916.28	20.91	2,967.19	2,967.26	1.05	673,415.60	636,270.69	
8,750.00	90.30	87.90	-2,174.77	5,915.77	23.95	3,064.14	3,064.23	0.62	673,418.65	636,367.64	
8,846.00	89.60	87.70	-2,174.85	5,915.85	27.64	3,160.07	3,160.19	0.76	673,422.33	636,463.57	
8,942.00	90.60	89.00	-2,174.69	5,915.69	30.40	3,256.03	3,256.16	1.71	673,425.10	636,559.53	
9,038.00	89.40	89.30	-2,174.69	5,915.69	31.83	3,352.01	3,352.15	1.29	673,426.52	636,655.51	
9,134.00	88.40	88.90	-2,176.53	5,917.53	33.33	3,447.98	3,448.13	1.12	673,428.03	636,751.48	
9,231.00	89.80	89.20	-2,178.05	5,919.05	34.94	3,544.95	3,545.11	1.48	673,429.63	636,848.45	
9,327.00	89.10	88.90	-2,178.97	5,919.97	36.53	3,640.94	3,641.10	0.79	673,431.23	636,944.44	
9,423.00	88.80	88.30	-2,180.73	5,921.73	38.88	3,736.89	3,737.07	0.70	673,433.57	637,040.39	
9,520.00	89.60	89.20	-2,182.09	5,923.09	40.99	3,833.86	3,834.05	1.24	673,435.69	637,137.36	
9,616.00	88.70	88.70	-2,183.51	5,924.51	42.75	3,929.83	3,930.03	1.07	673,437.45	637,233.33	
9,712.00	89.70	90.10	-2,184.85	5,925.85	43.76	4,025.81	4,026.02	1.79	673,438.45	637,329.31	
9,808.00	88.80	90.00	-2,186.11	5,927.11	43.67	4,121.80	4,122.01	0.94	673,438.37	637,425.30	
9,905.00	88.20	89.80	-2,188.65	5,929.65	43.84	4,218.77	4,218.97	0.65	673,438.54	637,522.27	
10,001.00	89.50	90.30	-2,190.58	5,931.58	43.76	4,314.75	4,314.95	1.45	673,438.45	637,618.25	
10,097.00	89.10	90.60	-2,191.75	5,932.75	43.01	4,410.74	4,410.93	0.52	673,437.70	637,714.24	
10,193.00	89.60	90.40	-2,192.84	5,933.84	42.17	4,506.72	4,506.91	0.56	673,436.86	637,810.23	
10,289.00	89.40	90.40	-2,193.68	5,934.68	41.50	4,602.72	4,602.90	0.21	673,436.19	637,906.22	
10,359.00	88.80	90.30	-2,194.77	5,935.77	41.07	4,672.71	4,672.88	0.87	673,435.76	637,976.21	
Last Phoenix MWD Surveys @ 10359 MD											
10,415.00	88.80	90.30	-2,195.95	5,936.95	40.78	4,728.70	4,728.87	0.00	673,435.47	638,032.20	
Projection to TD 10415 MD											



Approach Energy Survey Report



Company: Apache Corporation
Project: Eddy County, NM (Nad27)
Site: NFE Federal
Well: NFE Federal 27H
Wellbore: Job # 1210329
Design: Job # 1210329

Local Co-ordinate Reference: Well NFE Federal 27H
TVD Reference: WELL @ 3741.00usft (Basic 44)
MD Reference: WELL @ 3741.00usft (Basic 44)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass5000

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
497.00	496.89	-3.13	-8.55	First Phoenix MWD Survey 497' MD
10,359.00	5,935.77	41.07	4,672.71	Last Phoenix MWD Surveys @ 10359' MD
10,415.00	5,936.95	40.78	4,728.70	Projection to TD, 10415' MD

Checked By: _____ Approved By: _____ Date: _____



**PHOENIX
TECHNOLOGY SERVICES**

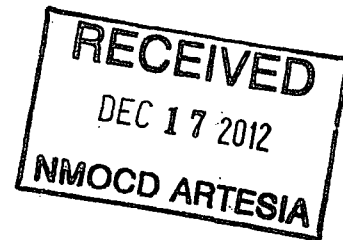
November 28, 2012

Oil Conservation Division
State of New Mexico
811 S. First St.
Artesia, New Mexico 88210

Dear District 2 - Artesia

Attention: Regulatory Department

Re: Apache Corporation
NFE Fed 27H
Eddy Co., NM
API #30-015-40470
Job No. 1210329



Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced Well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

Name & Title of Surveyor	Drainhole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Matt Dice	27	497	10,359	10/27/12	11/21/12	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

Amy Pope
Operations Administrator

Certified mail receipt number: 7011 1570 0001 4364 9865

Phoenix Technology Services SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER

1210329

OPERATOR

Apache Corporation

WELL NAME NFE Fed 27H

COUNTY & STATE

Eddy, NM

API WELL NUMBER

30-015-40470

PROPOSED DIRECTION

89.6

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
ft	.00 ft	.0 ft	.0 ft	.00 ft	.00 ft	Surface

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
27-Oct-12	497 ft	2.1	249.9

SURVEY INSTRUMENT
TYPE
Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
21-Nov-12	10,359 ft	88.8	90.3

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
21-Nov-12	10,415 ft	88.8	90.3

Matt Dice

PRINT YOUR NAME ABOVE

Matt Dice

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7:39
DECLINATION OR GRID	DECLINATION

2012/11/22

TODAY'S DATE

MWD SUPERVISOR 1

Brad Hill/Matt Dice

DIRECTIONAL DRILLER 1

Time Owens

MWD SUPERVISOR 2

Matt Dice

DIRECTIONAL DRILLER 2

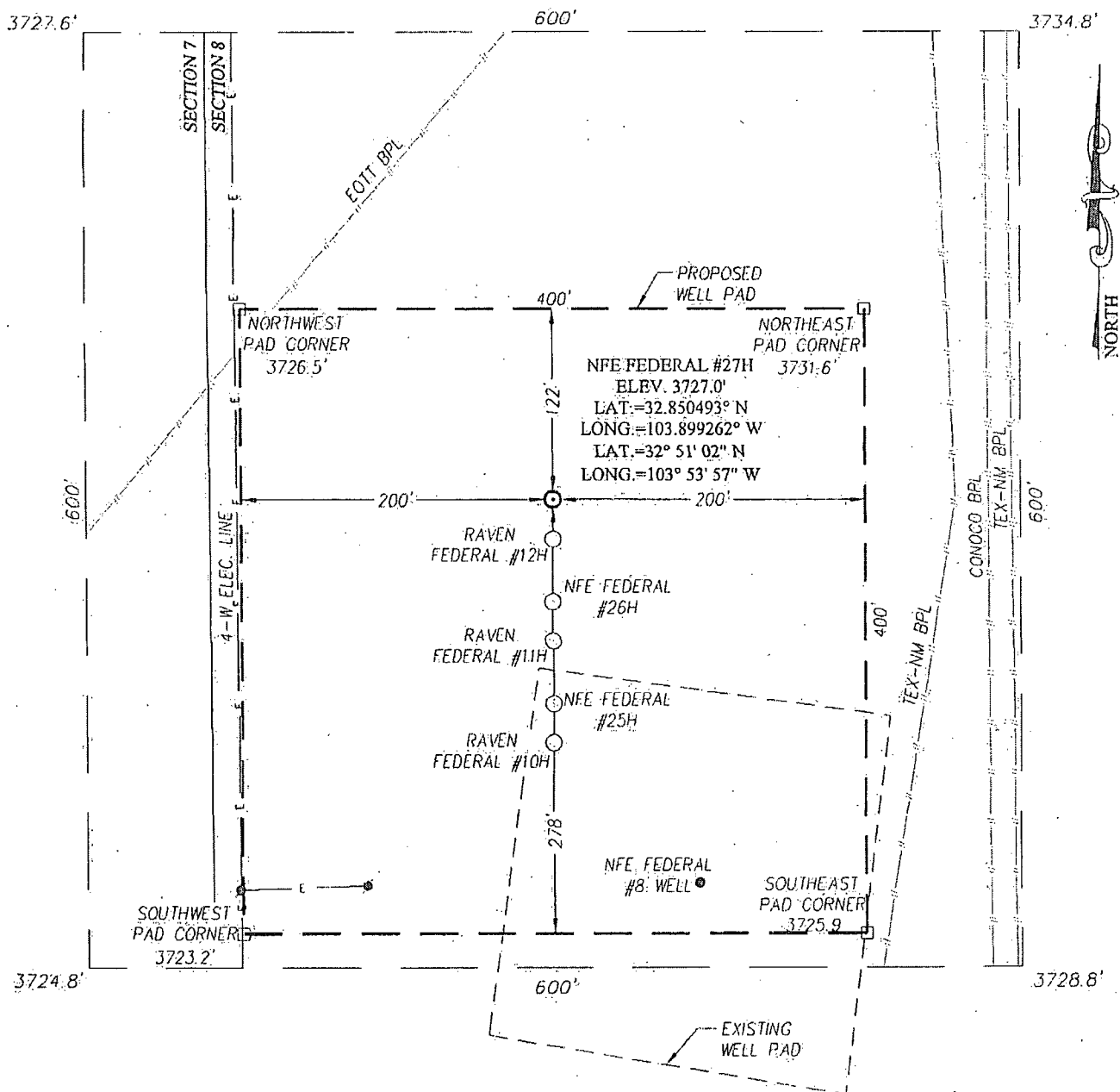
Ken Smith

1805 Brittmore Road

Houston, Texas 77043

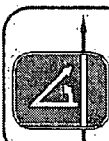
(713)3370609 (Voice); (713)337-0599 (Fax)

SECTION 8, TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY NEW MEXICO

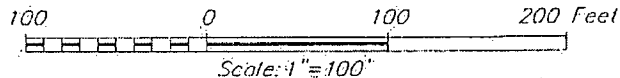


DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. #82 AND CO. RD. #221 (SKELLY) GO NORTH APPROX. 1.3 MILES. TURN RIGHT AND GO NORTHEAST APPROX. 0.5 MILES TO A CURVE. GO EAST APPROX. 0.5 MILES. TURN LEFT AND GO NORTH APPROX. 0.1 MILES TO THE LOCATION.



PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz

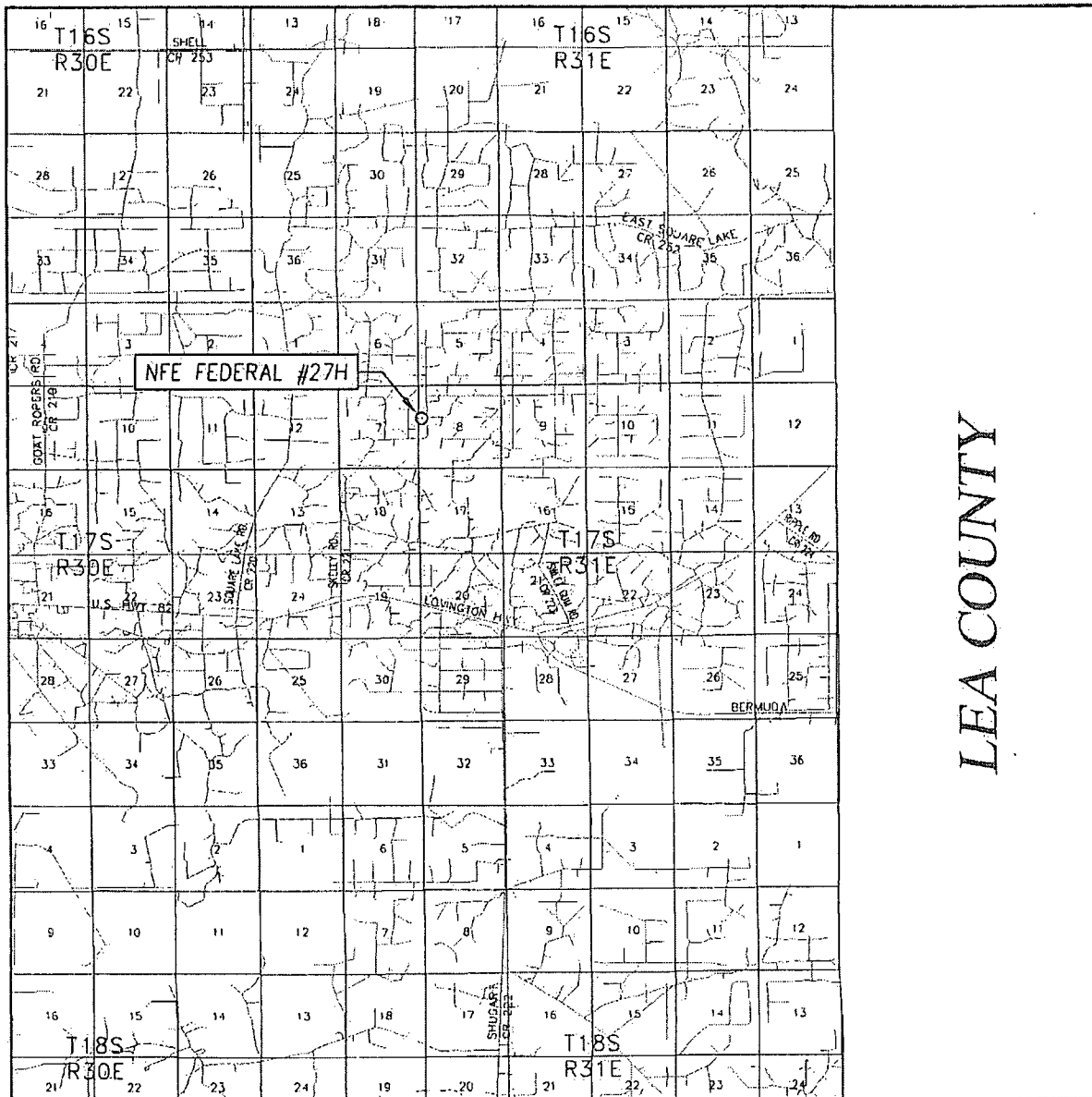


APACHE CORPORATION

NFE FEDERAL #27H WELL
LOCATED 2063 FEET FROM THE NORTH LINE
AND 220 FEET FROM THE WEST LINE OF SECTION 8,
TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

Survey Date: 3/27/12		CAD Date: 3/28/12		Drawn By: AF	
W.O. No.: 12110627		Rev:		Rel. W.O.: 11112712	
				Sheet: 1 of 1	

VICINITY MAP



LEA COUNTY

SCALE: 1" = 2 MILES

SEC. 8 TWP. 17-S RGE. 31-E

SURVEY N.M.P.M.

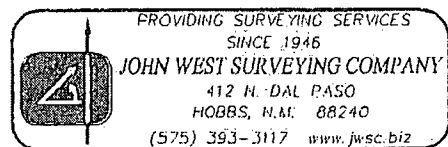
COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 2063' FNL & 220' FWL

ELEVATION 3727'

OPERATOR APACHE CORPORATION

LEASE NFE FEDERAL



DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (505) 393-6161 Fax: (505) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (505) 748-1283 Fax: (505) 748-9720
DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
Property Code	Property Name NFE FEDERAL	Well Number 27H
OGRID No.	Operator Name APACHE CORPORATION	Elevation 3727'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	8	17-S	31-E		2063	NORTH	220	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	8	17-S	31-E		2063	NORTH	330	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

DETAIL 3727.6' 3734.8' 600' 600' 3724.8' 3728.8' 2063' 2063' GRID: AZ = 89°35'48" HORIZ. DIST. = 4730.3' 220' SEE DETAIL 330' CORNER COORDINATES TABLE (A) - Y=674135.1' N, X=633078.6' E (B) - Y=674172.6' N, X=638358.2' E (C) - Y=672814.9' N, X=633086.4' E (D) - Y=672852.6' N, X=638365.7' E GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=673394.7' N X=633303.5' E LAT.=32°25'04.93" N LONG.=103°38'59.262" W LAT.=32°51'02" N LONG.=103°53'57" W BOTTOM HOLE LOCATION Y=673427.9' N X=638032.5' E	OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: _____ Date: _____ Printed Name: _____ E-mail Address: _____ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. MARCH 27, 2012 Date of Survey Signature & Seal of Professional Surveyor: Certificate Number Gary C. Eidson 12641 Ronald J. Eidson 3239 AP TWSC W.O. 12-11.0627
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