



Weatherford

Drilling Services
10000 West County Rd. 116
P.O. Box 61028
Midland, TX USA 79711
Tel. (432) 561-8892 Fax (432) 561-8895

Apache Corporation
303 Veterans Airpark Lane
Midland, TX, 79705

Date: August 9, 2019

Attention: John Vacek

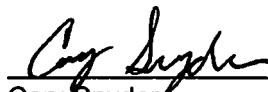
Re: Apache Corporation
Well: Ghost Rider 22-15 FED COM 205H
Lea County, New Mexico

30-025-45772
N 22 245 32E 442 FSL + 2286 FWL (SURF)
K 15 245 32E 2589 FSL + 2323 FWL (BH)

Enclosed, please find the original survey performed on the referenced well by Precision Energy Services, Inc. (P-5 No. 676004), a Weatherford company. Other information required by your office is as follows:

Name & Title Of Surveyor	Well Number	Surveyed Depths	Dates Performed	Type of Survey
Cory Snyder	205H	10,112 MD	8/1/2019	Measurement
MWD Ops. Coordinator		18,076 MD	8/8/2019	While Drilling

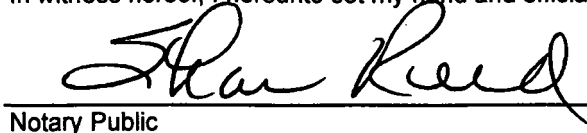
A notarized plan vs. actual is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

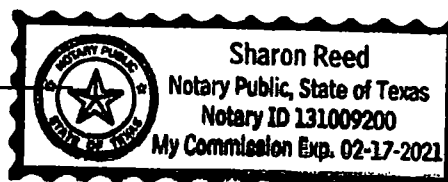


Cory Snyder
MWD Ops. Coordinator

On this, the 9th day of August, 2019, before me a notary public, the undersigned officer, personally appeared Cory Snyder, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof, I hereunto set my hand and official seal.


Notary Public



5D Survey Report

Apache Corporation

Field Name: Apache NM (Nad 83 NMEZ)
Site Name: Ghost Rider Pad 3S
Well Name: Ghost Rider 22-15 Fed Com 205H
File number: 13840974
Survey: Definitive survey

9 August 2019

30-025-45772

N 22 245 32E 442 FSL + 2286 FWL (Surf)
K 15 245 32E 2589 FSL + 2323 FWL (BH)

**Weatherford®**

5D Survey Report

Apache


Weatherford

Ghost Rider 22-15 Fed Com 205H

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: Ghost Rider Pad 35	Units: US ft	North Reference: Grid	Convergence Angle: 0.36	
	Position:	Northing: 435975.40 US ft	Latitude: 32.196804379	
		Easting: 748254.10 US ft	Longitude: -103.664408574	
	Elevation above MSL: 3592.00 US ft		Comment: Lea Co, NM	
Slot: Ghost Rider 22-15 Fed Com 205H	Position (Relative to Site Centre)			
	+N/-S: 76.80 US ft	Northing: 436052.20 US ft	Latitude: 32.197011642	
	+E/-W: 224.40 US ft	Easting: 748478.50 US ft	Longitude: -103.663681625	
	Elevation above MSL: 3593.00 US ft		Comment:	
Well: Ghost Rider 22-15 Fed Com 205H	Type: Main well	UWI:		
	File Number: 13840974	Comment: H&P 482		
	Closure Distance: 7428.96 US ft	Closure Azimuth: 359.98°		
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: 0.00 US ft	+E/-W: -0.00 US ft	Az: 359.88°	

Drill floor: Survey Name: Definitive Survey
Rig Height (Drill Floor): 26.00 US ft **Elevation above MSL:** 3619.00 US ft **Inclination:** 0.00° **Azimuth:** 0.00°

Survey Name: Definitive Survey

Date: 28/Jun/2018 **Survey Tool:** See Survey **Comment:** **Company:**
 Tool Ranges below.

Magnetic Model:

Model Name: Surcon **Date:** 01/Aug/2019 **Field Strength:** **Declination:** 6.77° **Dip:** 59.87°
 IFR 47857.0 nT

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 (US ft)	End MD (US ft)	Source Survey
VES GyroFlex V3	0.00	9957.00	VES Gyro

5D Survey Report

Survey Tool Ranges:			
Name	Start MD(usft)	End MD(usft)	Source Survey
MWD + IFR + MS	9957.00	10585.00	WFT MWD 03
MWD + IFR + MS	10585.00	10821.00	WFT MWD 04
MWD + IFR + Sag Corr + MS	10821.00	18139.00	WFT MWD 05

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)	H.Offset (US ft)	E.Offset (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
9957.00	1.16	19.95	9942.15	-333.22	-333.39	-84.82	0.20	435718.81	748393.68	Tie on VES Gyro
10112.00	2.07	5.69	10097.09	-328.96	-329.13	-84.01	0.64	435723.07	748394.49	First WFT MWD Svy
10160.00	7.35	358.12	10144.91	-325.02	-325.20	-84.02	11.05	435727.00	748394.48	
10207.00	13.11	2.30	10191.15	-316.69	-316.86	-83.91	12.35	435735.34	748394.59	
10254.00	18.76	4.03	10236.32	-303.81	-303.99	-83.16	12.06	435748.21	748395.34	
10301.00	24.57	5.65	10279.98	-286.54	-286.71	-81.67	12.43	435765.49	748396.83	
10349.00	29.44	6.00	10322.74	-264.87	-265.03	-79.45	10.15	435787.17	748399.05	
10396.00	35.06	6.69	10362.47	-239.96	-240.12	-76.67	11.98	435812.08	748401.83	
10443.00	40.34	7.95	10399.65	-211.47	-211.62	-72.99	11.35	435840.58	748405.51	
10490.00	46.04	7.07	10433.90	-179.60	-179.74	-68.80	12.19	435872.46	748409.70	
10538.00	51.65	6.38	10465.48	-143.73	-143.87	-64.58	11.74	435908.33	748413.92	
10585.00	57.57	5.79	10492.68	-105.66	-105.78	-60.53	12.64	435946.42	748417.97	
10641.00	64.39	6.35	10519.83	-57.00	-57.12	-55.34	12.21	435995.08	748423.16	
10679.00	68.88	6.73	10534.90	-22.36	-22.47	-51.37	11.85	436029.73	748427.13	
10727.00	73.47	6.63	10550.38	22.74	22.64	-46.09	9.56	436074.84	748432.41	
10774.00	79.02	7.08	10561.56	68.03	67.95	-40.64	11.85	436120.15	748437.86	
10821.00	82.06	6.94	10569.28	114.03	113.96	-34.98	6.47	436166.16	748443.52	
10866.00	84.67	5.84	10574.48	158.44	158.37	-30.01	6.29	436210.57	748448.49	
10913.00	85.51	4.17	10578.50	205.08	205.02	-25.92	3.97	436257.22	748452.58	
10960.00	86.44	2.89	10581.80	251.86	251.81	-23.03	3.36	436304.01	748455.47	
11007.00	88.47	0.06	10583.89	298.79	298.75	-21.83	7.41	436350.95	748456.67	
11054.00	88.68	0.05	10585.06	345.78	345.73	-21.78	0.45	436397.93	748456.72	
11148.00	90.71	0.32	10585.56	439.77	439.72	-21.48	2.18	436491.92	748457.02	
11243.00	91.13	0.64	10584.03	534.75	534.71	-20.68	0.56	436586.91	748457.82	
11337.00	90.57	0.70	10582.64	628.73	628.69	-19.58	0.60	436680.89	748458.92	
11432.00	89.45	0.19	10582.62	723.72	723.69	-18.85	1.30	436775.89	748459.65	
11526.00	90.01	359.58	10583.06	817.72	817.68	-19.03	0.88	436869.88	748459.47	
11621.00	90.43	359.33	10582.70	912.72	912.68	-19.94	0.51	436964.88	748458.56	
11715.00	89.66	359.33	10582.62	1006.71	1006.67	-21.04	0.82	437058.87	748457.46	
11810.00	89.87	359.54	10583.01	1101.71	1101.67	-21.97	0.31	437153.87	748456.53	
11904.00	89.87	359.11	10583.23	1195.71	1195.66	-23.08	0.46	437247.86	748455.42	
11999.00	90.57	359.01	10582.86	1290.69	1290.65	-24.64	0.74	437342.85	748453.86	
12093.00	90.78	359.41	10581.76	1384.68	1384.63	-25.94	0.48	437436.83	748452.56	
12187.00	89.94	0.55	10581.16	1478.68	1478.63	-25.97	1.51	437530.83	748452.53	
12281.00	90.22	0.17	10581.03	1572.67	1572.62	-25.38	0.50	437624.82	748453.12	
12376.00	89.17	0.88	10581.54	1667.66	1667.62	-24.51	1.33	437719.82	748453.99	
12470.00	89.66	1.09	10582.50	1761.64	1761.60	-22.89	0.57	437813.80	748455.61	
12564.00	89.03	0.07	10583.57	1855.63	1855.58	-21.94	1.28	437907.78	748456.56	
12658.00	89.87	0.44	10584.48	1949.62	1949.58	-21.52	0.98	438001.78	748456.98	
12753.00	88.75	1.10	10585.62	2044.60	2044.56	-20.25	1.37	438096.76	748458.25	
12847.00	89.59	358.38	10586.98	2138.58	2138.54	-20.67	3.03	438190.74	748457.83	
12941.00	89.66	0.31	10587.60	2232.57	2232.53	-21.75	2.05	438284.73	748456.75	
13035.00	90.71	0.64	10587.29	2326.56	2326.52	-20.97	1.17	438378.72	748457.53	
13130.00	91.55	0.61	10585.42	2421.53	2421.50	-19.93	0.88	438473.70	748458.57	
13224.00	92.46	0.25	10582.13	2515.47	2515.44	-19.23	1.04	438567.64	748459.27	
13319.00	92.18	359.61	10578.29	2610.39	2610.36	-19.34	0.73	438662.56	748459.16	
13413.00	92.11	358.66	10574.77	2704.32	2704.28	-20.76	1.01	438756.48	748457.74	
13507.00	90.01	359.00	10573.03	2798.28	2798.24	-22.68	2.26	438850.44	748455.82	
13601.00	90.85	358.95	10572.32	2892.26	2892.22	-24.36	0.90	438944.42	748454.14	

5D Survey Report

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
13696.00	91.76	358.40	10570.16	2987.22	2987.17	-26.56	1.12	439039.37	748451.94	
13790.00	90.43	359.40	10568.36	3081.18	3081.13	-28.36	1.77	439133.33	748450.14	
13885.00	90.57	359.75	10567.53	3176.18	3176.12	-29.07	0.40	439228.32	748449.43	
13979.00	90.85	359.71	10566.37	3270.17	3270.12	-29.51	0.30	439322.32	748448.99	
14074.00	91.06	358.76	10564.79	3365.15	3365.09	-30.78	1.02	439417.29	748447.72	
14168.00	90.29	359.60	10563.68	3459.14	3459.08	-32.12	1.21	439511.28	748446.38	
14263.00	90.22	1.42	10563.26	3554.12	3554.07	-31.28	1.92	439606.27	748447.22	
14357.00	90.08	1.57	10563.01	3648.09	3648.03	-28.82	0.22	439700.23	748449.68	
14451.00	90.64	1.50	10562.42	3742.05	3742.00	-26.31	0.60	439794.20	748452.19	
14545.00	91.76	1.51	10560.45	3835.99	3835.94	-23.84	1.19	439888.14	748454.66	
14640.00	90.64	1.10	10558.46	3930.93	3930.90	-21.67	1.26	439983.10	748456.83	
14734.00	89.73	1.27	10558.16	4024.91	4024.88	-19.73	0.98	440077.08	748458.77	
14828.00	90.50	1.65	10557.97	4118.87	4118.84	-17.34	0.91	440171.04	748461.16	
14922.00	90.92	1.20	10556.80	4212.83	4212.81	-15.00	0.65	440265.01	748463.50	
15016.00	89.73	359.87	10556.27	4306.82	4306.80	-14.12	1.90	440359.00	748464.38	
15111.00	90.36	359.90	10556.20	4401.82	4401.80	-14.31	0.66	440454.00	748464.19	
15206.00	90.85	359.51	10555.19	4496.81	4496.79	-14.80	0.66	440548.99	748463.70	
15300.00	91.83	359.89	10552.99	4590.78	4590.76	-15.29	1.12	440642.96	748463.21	
15394.00	90.50	359.12	10551.08	4684.76	4684.74	-16.10	1.63	440736.94	748462.40	
15489.00	90.71	358.81	10550.08	4779.74	4779.71	-17.82	0.39	440831.91	748460.68	
15583.00	89.94	359.12	10549.55	4873.73	4873.70	-19.52	0.88	440925.90	748458.98	
15678.00	90.15	359.27	10549.47	4968.72	4968.69	-20.85	0.27	441020.89	748457.65	
15773.00	89.94	359.15	10549.40	5063.71	5063.68	-22.16	0.25	441115.88	748456.34	
15868.00	90.36	359.84	10549.15	5158.71	5158.67	-23.00	0.85	441210.87	748455.50	
15962.00	90.99	359.87	10548.04	5252.70	5252.67	-23.24	0.67	441304.87	748455.26	
16057.00	89.59	0.15	10547.56	5347.70	5347.66	-23.22	1.50	441399.86	748455.28	
16151.00	90.22	359.97	10547.72	5441.70	5441.66	-23.12	0.70	441493.86	748455.38	
16246.00	90.64	0.35	10547.00	5536.69	5536.66	-22.86	0.60	441588.86	748455.64	
16340.00	91.83	0.29	10544.98	5630.67	5630.63	-22.33	1.27	441682.83	748456.17	
16435.00	90.64	359.58	10542.93	5725.64	5725.61	-22.44	1.46	441777.81	748456.06	
16529.00	89.87	0.86	10542.51	5819.64	5819.60	-22.08	1.59	441871.80	748456.42	
16624.00	90.15	1.12	10542.50	5914.62	5914.59	-20.44	0.40	441966.79	748458.06	
16718.00	90.43	0.94	10542.02	6008.60	6008.57	-18.75	0.35	442060.77	748459.75	
16812.00	91.20	0.87	10540.68	6102.57	6102.55	-17.26	0.82	442154.75	748461.24	
16906.00	89.52	0.25	10540.09	6196.56	6196.54	-16.35	1.91	442248.74	748462.15	
17001.00	90.15	359.92	10540.37	6291.56	6291.54	-16.20	0.75	442343.74	748462.30	
17095.00	90.57	359.44	10539.78	6385.56	6385.54	-16.73	0.68	442437.74	748461.77	
17190.00	91.65	2.43	10537.93	6480.51	6480.49	-15.18	3.35	442532.69	748463.32	
17284.00	91.83	358.91	10535.08	6574.44	6574.43	-14.08	3.75	442626.63	748464.42	
17379.00	91.97	359.14	10531.93	6669.38	6669.36	-15.70	0.28	442721.56	748462.80	
17473.00	89.38	1.26	10530.82	6763.36	6763.34	-15.37	3.56	442815.54	748463.13	
17568.00	89.45	1.61	10531.79	6858.32	6858.31	-12.99	0.38	442910.51	748465.51	
17662.00	90.71	1.59	10531.66	6952.28	6952.27	-10.37	1.34	443004.47	748468.13	
17757.00	91.76	1.32	10529.61	7047.22	7047.22	-7.95	1.14	443099.42	748470.55	
17852.00	91.90	0.70	10526.58	7142.15	7142.15	-6.28	0.67	443194.35	748472.22	
17946.00	92.60	1.08	10522.89	7236.06	7236.07	-4.82	0.85	443288.27	748473.68	
18040.00	91.48	0.64	10519.54	7329.99	7330.00	-3.41	1.28	443382.20	748475.09	
18076.00	91.41	0.28	10518.64	7365.97	7365.98	-3.12	1.02	443418.18	748475.38	Last WFT MWD Svy
18139.00	91.41	0.28	10517.09	7428.95	7428.96	-2.81	0.00	443481.16	748475.69	TD@ 18139' MD / PTB