

NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 05 2018

RECEIVED

Apache Corporation

Eddy County, NM (NAD 83 NME)

Palmillo 14-15 State

205H

30-015-44667

OH

Plan: Plan 2 02-01-18

Standard Planning Report

01 February, 2018

Planning Report

Database:	USA Compass	Well 205H
Company:	Apache Corporation	RKB @ 3459.00usft (H&P 482)
Project:	Eddy County, NM (NAD 83 NME)	RKB @ 3459.00usft (H&P 482)
State:	Palmillo 14-15 State	Grid
Well:	205H	Minimum Curvature
Wellbore:	OH	
Design:	Plan 2 02-01-18	

Project:	Eddy County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Palmillo 14-15 State		
Site Position:		Northing:	601,823.50 usft
From:	Map	Easting:	595,664.40 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 39' 15.60896 N
		Longitude:	104° 9' 24.52874 W
		Grid Convergence:	0.10 °

Well:	205H		
Well Position	+N/-S	380.20 usft	Northing:
	+E/-W	645.80 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 39' 19.36048 N
		Longitude:	104° 9' 16.96726 W
		Ground Level:	3,433.00 usft

Wellbore:	OH		
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Method	Method Name	Sample Date	Core Length	Core Depth	Field Strength
	HDGM	3/31/2018	7.42	60.47	48,121.00000000

Design:	Plan 2 02-01-18		
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Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (HVO)	N/A	Direction
	(ft)	(ft)	(ft)
	0.00	0.00	267.03

Measure	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,745.39	0.00	0.00	6,745.39	0.00	0.00	0.00	0.00	0.00	0.00
7,665.29	91.99	255.45	7,318.00	-148.94	-573.84	10.00	10.00	0.00	255.45
8,363.64	91.99	269.43	7,293.62	-240.56	-1,263.98	2.00	0.00	2.00	89.75
9,906.17	91.99	269.43	7,240.00	-256.02	-2,805.50	0.00	0.00	0.00	0.00 T1 v2 - Palmillo 14-
9,990.73	90.30	269.43	7,238.31	-256.86	-2,890.03	2.00	-2.00	0.01	179.71
12,524.85	90.30	269.43	7,225.00	-281.90	-5,424.00	0.00	0.00	0.00	0.00 BHL - Palmillo 14-1

Planning Report

Drill Bits	USA Compass	Local Co-ordinate Reference	Well 205H
Company	Apache Corporation	W/P Reference	RKB @ 3459.00usft (H&P 482)
Project	Eddy County, NM (NAD 83 NME)	W/P Reference	RKB @ 3459.00usft (H&P 482)
Site	Palmillo 14-15 State	North Reference	Grid
Well	205H	Survey Calculation Method	Minimum Curvature
Wellbore	OH		
Design	Plan 2 02-01-18		

Planned Survey									
Horizontal Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	True North (ft)	True East (ft)	Vertical Section (ft)	Dogleg Rate (/100usft)	Build Rate (/100usft)	Turn Rate (/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
309.00	0.00	0.00	309.00	0.00	0.00	0.00	0.00	0.00	0.00
TOP SALT									
673.00	0.00	0.00	673.00	0.00	0.00	0.00	0.00	0.00	0.00
TAN SILL									
884.00	0.00	0.00	884.00	0.00	0.00	0.00	0.00	0.00	0.00
YATES									
1,277.00	0.00	0.00	1,277.00	0.00	0.00	0.00	0.00	0.00	0.00
SEVEN RIVERS									
1,704.00	0.00	0.00	1,704.00	0.00	0.00	0.00	0.00	0.00	0.00
QUEEN									
2,044.00	0.00	0.00	2,044.00	0.00	0.00	0.00	0.00	0.00	0.00
GRAYBURG									
2,504.00	0.00	0.00	2,504.00	0.00	0.00	0.00	0.00	0.00	0.00
SAN ANDRES									
6,379.00	0.00	0.00	6,379.00	0.00	0.00	0.00	0.00	0.00	0.00
1ST BONE SPRING SAND									
6,589.00	0.00	0.00	6,589.00	0.00	0.00	0.00	0.00	0.00	0.00
2ND BONE SPRING CARB									
6,745.39	0.00	0.00	6,745.39	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 10.00°/100' Build									
6,800.00	5.46	255.45	6,799.92	-0.65	-2.52	2.55	10.00	10.00	0.00
6,900.00	15.46	255.45	6,898.13	-5.21	-20.07	20.31	10.00	10.00	0.00
7,000.00	25.46	255.45	6,991.70	-13.98	-53.86	54.51	10.00	10.00	0.00
7,100.00	35.46	255.45	7,077.79	-26.70	-102.87	104.11	10.00	10.00	0.00
7,200.00	45.46	255.45	7,153.78	-42.98	-165.60	167.61	10.00	10.00	0.00
7,268.84	52.34	255.45	7,199.00	-56.01	-215.78	218.39	10.00	10.00	0.00
2ND BONE SPRING SAND									
7,300.00	55.46	255.45	7,217.36	-62.33	-240.15	243.06	10.00	10.00	0.00
7,400.00	65.46	255.45	7,266.60	-84.16	-324.26	328.18	10.00	10.00	0.00
7,500.00	75.46	255.45	7,300.00	-107.81	-415.36	420.39	10.00	10.00	0.00
7,508.19	76.28	255.45	7,302.00	-109.80	-423.05	428.17	10.00	10.00	0.00
LANDING TOP									
7,600.00	85.46	255.45	7,316.55	-132.55	-510.69	516.88	10.00	10.00	0.00
7,665.29	91.99	255.45	7,318.00	-148.94	-573.84	580.79	10.00	10.00	0.00
LP, Hold 91.99° Inc, Begin 2.00°/100' Turn									
7,700.00	91.99	256.14	7,316.80	-157.45	-607.47	614.81	2.00	0.01	2.00
7,800.00	92.00	258.15	7,313.31	-179.68	-704.90	713.26	2.00	0.01	2.00
7,900.00	92.00	260.15	7,309.82	-198.50	-803.04	812.25	2.00	0.00	2.00
8,000.00	92.01	262.15	7,306.32	-213.88	-901.79	911.66	2.00	0.00	2.00
8,100.00	92.01	264.15	7,302.82	-225.80	-1,001.01	1,011.36	2.00	0.00	2.00
8,200.00	92.00	266.15	7,299.32	-234.25	-1,100.58	1,111.24	2.00	0.00	2.00
8,300.00	92.00	268.15	7,295.83	-239.22	-1,200.39	1,211.18	2.00	-0.01	2.00
8,363.64	91.99	269.43	7,293.62	-240.56	-1,263.98	1,274.75	2.00	-0.01	2.00
Hold 269.43° Azm									
8,400.00	91.99	269.43	7,292.36	-240.93	-1,300.32	1,311.05	0.00	0.00	0.00
8,500.00	91.99	269.43	7,288.88	-241.93	-1,400.25	1,410.91	0.00	0.00	0.00
8,600.00	91.99	269.43	7,285.40	-242.93	-1,500.19	1,510.76	0.00	0.00	0.00
8,700.00	91.99	269.43	7,281.93	-243.93	-1,600.12	1,610.61	0.00	0.00	0.00
8,800.00	91.99	269.43	7,278.45	-244.93	-1,700.05	1,710.46	0.00	0.00	0.00
8,900.00	91.99	269.43	7,274.97	-245.94	-1,799.99	1,810.31	0.00	0.00	0.00
9,000.00	91.99	269.43	7,271.50	-246.94	-1,899.92	1,910.17	0.00	0.00	0.00
9,100.00	91.99	269.43	7,268.02	-247.94	-1,999.86	2,010.02	0.00	0.00	0.00

Planning Report

Database:	USA Compass	Local Coordinate Reference:	Well 205H
Company:	Apache Corporation	WVP Reference:	RKB @ 3459.00usft (H&P 482)
Project:	Eddy County, NM (NAD 83 NME)	MR Reference:	RKB @ 3459.00usft (H&P 482)
Site:	Palmillo 14-15 State	NAD Reference:	Grid
Well:	205H	Survey Calculations Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 02-01-18		

Planned Survey:									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	NAD (usft)	RAW (usft)	Vertical Section (usft)	Depth Rat (1/100usft)	Build Rat (1/100usft)	Turn Rat (1/100usft)
9,200.00	91.99	269.43	7,264.55	-248.94	-2,099.79	2,109.87	0.00	0.00	0.00
9,300.00	91.99	269.43	7,261.07	-249.95	-2,199.73	2,209.72	0.00	0.00	0.00
9,400.00	91.99	269.43	7,257.59	-250.95	-2,299.66	2,309.58	0.00	0.00	0.00
9,500.00	91.99	269.43	7,254.12	-251.95	-2,399.60	2,409.43	0.00	0.00	0.00
9,600.00	91.99	269.43	7,250.64	-252.95	-2,499.53	2,509.28	0.00	0.00	0.00
9,700.00	91.99	269.43	7,247.17	-253.95	-2,599.47	2,609.13	0.00	0.00	0.00
9,800.00	91.99	269.43	7,243.69	-254.96	-2,699.40	2,708.98	0.00	0.00	0.00
9,900.00	91.99	269.43	7,240.21	-255.96	-2,799.33	2,808.84	0.00	0.00	0.00
9,906.17	91.99	269.43	7,240.00	-256.02	-2,805.50	2,815.00	0.00	0.00	0.00
Begin 2.00°/100' Drop									
9,990.73	90.30	269.43	7,238.31	-256.86	-2,890.04	2,899.46	2.00	-2.00	0.01
Hold 90.30° Inc									
10,000.00	90.30	269.43	7,238.26	-256.95	-2,899.31	2,908.73	0.00	0.00	0.00
10,100.00	90.30	269.43	7,237.73	-257.94	-2,999.30	3,008.64	0.00	0.00	0.00
10,200.00	90.30	269.43	7,237.21	-258.93	-3,099.29	3,108.55	0.00	0.00	0.00
10,300.00	90.30	269.43	7,236.68	-259.92	-3,199.29	3,208.46	0.00	0.00	0.00
10,400.00	90.30	269.43	7,236.16	-260.91	-3,299.28	3,308.37	0.00	0.00	0.00
10,500.00	90.30	269.43	7,235.63	-261.89	-3,399.27	3,408.28	0.00	0.00	0.00
10,600.00	90.30	269.43	7,235.11	-262.88	-3,499.27	3,508.19	0.00	0.00	0.00
10,700.00	90.30	269.43	7,234.58	-263.87	-3,599.26	3,608.10	0.00	0.00	0.00
10,800.00	90.30	269.43	7,234.06	-264.86	-3,699.26	3,708.01	0.00	0.00	0.00
10,900.00	90.30	269.43	7,233.53	-265.85	-3,799.25	3,807.92	0.00	0.00	0.00
11,000.00	90.30	269.43	7,233.01	-266.83	-3,899.24	3,907.83	0.00	0.00	0.00
11,100.00	90.30	269.43	7,232.48	-267.82	-3,999.24	4,007.74	0.00	0.00	0.00
11,200.00	90.30	269.43	7,231.96	-268.81	-4,099.23	4,107.65	0.00	0.00	0.00
11,300.00	90.30	269.43	7,231.43	-269.80	-4,199.22	4,207.56	0.00	0.00	0.00
11,400.00	90.30	269.43	7,230.91	-270.79	-4,299.22	4,307.47	0.00	0.00	0.00
11,500.00	90.30	269.43	7,230.38	-271.77	-4,399.21	4,407.38	0.00	0.00	0.00
11,600.00	90.30	269.43	7,229.86	-272.76	-4,499.21	4,507.30	0.00	0.00	0.00
11,700.00	90.30	269.43	7,229.33	-273.75	-4,599.20	4,607.21	0.00	0.00	0.00
11,800.00	90.30	269.43	7,228.81	-274.74	-4,699.19	4,707.12	0.00	0.00	0.00
11,900.00	90.30	269.43	7,228.28	-275.73	-4,799.19	4,807.03	0.00	0.00	0.00
12,000.00	90.30	269.43	7,227.76	-276.71	-4,899.18	4,906.94	0.00	0.00	0.00
12,100.00	90.30	269.43	7,227.23	-277.70	-4,999.17	5,006.85	0.00	0.00	0.00
12,200.00	90.30	269.43	7,226.71	-278.69	-5,099.17	5,106.76	0.00	0.00	0.00
12,300.00	90.30	269.43	7,226.18	-279.68	-5,199.16	5,206.67	0.00	0.00	0.00
12,400.00	90.30	269.43	7,225.66	-280.67	-5,299.16	5,306.58	0.00	0.00	0.00
12,500.00	90.30	269.43	7,225.13	-281.65	-5,399.15	5,406.49	0.00	0.00	0.00
12,524.85	90.30	269.43	7,225.00	-281.90	-5,424.00	5,431.32	0.00	0.00	0.00
TD at 12524.85									

Planning Report

Drillbit:	USA Compass	Local Coordinates:	Well 205H
Company:	Apache Corporation	TVD Reference:	RKB @ 3459.00usft (H&P 482)
Region:	Eddy County, NM (NAD 83 NME)	MD Reference:	RKB @ 3459.00usft (H&P 482)
State:	Palmillo 14-15 State	North Reference:	Grid
Well:	205H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 02-01-18		

Design Targets										
Target Name	Horizontal (ft)	Vertical (ft)	TVD (ft)	N/C (ft)	E/W (ft)	North (ft)	East (ft)	Latitude	Longitude	
BHL - Palmillo 14-15 § - plan hits target center - Point	0.00	0.00	7,225.00	-281.90	-5,424.00	601,921.80	590,886.20	32° 39' 16.65682 N	04° 10' 20.41824 W	
T1 v2 - Palmillo 14-15 - plan hits target center - Point	0.00	0.00	7,240.00	-256.02	-2,805.50	601,947.68	593,504.70	32° 39' 16.87258 N	104° 9' 49.78873 W	
FTP - Palmillo 14-15 § - plan misses target center by 87.98usft at 7499.18usft MD (7299.79 TVD, -107.61 N, -414.59 E) - Point	0.00	0.00	7,318.00	-22.90	-429.90	602,180.80	595,880.30	32° 39' 19.14101 N	104° 9' 21.99636 W	

Formations						
Vertical Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
309.00	309.00	TOP SALT		0.00		
673.00	673.00	TAN SILL				
884.00	884.00	YATES				
1,277.00	1,277.00	SEVEN RIVERS				
1,704.00	1,704.00	QUEEN				
2,044.00	2,044.00	GRAYBURG				
2,504.00	2,504.00	SAN ANDRES				
6,379.00	6,379.00	1ST BONE SPRING SAND				
6,589.00	6,589.00	2ND BONE SPRING CARB				
7,268.84	7,199.00	2ND BONE SPRING SAND				
7,508.19	7,302.00	LANDING TOP				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates (N/E)	Local Coordinates (W/E)	Comments	
6,745.39	6,745.39	0.00	0.00	KOP, Begin 10.00°/100' Build	
7,665.29	7,318.00	-148.94	-573.84	LP, Hold 91.99° Inc, Begin 2.00°/100' Turn	
8,363.64	7,293.62	-240.56	-1,263.98	Hold 269.43° Azm	
9,906.17	7,240.00	-256.02	-2,805.50	Begin 2.00°/100' Drop	
9,990.73	7,238.31	-256.86	-2,890.04	Hold 90.30° Inc	
12,524.85	7,225.00	-281.90	-5,424.00	TD at 12524.85	

Project: Eddy County, NM (NAD 83 NME)
Site: Palmilillo 14-15 State
Well: 205H
Wellbore: OH
Design: Plan 2 02-01-18
Rig: H&P 482



Accuracy to Grid North
True North: 0.10°
Magnetic North: 7.32°
Magnetic Field
Strength: 48121.06nT
Dip Angle: 66.47°
Model: HDGM

WELL DETAILS

	Ground Level	3433.00
North	99810.20	32° 39' 19.9048 N
East	602203.70	104° 9' 18.9672 W

SECTION DETAILS

Sec	MD	Inc	Asi	TVD	+N/S	+E/W	Dleg	TFace	Used	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 10,007'100' Build
2	6745.39	0.00	0.00	6745.39	-148.94	-573.84	10.00	255.45	300.79	0.00	LP Hold 91.99° Inc. Begin 2,007'100' Turn
3	7665.29	91.99	255.45	7318.00	-148.94	-573.84	10.00	255.45	300.79	0.00	Hold 289.43° Azim
4	8583.84	91.99	255.45	7235.86	-148.94	-573.84	2.00	68.15	1274.74	11.12	Begin 2,007'100' Drop
5	9500.17	91.99	255.45	7153.69	-148.94	-573.84	2.00	173.71	2889.46	11.12	Palmilillo 14-15 State 205H
6	10420.89	91.99	255.45	7071.52	-148.94	-573.84	2.00	173.71	2889.46	11.12	Hold 90.30° Inc
7	11294.85	90.30	288.43	7225.00	-281.90	-5424.00	0.00	0.00	5431.32	BHL - Palmilillo 14-15 State 205H	

DESIGN TARGET DETAILS

Name	TVD	AN/S	4E/W	North	East	Latitude	Longitude
BHL - Palmilillo 14-15 State 205H	7225.00	-281.90	-5424.00	901221.80	595890.30	32° 39' 19.9048 N	104° 9' 18.9672 W
T1 V2 - Palmilillo 14-15 State 205H	7153.69	-281.90	-5424.00	901221.80	595890.30	32° 39' 19.9048 N	104° 9' 18.9672 W
FTP - Palmilillo 14-15 State 205H	7302.00	-281.90	-5424.00	901221.80	595890.30	32° 39' 19.9048 N	104° 9' 18.9672 W

FORMATION TOP DETAILS

Formation	Dip	Angle	DipDir
TOP SALT	0.00		
TAN SALT	0.00		
YATES	0.00		
SEVEN RIVERS	0.00		
QUEEN	0.00		
GRAYBURG	0.00		
SAN ANDRES	0.00		
1ST BONE SPRING SAND	0.00		
2ND BONE SPRING SAND	0.00		
LANDING TOP	0.00		

