

**5D Plan Report**

Apache Corporation**Field Name:** *Apache Lea Co, NM (Nad 83 NME)***Site Name:** *Black & Tan 27 Fed Com MW***Well Name:** *Black & Tan 27 Fed Com 304H***Plan:** *P1:V1*

14 March 2017



Black & Tan 27 Fed Com 304H

Field Name: Apache Lea Co, NM (Nad 83 NME)	Map Units: US ft		Company Name: Apache Corporation	
	Vertical Reference Datum (VRD): Mean Sea Level			
	Projected Coordinate System: NAD83 / New Mexico East (ftUS)			
	Comment:			
Site: Black & Tan 27 Fed Com MW	Units: US ft	North Reference: Grid	Convergence Angle: 0.42	
	Position:	Northing: 560138.30 US ft	Latitude: 32.537436108	
		Easting: 782842.60 US ft	Longitude: -103.549659332	
	Elevation above MSL:3715.00 US ft			
Comment:				
Slot: Black & Tan 27 Fed Com 304H	Position (Relative to Site Centre)			
	+N/-S: 0.30 US ft	Northing: 560138.60 US ft	Latitude: 32.537436124	
	+E/-W: 40.00 US ft	Easting: 782882.60 US ft	Longitude: -103.549529536	
	Slot TVD Reference: Ground Elevation			
	Elevation above MSL: 3715.00 US ft			
Comment:				
Well: Black & Tan 27 Fed Com 304H	Type:Main well		UWI:	Plan:P1:V1
	File Number:	Comment:		
	Closure Distance:4787.49US ft		Closure Azimuth:0.97°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: 0.00 US ft		+E/-W: 0.00 US ft	Az: 0.00°
	Magnetic Parameters:			
	Model: bggm2016	Field Strength:	Declination: 7.03°	Dip: 60.38°
	48263.3nT		Date: 13/Mar/2017	

Drill floor: Plan: P1:V1			
Rig Height (Drill Floor): 25.00us ft	Elevation above MSL: 3740.00us ft	Inclination: 0.00°	Azimuth: 0.00°

Target set: Black & Tan 27 Fed Com 304H Comment:									
Target Name:	Shape:	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (USft)	Easting (USft)	Latitude (° ' ")	Longitude (° ' ")	Comment
PBHL 304H	Cuboid	10955.00	4786.80	81.30	564925.40	782963.90	32°33'2.13"	- 103°32'56.94"	

Wellpath created using minimum curvature.

Tie Point:					
MD: 0.00USft	Inclination: 0.00°	Azimuth: 0.00°	TVD: 0.00USft	North Offset: 0.00USft	East Offset: 0.00USft

Salient Points: (Relative to Slot centre)(TVD relative to Drill Floor)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° ' ")	Longitude (° ' ")	B.Rate (°/100US ft)	T.Rate (°/100US ft)	DLS (°/100US ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.537436124	- 103.549529536	0.00	0.00	0.00	
1625.00	0.00	0.00	1625.00	0.00	0.00	0.00	32.537436124	- 103.549529536	0.00	0.00	0.00	Rustler :

5D Plan Report

Salient Points: (Relative to Slot centre)(TVD relative to Drill Floor)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° ' ")	Longitude (° ' ")	B.Rate (°/100US ft)	T.Rate (°/100US ft)	DLS (°/100US ft)	Comment
1960.00	0.00	0.00	1960.00	0.00	0.00	0.00	32.537436 124	- 103.54952 9536	0.00	0.00	0.00	Salado :
3365.00	0.00	0.00	3365.00	0.00	0.00	0.00	32.537436 124	- 103.54952 9536	0.00	0.00	0.00	Tansill :
3520.00	0.00	0.00	3520.00	0.00	0.00	0.00	32.537436 124	- 103.54952 9536	0.00	0.00	0.00	Yates :
3620.00	0.00	0.00	3620.00	0.00	0.00	0.00	32.537436 124	- 103.54952 9536	0.00	0.00	0.00	Seven Rivers :
5670.00	0.00	0.00	5670.00	0.00	0.00	0.00	32.537436 124	- 103.54952 9536	0.00	0.00	0.00	Delaware :
8580.00	0.00	0.00	8580.00	0.00	0.00	0.00	32.537436 124	- 103.54952 9536	0.00	0.00	0.00	Bone Spring :
9018.00	0.00	0.00	9018.00	0.00	0.00	0.00	32.537436 124	- 103.54952 9536	0.00	0.00	0.00	Avalon :
9275.00	0.00	0.00	9275.00	0.00	0.00	0.00	32.537436 124	- 103.54952 9536	0.00	0.00	0.00	1st Bone Spring Carb :
9678.00	0.00	0.00	9678.00	0.00	0.00	0.00	32.537436 124	- 103.54952 9536	0.00	0.00	0.00	1st Bone Spring Sand :
9950.00	0.00	0.00	9950.00	0.00	0.00	0.00	32.537436 124	- 103.54952 9536	0.00	0.00	0.00	2nd Bone Spring Carb :
10215.00	0.00	0.00	10215.00	0.00	0.00	0.00	32.537436 124	- 103.54952 9536	0.00	0.00	0.00	2nd Bone Spring Sand :
10529.10	0.00	0.00	10529.10	0.00	0.00	0.00	32.537436 124	- 103.54952 9536	0.00	0.00	0.00	KOP
10741.98	25.55	31.34	10735.00	39.87	39.87	24.28	32.537545 207	- 103.54944 9807	12.00	0.00	12.00	3rd Bone Spring Carb :
10779.10	30.00	31.34	10767.83	54.63	54.63	33.27	32.537585 613	- 103.54942 0274	12.00	-0.00	12.00	Build/Turn
11082.08	62.92	8.76	10975.00	259.56	259.56	95.30	32.538147 597	- 103.54921 4107	10.86	-7.45	12.00	3rd Bone Spring Sand :
11327.38	91.00	359.60	11029.91	495.32	495.32	111.43	32.538795 256	- 103.54915 6163	11.45	-3.73	12.00	LP
15619.62	91.00	359.60	10955.00	4786.80	4786.80	81.30	32.550591 042	- 103.54915 1381	0.00	0.00	0.00	PBHL 304H

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	B.Rate (°/100US ft)	T.Rate (°/100US ft)	DLS (°/100US ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	

SD Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)												Comment
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	B.Rate (°/100US ft)	T.Rate (°/100US ft)	DLS (°/100US ft)	
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	Rustler :
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
1625.00	0.00	0.00	1625.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
1900.00	0.00	0.00	1900.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	Salado :
1960.00	0.00	0.00	1960.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	Tansill :
2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
2800.00	0.00	0.00	2800.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	Yates :
2900.00	0.00	0.00	2900.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	Seven Rivers :
3365.00	0.00	0.00	3365.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
3520.00	0.00	0.00	3520.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	Delaware :
3620.00	0.00	0.00	3620.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
3900.00	0.00	0.00	3900.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
4100.00	0.00	0.00	4100.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
4200.00	0.00	0.00	4200.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
4400.00	0.00	0.00	4400.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
4600.00	0.00	0.00	4600.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
4700.00	0.00	0.00	4700.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
4800.00	0.00	0.00	4800.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
4900.00	0.00	0.00	4900.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
5100.00	0.00	0.00	5100.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
5200.00	0.00	0.00	5200.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
5300.00	0.00	0.00	5300.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
5670.00	0.00	0.00	5670.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
5700.00	0.00	0.00	5700.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
5800.00	0.00	0.00	5800.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
5900.00	0.00	0.00	5900.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
6000.00	0.00	0.00	6000.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
6100.00	0.00	0.00	6100.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
6200.00	0.00	0.00	6200.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
6300.00	0.00	0.00	6300.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
6400.00	0.00	0.00	6400.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
6500.00	0.00	0.00	6500.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	B.Rate (°/100US ft)	T.Rate (°/100US ft)	DLS (°/100US ft)	Comment
6600.00	0.00	0.00	6600.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
6700.00	0.00	0.00	6700.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
6800.00	0.00	0.00	6800.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
6900.00	0.00	0.00	6900.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
7000.00	0.00	0.00	7000.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
7100.00	0.00	0.00	7100.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
7200.00	0.00	0.00	7200.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
7300.00	0.00	0.00	7300.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
7400.00	0.00	0.00	7400.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
7500.00	0.00	0.00	7500.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
7600.00	0.00	0.00	7600.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
7700.00	0.00	0.00	7700.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
7800.00	0.00	0.00	7800.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
7900.00	0.00	0.00	7900.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
8000.00	0.00	0.00	8000.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
8100.00	0.00	0.00	8100.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
8200.00	0.00	0.00	8200.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
8300.00	0.00	0.00	8300.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
8400.00	0.00	0.00	8400.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
8500.00	0.00	0.00	8500.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
8580.00	0.00	0.00	8580.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	Bone Spring :
8600.00	0.00	0.00	8600.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
8700.00	0.00	0.00	8700.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
8800.00	0.00	0.00	8800.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
8900.00	0.00	0.00	8900.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
9000.00	0.00	0.00	9000.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
9018.00	0.00	0.00	9018.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	Avalon :
9100.00	0.00	0.00	9100.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
9200.00	0.00	0.00	9200.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
9275.00	0.00	0.00	9275.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	1st Bone Spring Carb :
9300.00	0.00	0.00	9300.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
9400.00	0.00	0.00	9400.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
9500.00	0.00	0.00	9500.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
9600.00	0.00	0.00	9600.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
9678.00	0.00	0.00	9678.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	1st Bone Spring Sand :
9700.00	0.00	0.00	9700.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
9800.00	0.00	0.00	9800.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
9900.00	0.00	0.00	9900.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
9950.00	0.00	0.00	9950.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	2nd Bone Spring Carb :
10000.00	0.00	0.00	10000.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
10100.00	0.00	0.00	10100.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
10200.00	0.00	0.00	10200.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
10215.00	0.00	0.00	10215.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	2nd Bone Spring Sand :
10300.00	0.00	0.00	10300.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
10400.00	0.00	0.00	10400.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
10500.00	0.00	0.00	10500.00	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	
10529.10	0.00	0.00	10529.10	0.00	0.00	0.00	560138.60	782882.60	0.00	0.00	0.00	KOP
10600.00	8.51	31.34	10599.74	4.49	4.49	2.73	560143.09	782885.33	12.00	0.00	12.00	
10700.00	20.51	31.34	10696.37	25.85	25.85	15.74	560164.45	782898.34	12.00	0.00	12.00	
10741.98	25.55	31.34	10735.00	39.87	39.87	24.28	560178.47	782906.88	12.00	-0.00	12.00	3rd Bone Spring Carb :
10779.10	30.00	31.34	10767.83	54.63	54.63	33.27	560193.23	782915.87	12.00	-0.00	12.00	Build/Turn

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	B.Rate (°/100US ft)	T.Rate (°/100US ft)	DLS (°/100US ft)	Comment
10800.00	32.08	28.62	10785.74	63.97	63.97	38.65	560202.57	782921.25	9.94	-13.03	12.00	
10900.00	42.60	19.02	10865.20	119.48	119.48	62.48	560258.08	782945.08	10.52	-9.60	12.00	
11000.00	53.65	12.70	10931.88	191.03	191.03	82.44	560329.63	782965.04	11.05	-6.31	12.00	
11082.08	62.92	8.76	10975.00	259.56	259.56	95.30	560398.16	782977.90	11.29	-4.81	12.00	3rd Bone Spring Sand :
11100.00	64.95	7.99	10982.87	275.48	275.48	97.65	560414.08	782980.25	11.36	-4.29	12.00	
11200.00	76.38	4.08	11015.94	369.15	369.15	107.44	560507.75	782990.04	11.42	-3.90	12.00	
11300.00	87.85	0.55	11029.64	467.95	467.95	111.39	560606.55	782993.99	11.48	-3.54	12.00	
11327.38	91.00	359.60	11029.91	495.32	495.32	111.43	560633.92	782994.03	11.49	-3.46	12.00	LP
11400.00	91.00	359.60	11028.64	567.93	567.93	110.92	560706.53	782993.52	0.00	0.00	0.00	
11500.00	91.00	359.60	11026.90	667.91	667.91	110.21	560806.51	782992.81	0.00	0.00	0.00	
11600.00	91.00	359.60	11025.15	767.89	767.89	109.51	560906.49	782992.11	0.00	0.00	0.00	
11700.00	91.00	359.60	11023.41	867.87	867.87	108.81	561006.47	782991.41	0.00	0.00	0.00	
11800.00	91.00	359.60	11021.66	967.86	967.86	108.11	561106.46	782990.71	0.00	0.00	0.00	
11900.00	91.00	359.60	11019.92	1067.84	1067.84	107.41	561206.44	782990.01	0.00	0.00	0.00	
12000.00	91.00	359.60	11018.17	1167.82	1167.82	106.70	561306.42	782989.30	0.00	0.00	0.00	
12100.00	91.00	359.60	11016.43	1267.80	1267.80	106.00	561406.40	782988.60	0.00	0.00	0.00	
12200.00	91.00	359.60	11014.68	1367.79	1367.79	105.30	561506.39	782987.90	0.00	0.00	0.00	
12300.00	91.00	359.60	11012.94	1467.77	1467.77	104.60	561606.37	782987.20	0.00	0.00	0.00	
12400.00	91.00	359.60	11011.19	1567.75	1567.75	103.90	561706.35	782986.50	0.00	0.00	0.00	
12500.00	91.00	359.60	11009.44	1667.73	1667.73	103.20	561806.33	782985.80	0.00	0.00	0.00	
12600.00	91.00	359.60	11007.70	1767.72	1767.72	102.49	561906.32	782985.09	0.00	0.00	0.00	
12700.00	91.00	359.60	11005.95	1867.70	1867.70	101.79	562006.30	782984.39	0.00	0.00	0.00	
12800.00	91.00	359.60	11004.21	1967.68	1967.68	101.09	562106.28	782983.69	0.00	0.00	0.00	
12900.00	91.00	359.60	11002.46	2067.66	2067.66	100.39	562206.26	782982.99	0.00	0.00	0.00	
13000.00	91.00	359.60	11000.72	2167.64	2167.64	99.69	562306.24	782982.29	0.00	0.00	0.00	
13100.00	91.00	359.60	10998.97	2267.63	2267.63	98.98	562406.23	782981.58	0.00	0.00	0.00	
13200.00	91.00	359.60	10997.23	2367.61	2367.61	98.28	562506.21	782980.88	0.00	0.00	0.00	
13300.00	91.00	359.60	10995.48	2467.59	2467.59	97.58	562606.19	782980.18	0.00	0.00	0.00	
13400.00	91.00	359.60	10993.74	2567.57	2567.57	96.88	562706.17	782979.48	0.00	0.00	0.00	
13500.00	91.00	359.60	10991.99	2667.56	2667.56	96.18	562806.16	782978.78	0.00	0.00	0.00	
13600.00	91.00	359.60	10990.25	2767.54	2767.54	95.47	562906.14	782978.07	0.00	0.00	0.00	
13700.00	91.00	359.60	10988.50	2867.52	2867.52	94.77	563006.12	782977.37	0.00	0.00	0.00	
13800.00	91.00	359.60	10986.76	2967.50	2967.50	94.07	563106.10	782976.67	0.00	0.00	0.00	
13900.00	91.00	359.60	10985.01	3067.49	3067.49	93.37	563206.09	782975.97	0.00	0.00	0.00	
14000.00	91.00	359.60	10983.27	3167.47	3167.47	92.67	563306.07	782975.27	0.00	0.00	0.00	
14100.00	91.00	359.60	10981.52	3267.45	3267.45	91.97	563406.05	782974.57	0.00	0.00	0.00	
14200.00	91.00	359.60	10979.78	3367.43	3367.43	91.26	563506.03	782973.86	0.00	0.00	0.00	
14300.00	91.00	359.60	10978.03	3467.41	3467.41	90.56	563606.01	782973.16	0.00	0.00	0.00	
14400.00	91.00	359.60	10976.29	3567.40	3567.40	89.86	563706.00	782972.46	0.00	0.00	0.00	
14500.00	91.00	359.60	10974.54	3667.38	3667.38	89.16	563805.98	782971.76	0.00	0.00	0.00	
14600.00	91.00	359.60	10972.79	3767.36	3767.36	88.46	563905.96	782971.06	0.00	0.00	0.00	
14700.00	91.00	359.60	10971.05	3867.34	3867.34	87.75	564005.94	782970.35	0.00	0.00	0.00	
14800.00	91.00	359.60	10969.30	3967.33	3967.33	87.05	564105.93	782969.65	0.00	0.00	0.00	
14900.00	91.00	359.60	10967.56	4067.31	4067.31	86.35	564205.91	782968.95	0.00	0.00	0.00	
15000.00	91.00	359.60	10965.81	4167.29	4167.29	85.65	564305.89	782968.25	0.00	0.00	0.00	
15100.00	91.00	359.60	10964.07	4267.27	4267.27	84.95	564405.87	782967.55	0.00	0.00	0.00	
15200.00	91.00	359.60	10962.32	4367.26	4367.26	84.25	564505.86	782966.85	0.00	0.00	0.00	
15300.00	91.00	359.60	10960.58	4467.24	4467.24	83.54	564605.84	782966.14	0.00	0.00	0.00	
15400.00	91.00	359.60	10958.83	4567.22	4567.22	82.84	564705.82	782965.44	0.00	0.00	0.00	
15500.00	91.00	359.60	10957.09	4667.20	4667.20	82.14	564805.80	782964.74	0.00	0.00	0.00	
15600.00	91.00	359.60	10955.34	4767.18	4767.18	81.44	564905.78	782964.04	0.00	0.00	0.00	
15619.62	91.00	359.60	10955.00	4786.80	4786.80	81.30	564925.40	782963.90	0.00	0.00	0.00	PBHL 304H

Formation Points: (Relative to Slot centre)(TVD relative to Drill Floor)									
Name	MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	N.Offset (US ft)	E.Offset (US ft)	F.Dip (°)	F.Dir (°)
Rustler	1625.00	0.00	0.00	1625.00	-2115.00	0.00	0.00	0	0

5D Plan Report

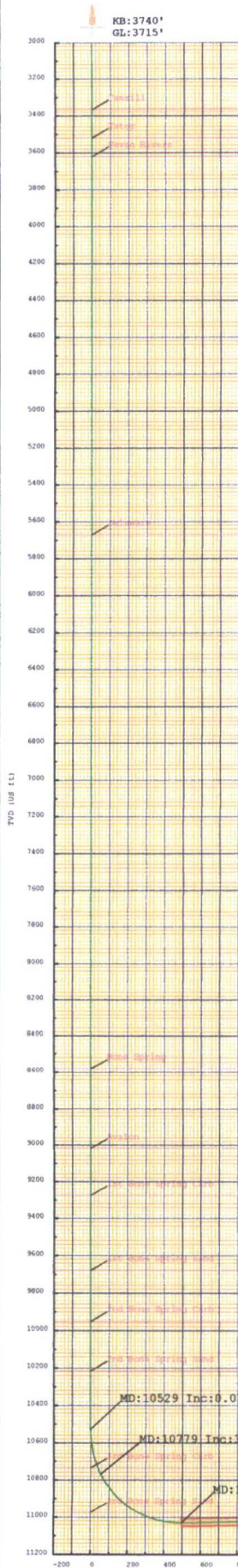
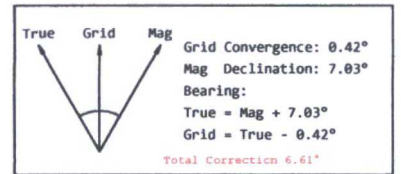
Formation Points: (Relative to Slot centre)(TVD relative to Drill Floor)									
Name	MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	N.Offset (US ft)	E.Offset (US ft)	F.Dip (°)	F.Dir (°)
Salado	1960.00	0.00	0.00	1960.00	-1780.00	0.00	0.00	0	0
Tansill	3365.00	0.00	0.00	3365.00	-375.00	0.00	0.00	0	0
Yates	3520.00	0.00	0.00	3520.00	-220.00	0.00	0.00	0	0
Seven Rivers	3620.00	0.00	0.00	3620.00	-120.00	0.00	0.00	0	0
Delaware	5670.00	0.00	0.00	5670.00	1930.00	0.00	0.00	0	0
Bone Spring	8580.00	0.00	0.00	8580.00	4840.00	0.00	0.00	0	0
Avalon	9018.00	0.00	0.00	9018.00	5278.00	0.00	0.00	0	0
1st Bone Spring Carb	9275.00	0.00	0.00	9275.00	5535.00	0.00	0.00	0	0
1st Bone Spring Sand	9678.00	0.00	0.00	9678.00	5938.00	0.00	0.00	0	0
2nd Bone Spring Carb	9950.00	0.00	0.00	9950.00	6210.00	0.00	0.00	0	0
2nd Bone Spring Sand	10215.00	0.00	0.00	10215.00	6475.00	0.00	0.00	0	0
3rd Bone Spring Carb	10741.98	25.55	31.34	10735.00	6995.00	39.87	24.28	0	0
3rd Bone Spring Sand	11082.08	62.92	8.76	10975.00	7235.00	259.56	95.30	0	0



Apache
Black & Tan 27 Fed Com 304H
Lea Co, NM



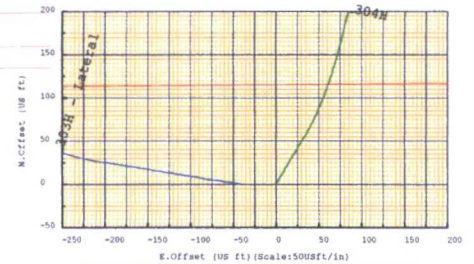
Weatherford



Plan Data for Black & Tan 27 Fed Com 304H

Plan Point Information:

DogLeg	Severity	Unit	%/100.00ft	Position offsets from Slot centre
MD	Inc	Az	TVD	+N/-S +E/-W Northing Easting VSec DLS Comments
(USft)	(°)	(°)	(USft)	(USft) (USft) (USft) (DLSU)
0.00	0.00	0.00	0.00	-0.00 0.00 560138.60 782882.60 -0.00 0.00
10529.10	0.00	0.00	10529.10	-0.00 0.00 560138.60 782882.60 -0.00 0.00
10779.10	30.00	31.34	10767.83	54.63 33.27 560193.23 782915.87 55.19 12.00
11327.38	91.00	359.60	11029.91	495.32 111.43 560633.92 782994.03 497.14 12.00
15619.62	91.00	359.60	10955.00	4786.80 81.30 564925.40 782963.90 4787.49 0.00



Plan Data for Black & Tan 27 Fed Com 304H

Field: Apache Lea Co, NM (Mad 83 NME)
Map Unit: USft Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / New Mexico East (ftUS)

Site: Black & Tan 27 Fed Com NM
Unit: USft TVD Reference:
Company Name: Apache Corporation
Position:
Northing: 560138.30USft Latitude: 32.537436°
Easting: 782842.60USft Longitude: -103.549659°
North Reference: Grid Grid Convergence: 0.42°
Elevation Above VRD: 3715.00USft

Slot: Black & Tan 27 Fed Com 304H
Position:
Offset is from Site centre
+N/-S: 0.30USft Northing: 560138.60USft Latitude: 32.537436°
+E/-W: 40.00USft Easting: 782882.60USft Longitude: -103.549530°
Elevation Above VRD: 3715.00USft

Well: Black & Tan 27 Fed Com 304H
Type: Main-Well
File Number:

Plan Folder: P1 Plan: P1:V1
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft Azimuth: 0.97°
+E/-W: 0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
bggm2016 48263(nT) 7.03° 60.38° 2017-03-13

Plan Data for Black & Tan 27 Fed Com 304H

Formation Point Information:

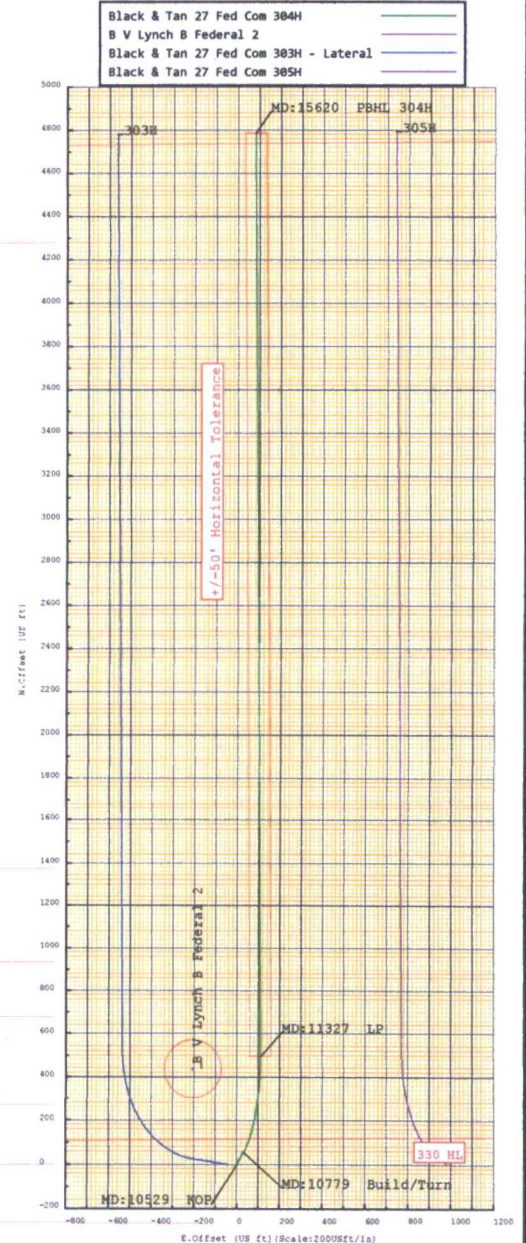
Name	TVD	SS	MD
(USft)	(USft)	(USft)	(USft)
Rustler	1625.00	2115.00	1625.00
Salado	1960.00	1780.00	1960.00
Tansill	3365.00	375.00	3365.00
Yates	3520.00	220.00	3520.00
Seven Rivers	3620.00	120.00	3620.00
Delaware	5670.00	-1330.00	5670.00
Bone Spring	8580.00	-4840.00	8580.00
Avalon	9018.00	-5278.00	9018.00
1st Bone Spring Carb	9275.00	-5535.00	9275.00
1st Bone Spring Sand	9678.00	-5938.00	9678.00
2nd Bone Spring Carb	9950.00	-6210.00	9950.00
2nd Bone Spring Sand	10215.00	-6475.00	10215.00
3rd Bone Spring Carb	10735.00	-6995.00	10741.98
3rd Bone Spring Sand	10975.00	-7235.00	11082.08

Plan Data for Black & Tan 27 Fed Com 304H

Target Set Information:

Name: Black & Tan 27 Fed Com 304H
Position offsets from Slot centre

Name	TVD	SS	+N/-S +E/-W Northing Easting
(USft)	(USft)	(USft)	(USft)
PBHL 304H	10955.00	-7215.00	4786.80 81.30 564925.40 782963.90



Drawing By: GMR Date: 03-14-2017
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