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DISTRICT II-ARTESIA O.C.D.

Apache

5D Survey Report

Apache Corporation

Field Name: *Apache NM (Nad 83 NMEZ)*
Site Name: *Palmillo 26 State COM (314H,213H)*
Well Name: *Palmillo 26 State COM 213H*
File number: *13357772*
Survey: *Definitive survey*

29 October 2018

Weatherford®

Apache

Weatherford

Palmillo 26 State COM 213H

Field Name: Apache NM (Nad 83 NMEZ)

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: Palmillo 26 State COM (314H,213H)

Units: US ft
North Reference: Grid
Convergence Angle: 0.10
Position:
Northing: 594674.50 US ft
Latitude: 32.634659955
Easting: 600955.60 US ft
Longitude: -104.139663731
Elevation above MSL: 3350.00 US ft
Comment: Eddy Co. New Mexico

Slot: Palmillo 26 State COM 213H

Position (Relative to Site Centre)
+N/-S: 40.00 US ft
Northing: 594714.50 US ft
Latitude: 32.634769904
+E/-W: -0.10 US ft
Easting: 600955.50 US ft
Longitude: -104.139663819
Slot TVD Reference: Ground Elevation
Elevation above MSL: 3358.00 US ft
Comment:

Well: Palmillo 26 State COM 213H

Type: Main well
UWI:
File Number: 13357772
Comment: HP 482
Closure Distance: 4935.82US ft
Closure Azimuth: 265.41°
Vertical Section: Position of Origin (Relative to Slot centre)
+N/-S: -0.00 US ft
+E/-W: 0.00 US ft
Az: 265.46°

Drill floor: Survey Name: Definitive Survey
Rig Height (Drill Floor): 26.00US ft **Elevation above MSL:** 3384.00US ft **Inclination:** 0.00° **Azimuth:** 0.00°

Survey Name: Definitive Survey
Date: 12/Jun/2018
Survey Tool: *See Survey Tool Ranges below.*
Comment:
Company:

Magnetic Model:
Model Name: Surcon IFR
Date: 15/Oct/2018
Field Strength: 47996.0nT
Declination: 7.46°
Dip: 60.41°

Tie Point:
MD: 0.00 US ft
Inclination: 0.00°
Azimuth: 0.00°
TVD: -0.00 US ft
North Offset: -0.00 US ft
East Offset: 0.00 US ft

Survey Tool Ranges:

Name	Start MD(USFt)	End MD(USFt)	Source Survey
VES GyroFlex V3	0.00	6958.06	VES Gyro

Survey Tool Ranges:			
Name	Start MD(USFt)	End MD(USFt)	Source Survey
MWD + IFR	6958.06	7965.00	MWD 3
MWD + IFR + Sag Corr + MS	7965.00	12477.00	MWD 4

Wellpath created using minimum curvature.

Survey 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)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
6958.06	0.98	143.70	6943.23	-100.07	-221.53	117.98	0.96	594492.97	601073.48	VES Gyro Tie-In
7114.00	0.78	150.52	7099.15	-101.22	-223.53	119.29	0.14	594490.97	601074.79	First WFT MWD Svy
7209.00	8.94	253.71	7193.77	-94.25	-226.17	112.51	9.63	594488.33	601068.01	
7256.00	15.11	261.03	7239.72	-84.56	-228.15	102.94	13.50	594486.35	601058.44	
7303.00	20.11	260.83	7284.50	-70.39	-230.40	88.91	10.64	594484.10	601044.41	
7350.00	25.53	260.36	7327.80	-52.24	-233.38	70.93	11.54	594481.12	601026.43	
7397.00	30.05	262.74	7369.37	-30.38	-236.57	49.26	9.90	594477.93	601004.76	
7444.00	34.85	264.56	7409.02	-5.19	-239.33	24.21	10.42	594475.17	600979.71	
7492.00	40.09	266.98	7447.11	24.00	-241.45	-4.90	11.34	594473.05	600950.60	
7539.00	47.16	267.96	7481.11	56.38	-242.86	-37.28	15.11	594471.64	600918.22	
7587.00	52.56	266.80	7512.04	93.04	-244.55	-73.92	11.40	594469.95	600881.58	
7634.00	56.83	266.21	7539.20	131.39	-246.89	-112.19	9.14	594467.61	600843.31	
7681.00	61.01	267.79	7563.46	171.61	-248.99	-152.38	9.35	594465.51	600803.12	
7728.00	65.70	269.87	7584.53	213.53	-249.83	-194.37	10.73	594464.67	600761.13	
7776.00	69.35	271.04	7602.88	257.71	-249.47	-238.71	7.93	594465.03	600716.79	
7823.00	73.91	270.71	7617.69	302.10	-248.79	-283.30	9.72	594465.71	600672.20	
7871.00	78.30	269.42	7629.21	348.54	-248.74	-329.88	9.51	594465.76	600625.62	
7918.00	81.79	269.49	7637.34	394.71	-249.18	-376.17	7.43	594465.32	600579.33	
7965.00	87.27	270.54	7641.81	441.33	-249.17	-422.93	11.87	594465.33	600532.57	
7989.00	88.78	272.23	7642.64	465.18	-248.59	-446.91	9.44	594465.91	600508.59	
8084.00	92.91	270.90	7641.24	559.61	-246.00	-541.84	4.57	594468.50	600413.66	
8179.00	93.05	270.64	7636.30	654.08	-244.72	-636.70	0.31	594469.78	600318.80	
8273.00	93.12	268.84	7631.24	747.68	-245.15	-730.56	1.91	594469.35	600224.94	
8368.00	93.34	268.02	7625.89	842.40	-247.75	-825.38	0.89	594466.75	600130.12	
8462.00	93.12	268.85	7620.59	936.12	-250.31	-919.19	0.91	594464.19	600036.31	
8557.00	93.33	267.81	7615.25	1030.85	-253.07	-1014.00	1.12	594461.43	599941.50	
8651.00	94.46	268.41	7608.86	1124.53	-256.17	-1107.73	1.36	594458.33	599847.77	
8746.00	94.95	268.07	7601.07	1219.10	-259.07	-1202.36	0.63	594455.43	599753.14	
8841.00	95.02	268.19	7592.82	1313.64	-262.16	-1296.95	0.15	594452.34	599658.55	
8935.00	94.95	267.71	7584.65	1407.19	-265.51	-1390.54	0.51	594448.99	599564.96	
9030.00	95.30	267.49	7576.16	1501.75	-269.47	-1485.07	0.43	594445.03	599470.43	
9124.00	96.01	266.97	7566.90	1595.24	-273.99	-1578.51	0.93	594440.51	599376.99	
9219.00	95.87	266.86	7557.07	1689.70	-279.08	-1672.86	0.19	594435.42	599282.64	
9314.00	95.93	266.15	7547.30	1784.18	-284.84	-1767.18	0.75	594429.66	599188.32	
9408.00	95.73	266.43	7537.75	1877.69	-290.89	-1860.50	0.36	594423.61	599095.00	
9503.00	94.95	266.94	7528.91	1972.25	-296.36	-1954.93	0.98	594418.14	599000.57	
9598.00	94.74	266.19	7520.89	2066.89	-302.03	-2049.42	0.82	594412.47	598906.08	
9692.00	94.67	267.43	7513.18	2160.55	-307.25	-2142.95	1.32	594407.25	598812.55	
9787.00	94.39	267.26	7505.67	2255.20	-311.63	-2237.55	0.34	594402.87	598717.95	
9881.00	95.30	268.21	7497.74	2348.79	-315.33	-2331.14	1.40	594399.17	598624.36	
9976.00	96.57	267.36	7487.91	2443.20	-318.99	-2425.56	1.61	594395.51	598529.94	
10070.00	97.91	268.13	7476.07	2536.37	-322.66	-2518.74	1.64	594391.84	598436.76	
10165.00	96.22	269.06	7464.38	2630.51	-324.97	-2612.98	2.03	594389.53	598342.52	
10260.00	94.25	268.66	7455.71	2724.94	-326.85	-2707.56	2.12	594387.65	598247.94	
10354.00	91.30	269.26	7451.16	2818.64	-328.55	-2801.43	3.20	594385.95	598154.07	
10449.00	88.29	268.71	7451.50	2913.45	-330.23	-2896.40	3.22	594384.27	598059.10	
10543.00	85.20	268.63	7456.84	3007.14	-332.41	-2990.21	3.29	594382.09	597965.29	
10638.00	85.27	268.42	7464.73	3101.68	-334.85	-3084.85	0.23	594379.65	597870.65	
10732.00	86.04	268.43	7471.85	3195.28	-337.42	-3178.54	0.82	594377.08	597776.96	
10827.00	86.46	268.15	7478.07	3289.96	-340.25	-3273.30	0.53	594374.25	597682.20	

Survey 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)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
10922.00	85.55	268.61	7484.69	3384.61	-342.93	-3368.03	1.07	594371.57	597587.47	
11016.00	85.97	268.17	7491.64	3478.22	-345.57	-3461.73	0.65	594368.93	597493.77	
11111.00	84.29	267.94	7499.70	3572.78	-348.78	-3556.33	1.78	594365.72	597399.17	
11205.00	83.65	268.00	7509.57	3666.17	-352.09	-3649.75	0.68	594362.41	597305.75	
11300.00	85.13	268.95	7518.86	3760.58	-354.61	-3744.26	1.85	594359.89	597211.24	
11394.00	88.22	270.03	7524.31	3854.18	-355.44	-3838.09	3.48	594359.06	597117.41	
11489.00	88.71	270.22	7526.86	3948.83	-355.23	-3933.05	0.55	594359.27	597022.45	
11583.00	88.92	269.57	7528.80	4042.53	-355.40	-4027.03	0.73	594359.10	596928.47	
11678.00	90.53	269.03	7529.26	4137.31	-356.57	-4122.02	1.79	594357.93	596833.48	
11773.00	91.16	268.63	7527.86	4232.13	-358.50	-4216.99	0.79	594356.00	596738.51	
11867.00	90.32	266.81	7526.64	4326.05	-362.24	-4310.90	2.13	594352.26	596644.60	
11962.00	89.69	266.88	7526.63	4421.02	-367.47	-4405.76	0.67	594347.03	596549.74	
12057.00	90.11	267.45	7526.80	4515.98	-372.17	-4500.64	0.75	594342.33	596454.86	
12151.00	90.46	267.56	7526.33	4609.92	-376.26	-4594.55	0.39	594338.24	596360.95	
12246.00	90.60	267.29	7525.45	4704.86	-380.53	-4689.45	0.32	594333.97	596266.05	
12340.00	90.46	266.19	7524.58	4798.83	-385.88	-4783.29	1.18	594328.62	596172.21	
12415.00	90.53	265.98	7523.94	4873.82	-391.00	-4858.11	0.30	594323.50	596097.39	Last WFT MWD Svy
12477.00	90.50	266.00	7523.38	4935.81	-395.33	-4919.96	0.06	594319.17	596035.54	Proj to TD @ 12477'MD

COMP
C105
HZ