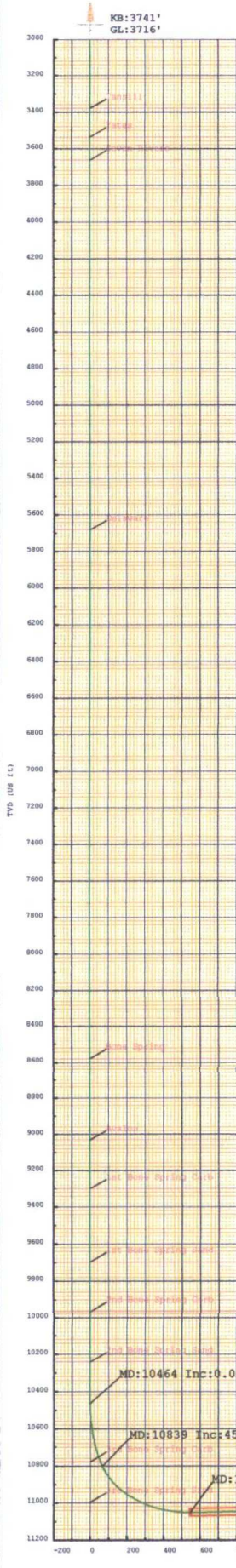
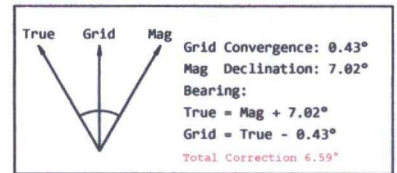




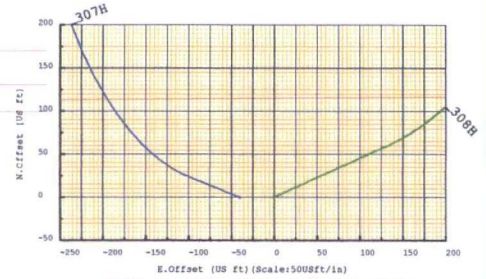
Apache
Black & Tan 27 Fed Com 308H
Lea Co, NM



Plan Data for Black & Tan 27 Fed Com 308H

Plan Point Information:

MD	Inc	Az	TVD	+N/-S	+E/-W	Northing	Easting	VSec	DLS	Comments
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(DLSU)	
0.00	0.00	0.00	-0.00	-0.00	-0.00	568156.20	785232.00	-0.00	0.00	
10464.02	0.00	0.00	10464.02	-0.00	-0.00	568156.20	785232.00	-0.00	0.00	KOP
10839.02	45.00	65.77	10801.64	57.40	127.52	568213.60	785359.52	65.88	12.00	Build/Turn
11457.06	91.00	359.56	11050.52	522.94	357.44	568679.14	785589.44	545.90	12.00	LP
15726.00	91.00	359.56	10976.00	4791.90	324.60	564948.10	785556.60	4802.88	0.00	PBHL 308H



Plan Data for Black & Tan 27 Fed Com 308H

Field: Apache Lea Co, NM (Nad 83 NHE)

Map Unit: USft Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / New Mexico East (ftUS)

Site: Black & Tan 27 Fed Com E
Unit: USFeet TVD Reference:
Company Name: Apache Corporation
Position: Northing: 568155.00USft Latitude: 32.537436°
Easting: 785192.00USft Longitude: -103.542036°
North Reference: Grid Grid Convergence: 0.43°
Elevation Above VRD: 3715.00USft

Slot: Black & Tan 27 Fed Com 308H
Position:
Offset is from Site centre
+N/-S: 0.40USft Northing: 568156.20USft Latitude: 32.537437°
+E/-W: 40.00USft Easting: 785232.00USft Longitude: -103.541906°
Elevation Above VRD: 3716.00USft

Well: Black & Tan 27 Fed Com 308H
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: 3.88°
+E/-W: 0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
bggm2016 48263(nT) 7.02° 60.38° 2017-03-13

Plan Data for Black & Tan 27 Fed Com 308H

Formation Point Information:

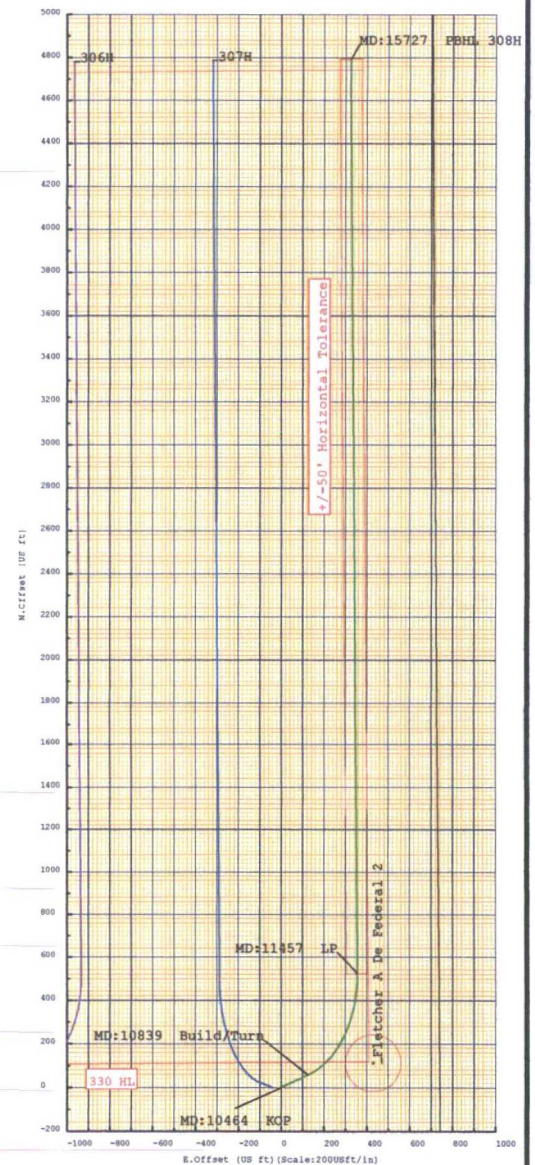
Name	TVD	SS	MD
(USft)	(USft)	(USft)	(USft)
Rustler	1636.00	2105.00	1636.00
Salado	1971.00	3770.00	1971.00
Tansill	3379.00	362.00	3379.00
Yates	3536.00	205.00	3536.00
Seven Rivers	3661.00	80.00	3661.00
Delaware	5681.00	-1940.00	5681.00
Bone Spring	8576.00	-4835.00	8576.00
Avalon	9031.00	-5290.00	9031.00
1st Bone Spring Carb	9299.00	-5558.00	9299.00
1st Bone Spring Sand	9696.00	-5955.00	9696.00
2nd Bone Spring Carb	9963.00	-6222.00	9963.00
2nd Bone Spring Sand	10241.00	-6500.00	10241.00
3rd Bone Spring Carb	10776.00	-7035.00	10804.01
3rd Bone Spring Sand	10996.00	-7255.00	11176.00

Plan Data for Black & Tan 27 Fed Com 308H

Target Set Information:

Name: Black & Tan 27 Fed Com 308H
Position offsets from Slot centre

Name	TVD	SS	+N/-S	+E/-W	Northing	Easting
(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)
PBHL 308H	10976.00	-7235.00	4791.90	324.60	564948.10	785556.60



Drawing By: GMR Date: 03-14-2017
Weatherford Drilling Services
10,000 Pilot Ave.
Midland, TX 79711
+1.432.561.8892 Main
+1.432.561.8895 Fax



HOBBS OCD

SEP 26 2017

RECEIVED

5D Plan Report

Apache Corporation**Field Name:** *Apache Lea Co, NM (Nad 83 NME)***Site Name:** *Black & Tan 27 Fed Com E***Well Name:** *Black & Tan 27 Fed Com 308H***Plan:** *P1:V1*

14 March 2017

**Weatherford®**

Black & Tan 27 Fed Com 308H

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 Corn E	Units: US ft	North Reference: Grid	Convergence Angle: 0.43	
	Position:	Northing: 560155.80 US ft	Latitude: 32.537436469	
		Easting: 785192.00 US ft	Longitude: -103.542035828	
	Elevation above MSL:3715.00 US ft			
Comment:				
Slot: Black & Tan 27 Fed Corn 308H	Position (Relative to Site Centre)			
	+N/-S: 0.40 US ft	Northing: 560156.20 US ft	Latitude: 32.537436752	
	+E/-W: 40.00 US ft	Easting: 785232.00 US ft	Longitude: -103.541906031	
	Slot TVD Reference: Ground Elevation			
Elevation above MSL: 3716.00 US ft				
Comment:				
Well: Black & Tan 27 Fed Corn 308H	Type:Main well		UWI:	Plan:P1:V1
	File Number:	Comment:		
	Closure Distance:4802.88US ft		Closure Azimuth:3.88°	
	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: 7.02°	Dip: 60.38°
	48263.9nT			Date: 13/Mar/2017

Drill floor: Plan: P1:V1

Rig Height (Drill Floor): 25.00us ft **Elevation above MSL:** 3741.00us ft **Inclination:** 0.00° **Azimuth:** 0.00°

Target set: Black & Tan 27 Fed Com 308H Comment:

Target Name:	Shape:	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (USft)	Easting (USft)	Latitude (° ' ")	Longitude (° ' ")	Comment
PBHL 308H	Cuboid	10976.00	4791.90	324.60	564948.10	785556.60	32°33'2.16"	- 103°32'26.65"	

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	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	
1636.00	0.00	0.00	1636.00	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	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
1971.00	0.00	0.00	1971.00	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	Salado :
3379.00	0.00	0.00	3379.00	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	Tansill :
3536.00	0.00	0.00	3536.00	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	Yates :
3661.00	0.00	0.00	3661.00	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	Seven Rivers :
5681.00	0.00	0.00	5681.00	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	Delaware :
8576.00	0.00	0.00	8576.00	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	Bone Spring :
9031.00	0.00	0.00	9031.00	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	Avalon :
9299.00	0.00	0.00	9299.00	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	1st Bone Spring Carb :
9696.00	0.00	0.00	9696.00	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	1st Bone Spring Sand :
9963.00	0.00	0.00	9963.00	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	2nd Bone Spring Carb :
10241.00	0.00	0.00	10241.00	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	2nd Bone Spring Sand :
10464.02	0.00	0.00	10464.02	0.00	0.00	0.00	32.537436 752	- 103.54190 6031	0.00	0.00	0.00	KOP
10804.01	40.80	65.77	10776.00	47.62	47.62	105.80	32.537565 471	- 103.54156 1596	12.00	0.00	12.00	3rd Bone Spring Carb :
10839.02	45.00	65.77	10801.64	57.40	57.40	127.52	32.537591 903	- 103.54149 0868	12.00	-0.00	12.00	Build/Turn
11176.80	66.72	23.48	10996.00	257.10	257.10	305.74	32.538137 149	- 103.54090 7796	6.43	-12.52	12.00	3rd Bone Spring Sand :
11457.06	91.00	359.56	11050.52	522.94	522.94	357.44	32.538866 751	- 103.54073 3612	8.66	-8.54	12.00	LP
15726.80	91.00	359.56	10976.00	4791.90	4791.90	324.60	32.550600 672	- 103.54073 7092	0.00	0.00	0.00	PBHL 308H

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	560156.20	785232.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	560156.20	785232.00	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
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
1636.00	0.00	0.00	1636.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	Rustler :
1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
1900.00	0.00	0.00	1900.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
1971.00	0.00	0.00	1971.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	Salado :
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
2800.00	0.00	0.00	2800.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
2900.00	0.00	0.00	2900.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
3379.00	0.00	0.00	3379.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	Tansill :
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
3536.00	0.00	0.00	3536.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	Yates :
3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
3661.00	0.00	0.00	3661.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	Seven Rivers :
3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
3900.00	0.00	0.00	3900.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
4100.00	0.00	0.00	4100.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
4200.00	0.00	0.00	4200.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
4400.00	0.00	0.00	4400.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
4600.00	0.00	0.00	4600.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
4700.00	0.00	0.00	4700.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
4800.00	0.00	0.00	4800.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
4900.00	0.00	0.00	4900.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
5100.00	0.00	0.00	5100.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
5200.00	0.00	0.00	5200.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
5300.00	0.00	0.00	5300.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
5681.00	0.00	0.00	5681.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	Delaware :
5700.00	0.00	0.00	5700.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
5800.00	0.00	0.00	5800.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
5900.00	0.00	0.00	5900.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
6000.00	0.00	0.00	6000.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
6100.00	0.00	0.00	6100.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
6200.00	0.00	0.00	6200.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
6300.00	0.00	0.00	6300.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
6400.00	0.00	0.00	6400.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
6500.00	0.00	0.00	6500.00	0.00	0.00	0.00	560156.20	785232.00	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	560156.20	785232.00	0.00	0.00	0.00	
6700.00	0.00	0.00	6700.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
6800.00	0.00	0.00	6800.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
6900.00	0.00	0.00	6900.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
7000.00	0.00	0.00	7000.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
7100.00	0.00	0.00	7100.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
7200.00	0.00	0.00	7200.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
7300.00	0.00	0.00	7300.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
7400.00	0.00	0.00	7400.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
7500.00	0.00	0.00	7500.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
7600.00	0.00	0.00	7600.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
7700.00	0.00	0.00	7700.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
7800.00	0.00	0.00	7800.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
7900.00	0.00	0.00	7900.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
8000.00	0.00	0.00	8000.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
8100.00	0.00	0.00	8100.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
8200.00	0.00	0.00	8200.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
8300.00	0.00	0.00	8300.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
8400.00	0.00	0.00	8400.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
8500.00	0.00	0.00	8500.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
8576.00	0.00	0.00	8576.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	Bone Spring :
8600.00	0.00	0.00	8600.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
8700.00	0.00	0.00	8700.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
8800.00	0.00	0.00	8800.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
8900.00	0.00	0.00	8900.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
9000.00	0.00	0.00	9000.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
9031.00	0.00	0.00	9031.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	Avalon :
9100.00	0.00	0.00	9100.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
9200.00	0.00	0.00	9200.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
9299.00	0.00	0.00	9299.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	1st Bone Spring Carb :
9300.00	0.00	0.00	9300.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
9400.00	0.00	0.00	9400.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
9500.00	0.00	0.00	9500.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
9600.00	0.00	0.00	9600.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
9696.00	0.00	0.00	9696.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	1st Bone Spring Sand :
9700.00	0.00	0.00	9700.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
9800.00	0.00	0.00	9800.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
9900.00	0.00	0.00	9900.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
9963.00	0.00	0.00	9963.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	2nd Bone Spring Carb :
10000.00	0.00	0.00	10000.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
10100.00	0.00	0.00	10100.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
10200.00	0.00	0.00	10200.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
10241.00	0.00	0.00	10241.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	2nd Bone Spring Sand :
10300.00	0.00	0.00	10300.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
10400.00	0.00	0.00	10400.00	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	
10464.02	0.00	0.00	10464.02	0.00	0.00	0.00	560156.20	785232.00	0.00	0.00	0.00	KOP
10500.00	4.32	65.77	10499.97	0.56	0.56	1.24	560156.76	785233.24	12.00	0.00	12.00	
10600.00	16.32	65.77	10598.17	7.89	7.89	17.54	560164.09	785249.54	12.00	0.00	12.00	
10700.00	28.32	65.77	10690.51	23.45	23.45	52.10	560179.65	785284.10	12.00	-0.00	12.00	
10800.00	40.32	65.77	10772.95	46.55	46.55	103.42	560202.75	785335.42	12.00	0.00	12.00	
10804.01	40.80	65.77	10776.00	47.62	47.62	105.80	560203.82	785337.80	12.00	-0.00	12.00	3rd Bone Spring Carb :

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
10839.02	45.00	65.77	10801.64	57.40	57.40	127.52	560213.60	785359.52	12.00	-0.00	12.00	Build/Turn
10900.00	47.66	56.34	10843.79	78.77	78.77	166.00	560234.97	785398.00	4.37	-15.47	12.00	
11000.00	53.49	42.73	10907.44	128.96	128.96	224.24	560285.16	785456.24	5.83	-13.61	12.00	
11100.00	60.63	31.21	10961.91	195.99	195.99	274.27	560352.19	785506.27	7.14	-11.51	12.00	
11176.80	66.72	23.48	10996.00	257.10	257.10	305.74	560413.30	785537.74	7.92	-10.07	12.00	
11200.00	68.63	21.29	11004.81	276.94	276.94	313.91	560433.14	785545.91	8.24	-9.43	12.00	3rd Bone Spring Sand :
11300.00	77.14	12.44	11034.27	368.26	368.26	341.42	560524.46	785573.42	8.52	-8.86	12.00	
11400.00	85.93	4.17	11048.99	465.96	465.96	355.59	560622.16	785587.59	8.79	-8.27	12.00	
11457.06	91.00	359.56	11050.52	522.94	522.94	357.44	560679.14	785589.44	8.88	-8.08	12.00	
11500.00	91.00	359.56	11049.77	565.87	565.87	357.11	560722.07	785589.11	0.00	0.00	0.00	
11600.00	91.00	359.56	11048.02	665.85	665.85	356.34	560822.05	785588.34	0.00	0.00	0.00	LP
11700.00	91.00	359.56	11046.28	765.83	765.83	355.57	560922.03	785587.57	0.00	0.00	0.00	
11800.00	91.00	359.56	11044.53	865.82	865.82	354.81	561022.02	785586.81	0.00	0.00	0.00	
11900.00	91.00	359.56	11042.79	965.80	965.80	354.04	561122.00	785586.04	0.00	0.00	0.00	
12000.00	91.00	359.56	11041.04	1065.78	1065.78	353.27	561221.98	785585.27	0.00	0.00	0.00	
12100.00	91.00	359.56	11039.30	1165.76	1165.76	352.50	561321.96	785584.50	0.00	0.00	0.00	
12200.00	91.00	359.56	11037.55	1265.74	1265.74	351.73	561421.94	785583.73	0.00	0.00	0.00	
12300.00	91.00	359.56	11035.81	1365.72	1365.72	350.96	561521.92	785582.96	0.00	0.00	0.00	
12400.00	91.00	359.56	11034.06	1465.71	1465.71	350.19	561621.91	785582.19	0.00	0.00	0.00	
12500.00	91.00	359.56	11032.32	1565.69	1565.69	349.42	561721.89	785581.42	0.00	0.00	0.00	
12600.00	91.00	359.56	11030.57	1665.67	1665.67	348.65	561821.87	785580.65	0.00	0.00	0.00	
12700.00	91.00	359.56	11028.82	1765.65	1765.65	347.88	561921.85	785579.88	0.00	0.00	0.00	
12800.00	91.00	359.56	11027.08	1865.63	1865.63	347.11	562021.83	785579.11	0.00	0.00	0.00	
12900.00	91.00	359.56	11025.33	1965.62	1965.62	346.34	562121.82	785578.34	0.00	0.00	0.00	
13000.00	91.00	359.56	11023.59	2065.60	2065.60	345.57	562221.80	785577.57	0.00	0.00	0.00	
13100.00	91.00	359.56	11021.84	2165.58	2165.58	344.81	562321.78	785576.81	0.00	0.00	0.00	
13200.00	91.00	359.56	11020.10	2265.56	2265.56	344.04	562421.76	785576.04	0.00	0.00	0.00	
13300.00	91.00	359.56	11018.35	2365.54	2365.54	343.27	562521.74	785575.27	0.00	0.00	0.00	
13400.00	91.00	359.56	11016.61	2465.52	2465.52	342.50	562621.72	785574.50	0.00	0.00	0.00	
13500.00	91.00	359.56	11014.86	2565.51	2565.51	341.73	562721.71	785573.73	0.00	0.00	0.00	
13600.00	91.00	359.56	11013.12	2665.49	2665.49	340.96	562821.69	785572.96	0.00	0.00	0.00	
13700.00	91.00	359.56	11011.37	2765.47	2765.47	340.19	562921.67	785572.19	0.00	0.00	0.00	
13800.00	91.00	359.56	11009.63	2865.45	2865.45	339.42	563021.65	785571.42	0.00	0.00	0.00	
13900.00	91.00	359.56	11007.88	2965.43	2965.43	338.65	563121.63	785570.65	0.00	0.00	0.00	
14000.00	91.00	359.56	11006.14	3065.42	3065.42	337.88	563221.62	785569.88	0.00	0.00	0.00	
14100.00	91.00	359.56	11004.39	3165.40	3165.40	337.11	563321.60	785569.11	0.00	0.00	0.00	
14200.00	91.00	359.56	11002.65	3265.38	3265.38	336.34	563421.58	785568.34	0.00	0.00	0.00	
14300.00	91.00	359.56	11000.90	3365.36	3365.36	335.58	563521.56	785567.58	0.00	0.00	0.00	
14400.00	91.00	359.56	10999.16	3465.34	3465.34	334.81	563621.54	785566.81	0.00	0.00	0.00	
14500.00	91.00	359.56	10997.41	3565.32	3565.32	334.04	563721.52	785566.04	0.00	0.00	0.00	
14600.00	91.00	359.56	10995.67	3665.31	3665.31	333.27	563821.51	785565.27	0.00	0.00	0.00	
14700.00	91.00	359.56	10993.92	3765.29	3765.29	332.50	563921.49	785564.50	0.00	0.00	0.00	
14800.00	91.00	359.56	10992.17	3865.27	3865.27	331.73	564021.47	785563.73	0.00	0.00	0.00	
14900.00	91.00	359.56	10990.43	3965.25	3965.25	330.96	564121.45	785562.96	0.00	0.00	0.00	
15000.00	91.00	359.56	10988.68	4065.23	4065.23	330.19	564221.43	785562.19	0.00	0.00	0.00	
15100.00	91.00	359.56	10986.94	4165.22	4165.22	329.42	564321.42	785561.42	0.00	0.00	0.00	
15200.00	91.00	359.56	10985.19	4265.20	4265.20	328.65	564421.40	785560.65	0.00	0.00	0.00	
15300.00	91.00	359.56	10983.45	4365.18	4365.18	327.88	564521.38	785559.88	0.00	0.00	0.00	
15400.00	91.00	359.56	10981.70	4465.16	4465.16	327.11	564621.36	785559.11	0.00	0.00	0.00	
15500.00	91.00	359.56	10979.96	4565.14	4565.14	326.34	564721.34	785558.34	0.00	0.00	0.00	
15600.00	91.00	359.56	10978.21	4665.12	4665.12	325.58	564821.32	785557.58	0.00	0.00	0.00	
15700.00	91.00	359.56	10976.47	4765.11	4765.11	324.81	564921.31	785556.81	0.00	0.00	0.00	
15726.80	91.00	359.56	10976.00	4791.90	4791.90	324.60	564948.10	785556.60	0.00	0.00	0.00	PBHL 308H

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 (°)
Rustler	1636.00	0.00	0.00	1636.00	-2105.00	0.00	0.00	0	0
Salado	1971.00	0.00	0.00	1971.00	-1770.00	0.00	0.00	0	0
Tansill	3379.00	0.00	0.00	3379.00	-362.00	0.00	0.00	0	0
Yates	3536.00	0.00	0.00	3536.00	-205.00	0.00	0.00	0	0
Seven Rivers	3661.00	0.00	0.00	3661.00	-80.00	0.00	0.00	0	0
Delaware	5681.00	0.00	0.00	5681.00	1940.00	0.00	0.00	0	0
Bone Spring	8576.00	0.00	0.00	8576.00	4835.00	0.00	0.00	0	0
Avalon	9031.00	0.00	0.00	9031.00	5290.00	0.00	0.00	0	0
1st Bone Spring Carb	9299.00	0.00	0.00	9299.00	5558.00	0.00	0.00	0	0
1st Bone Spring Sand	9696.00	0.00	0.00	9696.00	5955.00	0.00	0.00	0	0
2nd Bone Spring Carb	9963.00	0.00	0.00	9963.00	6222.00	0.00	0.00	0	0
2nd Bone Spring Sand	10241.00	0.00	0.00	10241.00	6500.00	0.00	0.00	0	0
3rd Bone Spring Carb	10804.01	40.80	65.77	10776.00	7035.00	47.62	105.80	0	0
3rd Bone Spring Sand	11176.80	66.72	23.48	10996.00	7255.00	257.10	305.74	0	0

BLACK & TAN 27 FEDERAL COM 308H

String: <u>SURFACE</u>							
Hole Size:	<u>17.5</u>						
Top Setting Depth (MD):	<u>0</u>	Top Setting Depth (TVD):	<u>0</u>	Btm setting depth (MD):	<u>1700</u>	Btm setting depth (TVD):	<u>1700</u>
Size:	<u>13-3/8"</u>	Grade:	<u>J-55</u>	Weight (lbs/ft):	<u>54.5</u>	Joint (Butt,FJ, LTC,STC, SLH, N/A, Other):	<u>Buttress</u>
Condition (New/Used):	<u>New</u>		Standard (API/Non-API):		<u>API</u>		
Tapered String (Y/N)?: <u>N</u> If yes, need spec attachment							
Safety Factors							
Collapse Design Safety Factor:		<u>2.15</u>		Burst Design Safety Factor:		<u>1.82</u>	
Body Tensile Design Safety Factor type?: Dry/Buoyant				<u>Buoyant</u>			
Body Tensile Design Safety Factor:				<u>3.79</u>			
Joint Tensile Design Safety Factor type?: Dry/Buoyant				<u>Buoyant</u>			
Joint Tensile Design Safety Factor:				<u>4.04</u>			

String: <u>INTERMEDIATE</u>							
Hole Size:	<u>12.25</u>						
Top Setting Depth (MD):	<u>0</u>	Top Setting Depth (TVD):	<u>0</u>	Btm setting depth (MD):	<u>900</u>	Btm setting depth (TVD):	<u>900</u>
Size:	<u>9-5/8"</u>	Grade:	<u>J-55</u>	Weight (lbs/ft):	<u>40</u>	Joint (Butt,FJ, LTC,STC, SLH, N/A, Other):	<u>Buttress</u>

Condition (New/Used): New Standard (API/Non-API): API

Tapered String (Y/N)?: N
If yes, need spec attachment

Safety Factors

Collapse Design Safety Factor: 5.37 Burst Design Safety Factor: 1.7

Body Tensile Design Safety Factor type?: Dry/Buoyant Buoyant
Body Tensile Design Safety Factor: 1.96

Joint Tensile Design Safety Factor type?: Dry/Buoyant Buoyant
Joint Tensile Design Safety Factor: 2.24

Top Setting Depth (MD):	<u>900</u>	Top Setting Depth (TVD):	<u>900</u>	Btm setting depth (MD):	<u>5780</u>	Btm setting depth (TVD):	<u>5780</u>
Size:	<u>9-5/8"</u>	Grade:	<u>J-55</u>	Weight (lbs/ft):	<u>40</u>	Joint (Butt,FJ, LTC,STC, SLH, N/A, Other):	<u>LTC</u>

Condition (New/Used): New Standard (API/Non-API): API

Tapered String (Y/N)?: N
If yes, need spec attachment

Safety Factors

Collapse Design Safety Factor: 1.54 Burst Design Safety Factor: 1.87

Body Tensile Design Safety Factor type?: Dry/Buoyant Buoyant
Body Tensile Design Safety Factor: 2.15

Joint Tensile Design Safety Factor type?: Dry/Buoyant Buoyant
Joint Tensile Design Safety Factor: 1.8

String: PRODUCTION

Hole Size:	<u>8.75</u>						
Top Setting Depth (MD):	<u>0</u>	Top Setting Depth (TVD):	<u>0</u>	Btm setting depth (MD):	<u>15726.8</u>	Btm setting depth (TVD):	<u>10976</u>
Size:	<u>5-1/2"</u>	Grade:	<u>P-110</u>	Weight (lbs/ft):	<u>17</u>	Joint (Butt,FJ, LTC,STC, SLH, N/A, Other):	<u>Buttress</u>
Condition (New/Used):	<u>New</u>			Standard (API/Non-API):	<u>API</u>		
Safety Factors							
Collapse Design Safety Factor:	<u>1.35</u>			Burst Design Safety Factor:	<u>1.28</u>		
Body Tensile Design Safety Factor type?:	Dry/Buoyant			<u>Buoyant</u>			
Body Tensile Design Safety Factor:				<u>2.04</u>			
Joint Tensile Design Safety Factor type?:	Dry/Buoyant			<u>Buoyant</u>			
Joint Tensile Design Safety Factor:				<u>2.13</u>			
Tapered String (Y/N)?:	<u>N</u>						
If yes, need spec attachment							