

devon

Devon Energy Corporation

Lea Co., NM
Gaucho Unit
152H

OH

Design: Surveys

Survey Report - Geographic

16 April, 2019

HOBBS OCD
APR 25 2019
RECEIVED



NABORS

Company: Devon Energy Corporation
 Project: Lea Co., NM
 Site: Gaucho Unit
 Well: 152H
 Wellbore: OH
 Design: Surveys

Local Co-ordinate Reference: Well 152H
 TVD Reference: KB=32' (Nabors X20) @ 3463.00ft (Nabors X20)
 MD Reference: KB=32' (Nabors X20) @ 3463.00ft (Nabors X20)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: RyanUSA_ODBC_32-Bit

Project	Lea Co., NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Gaucho Unit				
Site Position:		Northing:	494,400.290 usft	Latitude:	32° 21' 22.989155 N
From: Map		Easting:	800,423.130 usft	Longitude:	103° 29' 39.452222 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45 °

Well	152H					
Well Position	+N/-S	0.00 ft	Northing:	494,400.290 usft	Latitude:	32° 21' 22.984502 N
	+E/-W	0.00 ft	Easting:	800,483.110 usft	Longitude:	103° 29' 38.753010 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	3,431.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	8/27/2018	6.72	60.08	48,086.20000000

Design	Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00		0.00

Survey Program	Date	4/15/2019			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
238.00	12,349.00	Survey #1 - NDS MWD (OH)	MWD+IFR1	OWSG MWD + IFR1	
12,444.00	15,092.00	Survey #2 PN5 Surveys (OH)	MWD+IFR1	OWSG MWD + IFR1	
15,092.00	18,120.00	Survey #3 PN6 Surveys (OH)	MWD+IFR1	OWSG MWD + IFR1	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	494,400.290	800,483.110	32° 21' 22.984502 N	103° 29' 38.753010 W	
238.00	0.50	193.30	238.00	-1.01	-0.24	494,399.279	800,482.871	32° 21' 22.974521 N	103° 29' 38.755888 W	
328.00	0.50	204.38	327.99	-1.75	-0.49	494,398.539	800,482.619	32° 21' 22.967220 N	103° 29' 38.758898 W	
420.00	0.38	206.48	419.99	-2.39	-0.79	494,397.900	800,482.317	32° 21' 22.960924 N	103° 29' 38.762474 W	
513.00	0.56	220.55	512.99	-3.01	-1.23	494,397.279	800,481.884	32° 21' 22.954809 N	103° 29' 38.767578 W	
604.00	0.31	215.80	603.99	-3.55	-1.66	494,396.741	800,481.451	32° 21' 22.949524 N	103° 29' 38.772676 W	
694.00	0.25	204.20	693.98	-3.92	-1.88	494,396.365	800,481.228	32° 21' 22.945815 N	103° 29' 38.775309 W	
785.00	0.25	204.02	784.98	-4.29	-2.04	494,396.002	800,481.066	32° 21' 22.942241 N	103° 29' 38.777233 W	
966.00	0.56	247.62	965.98	-4.98	-3.02	494,395.305	800,480.087	32° 21' 22.935416 N	103° 29' 38.788705 W	
1,058.00	0.81	275.39	1,057.97	-5.09	-4.09	494,395.195	800,479.024	32° 21' 22.934409 N	103° 29' 38.801108 W	

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Well 152H
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 Minimum Curvature
 RyanUSA_ODBC_32-Bit

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,148.00	0.38	285.76	1,147.97	-4.95	-5.01	494,395.336	800,478.103	32° 21' 22.935874 N	103° 29' 38.811827 W
1,239.00	0.94	277.85	1,238.96	-4.77	-6.04	494,395.520	800,477.074	32° 21' 22.937773 N	103° 29' 38.823816 W
1,329.00	1.25	286.29	1,328.94	-4.39	-7.71	494,395.896	800,475.400	32° 21' 22.941626 N	103° 29' 38.843291 W
1,420.00	1.13	325.84	1,419.93	-3.37	-9.17	494,396.917	800,473.943	32° 21' 22.951840 N	103° 29' 38.860178 W
1,510.00	1.13	5.04	1,509.91	-1.75	-9.59	494,398.535	800,473.523	32° 21' 22.967886 N	103° 29' 38.864930 W
1,601.00	1.19	1.00	1,600.89	0.08	-9.49	494,400.374	800,473.618	32° 21' 22.986072 N	103° 29' 38.863651 W
1,692.00	1.69	355.55	1,691.86	2.37	-9.58	494,402.656	800,473.531	32° 21' 23.008665 N	103° 29' 38.864464 W
1,785.00	2.50	354.14	1,784.80	5.75	-9.89	494,406.041	800,473.217	32° 21' 23.042183 N	103° 29' 38.867809 W
1,905.00	3.31	357.48	1,904.64	11.82	-10.31	494,412.106	800,472.798	32° 21' 23.102223 N	103° 29' 38.872146 W
2,065.00	3.50	3.11	2,064.36	21.31	-10.25	494,421.597	800,472.860	32° 21' 23.196132 N	103° 29' 38.870557 W
2,158.00	2.31	27.36	2,157.24	25.81	-9.24	494,426.097	800,473.875	32° 21' 23.208655 N	103° 29' 38.858308 W
2,253.00	2.19	76.23	2,252.18	27.94	-6.59	494,428.229	800,476.518	32° 21' 23.261472 N	103° 29' 38.827302 W
2,347.00	3.25	100.49	2,346.08	27.88	-2.23	494,428.172	800,480.883	32° 21' 23.260563 N	103° 29' 38.776426 W
2,441.00	4.75	109.63	2,439.84	26.09	4.06	494,426.379	800,487.169	32° 21' 23.242337 N	103° 29' 38.703309 W
2,535.00	6.75	104.18	2,533.37	23.43	13.08	494,423.718	800,496.192	32° 21' 23.215306 N	103° 29' 38.598370 W
2,630.00	7.94	111.91	2,627.59	19.61	24.58	494,419.902	800,507.693	32° 21' 23.176652 N	103° 29' 38.464646 W
2,724.00	9.06	115.43	2,720.56	14.01	37.29	494,414.301	800,520.401	32° 21' 23.120247 N	103° 29' 38.317017 W
2,819.00	10.75	113.67	2,814.14	7.24	52.16	494,407.531	800,535.271	32° 21' 23.052112 N	103° 29' 38.144282 W
2,913.00	10.88	111.21	2,906.47	0.51	68.46	494,400.802	800,551.571	32° 21' 22.984264 N	103° 29' 37.954886 W
3,007.00	10.25	112.62	2,998.87	-5.91	84.45	494,394.376	800,567.562	32° 21' 22.919436 N	103° 29' 37.769064 W
3,102.00	11.06	112.62	3,092.23	-12.67	100.67	494,387.620	800,583.775	32° 21' 22.851332 N	103° 29' 37.580672 W
3,195.00	11.38	113.50	3,183.46	-19.76	117.31	494,380.531	800,600.424	32° 21' 22.779890 N	103° 29' 37.387243 W
3,289.00	10.56	113.67	3,275.74	-26.91	133.71	494,373.375	800,616.817	32° 21' 22.707810 N	103° 29' 37.196789 W
3,383.00	10.31	112.09	3,368.18	-33.54	149.39	494,366.753	800,632.500	32° 21' 22.641076 N	103° 29' 37.014570 W
3,470.00	10.56	109.98	3,453.75	-39.19	164.10	494,361.101	800,647.207	32° 21' 22.584011 N	103° 29' 36.843651 W
3,487.00	10.38	109.28	3,470.46	-40.23	167.01	494,360.063	800,650.116	32° 21' 22.573515 N	103° 29' 36.809828 W
3,581.00	11.13	108.57	3,562.81	-45.91	183.60	494,354.378	800,666.710	32° 21' 22.515970 N	103° 29' 36.616906 W
3,676.00	11.56	110.51	3,655.95	-52.17	201.21	494,348.123	800,684.317	32° 21' 22.452710 N	103° 29' 36.412224 W
3,770.00	13.31	108.40	3,747.75	-58.88	220.30	494,341.407	800,703.408	32° 21' 22.384775 N	103° 29' 36.190296 W
3,958.00	14.44	106.47	3,930.26	-72.36	263.31	494,327.930	800,746.422	32° 21' 22.248083 N	103° 29' 35.690093 W
4,146.00	14.25	105.94	4,112.40	-85.36	308.04	494,314.930	800,791.149	32° 21' 22.115976 N	103° 29' 35.169879 W
4,240.00	14.56	105.94	4,203.44	-91.78	330.53	494,308.508	800,813.635	32° 21' 22.050683 N	103° 29' 34.908344 W
4,334.00	14.69	106.29	4,294.40	-98.37	353.33	494,301.919	800,836.436	32° 21' 21.983725 N	103° 29' 34.643142 W
4,428.00	15.00	106.29	4,385.26	-105.13	376.44	494,295.164	800,859.553	32° 21' 21.915087 N	103° 29' 34.374285 W
4,522.00	15.13	106.11	4,476.03	-111.94	399.91	494,288.348	800,883.014	32° 21' 21.845820 N	103° 29' 34.101405 W
4,616.00	15.13	106.11	4,566.77	-118.75	423.48	494,281.540	800,906.586	32° 21' 21.776625 N	103° 29' 33.827247 W
4,711.00	15.00	105.76	4,658.50	-125.53	447.22	494,274.761	800,930.329	32° 21' 21.707700 N	103° 29' 33.551089 W
4,805.00	15.06	106.11	4,749.29	-132.22	470.66	494,268.068	800,953.768	32° 21' 21.639656 N	103° 29' 33.278457 W
4,899.00	15.00	105.76	4,840.07	-138.91	494.10	494,261.376	800,977.208	32° 21' 21.571613 N	103° 29' 33.005826 W
5,066.00	14.94	105.76	5,001.41	-150.63	535.62	494,249.659	801,018.724	32° 21' 21.452452 N	103° 29' 32.522925 W
5,181.00	14.56	105.06	5,112.62	-158.41	563.84	494,241.877	801,046.950	32° 21' 21.373255 N	103° 29' 32.194604 W
5,276.00	12.19	102.77	5,205.03	-163.73	585.16	494,236.556	801,068.266	32° 21' 21.318953 N	103° 29' 31.946604 W
5,370.00	11.38	101.72	5,297.05	-167.81	603.92	494,232.479	801,087.025	32° 21' 21.277148 N	103° 29' 31.728291 W
5,464.00	10.00	98.20	5,389.42	-170.86	621.08	494,229.431	801,104.185	32° 21' 21.245655 N	103° 29' 31.528536 W
5,558.00	10.69	104.36	5,481.89	-174.19	637.60	494,226.104	801,120.709	32° 21' 21.211455 N	103° 29' 31.336208 W
5,653.00	9.69	103.30	5,575.39	-178.21	653.92	494,222.080	801,137.026	32° 21' 21.170364 N	103° 29' 31.146366 W
5,747.00	8.56	103.48	5,668.20	-181.66	668.42	494,218.629	801,151.528	32° 21' 21.135091 N	103° 29' 30.977626 W
5,841.00	8.50	96.09	5,761.16	-184.03	682.13	494,216.261	801,165.240	32° 21' 21.110596 N	103° 29' 30.818006 W
5,936.00	9.63	94.69	5,854.98	-185.42	697.03	494,214.866	801,180.141	32° 21' 21.095638 N	103° 29' 30.644425 W
6,029.00	8.75	93.98	5,946.78	-186.55	711.84	494,213.739	801,194.950	32° 21' 21.083334 N	103° 29' 30.471888 W
6,124.00	10.63	92.75	6,040.42	-187.47	727.80	494,212.817	801,210.912	32° 21' 21.072970 N	103° 29' 30.285899 W
6,218.00	10.81	89.06	6,132.78	-187.74	745.28	494,212.546	801,228.386	32° 21' 21.068925 N	103° 29' 30.082224 W
6,311.00	11.00	96.97	6,224.11	-188.68	762.81	494,211.612	801,245.914	32° 21' 21.058323 N	103° 29' 29.877980 W
6,405.00	10.56	102.07	6,316.45	-191.57	780.13	494,208.723	801,263.240	32° 21' 21.028385 N	103° 29' 29.676278 W
6,499.00	10.00	99.26	6,408.94	-194.68	796.61	494,205.608	801,279.718	32° 21' 20.998285 N	103° 29' 29.484470 W

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 Minimum Curvature
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Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,594.00	9.06	96.80	6,502.63	-196.89	812.18	494,203.395	801,295.286	32° 21' 20.973177 N	103° 29' 29.303188 W
6,689.00	9.69	97.85	6,596.36	-198.87	827.53	494,201.418	801,310.634	32° 21' 20.952415 N	103° 29' 29.124459 W
6,782.00	9.13	100.14	6,688.11	-201.24	842.54	494,199.050	801,325.650	32° 21' 20.927815 N	103° 29' 28.949621 W
6,875.00	10.69	106.29	6,779.72	-204.96	858.09	494,195.331	801,341.194	32° 21' 20.889809 N	103° 29' 28.768763 W
6,970.00	11.94	103.48	6,872.88	-209.72	876.10	494,190.569	801,359.209	32° 21' 20.841284 N	103° 29' 28.559199 W
7,064.00	10.69	102.60	6,965.05	-213.89	894.07	494,186.400	801,377.173	32° 21' 20.798638 N	103° 29' 28.350159 W
7,158.00	11.81	103.83	7,057.24	-218.09	911.91	494,182.199	801,395.023	32° 21' 20.755676 N	103° 29' 28.142469 W
7,252.00	10.00	101.72	7,149.54	-222.05	929.25	494,178.241	801,412.356	32° 21' 20.715167 N	103° 29' 27.940772 W
7,346.00	8.25	104.18	7,242.35	-225.36	943.78	494,174.931	801,426.887	32° 21' 20.681282 N	103° 29' 27.771682 W
7,441.00	9.38	106.29	7,336.22	-229.20	957.82	494,171.089	801,440.927	32° 21' 20.642180 N	103° 29' 27.608371 W
7,535.00	9.69	105.76	7,428.92	-233.50	972.78	494,166.792	801,455.893	32° 21' 20.598494 N	103° 29' 27.434300 W
7,629.00	9.06	104.36	7,521.67	-237.48	987.57	494,162.808	801,470.676	32° 21' 20.557919 N	103° 29' 27.262330 W
7,724.00	10.13	102.95	7,615.34	-241.21	1,002.96	494,159.080	801,486.065	32° 21' 20.519839 N	103° 29' 27.083284 W
7,818.00	8.56	110.16	7,708.09	-245.47	1,017.58	494,154.816	801,500.689	32° 21' 20.476509 N	103° 29' 26.913190 W
7,912.00	9.69	106.82	7,800.90	-250.17	1,031.72	494,150.116	801,514.830	32° 21' 20.428899 N	103° 29' 26.748785 W
8,006.00	8.56	104.88	7,893.71	-254.26	1,046.06	494,146.030	801,529.164	32° 21' 20.387355 N	103° 29' 26.582063 W
8,101.00	8.13	98.56	7,987.70	-257.08	1,059.53	494,143.215	801,542.640	32° 21' 20.358447 N	103° 29' 26.425228 W
8,195.00	8.56	96.45	8,080.71	-258.85	1,073.06	494,141.440	801,556.164	32° 21' 20.339828 N	103° 29' 26.267735 W
8,288.00	9.19	106.64	8,172.60	-261.75	1,087.05	494,138.535	801,570.158	32° 21' 20.310000 N	103° 29' 26.104870 W
8,382.00	7.50	100.49	8,265.60	-265.02	1,100.28	494,135.269	801,583.383	32° 21' 20.276647 N	103° 29' 25.950998 W
8,475.00	5.19	95.22	8,358.03	-266.51	1,110.43	494,133.781	801,593.541	32° 21' 20.261133 N	103° 29' 25.832715 W
8,569.00	3.44	87.48	8,451.76	-266.77	1,117.49	494,133.518	801,600.593	32° 21' 20.257983 N	103° 29' 25.750533 W
8,663.00	3.06	71.66	8,545.61	-265.86	1,122.68	494,134.431	801,605.792	32° 21' 20.266616 N	103° 29' 25.689842 W
8,757.00	2.75	63.22	8,639.49	-264.05	1,127.08	494,136.237	801,610.187	32° 21' 20.284139 N	103° 29' 25.638447 W
8,851.00	1.31	65.33	8,733.43	-262.59	1,130.07	494,137.701	801,613.177	32° 21' 20.298397 N	103° 29' 25.603460 W
8,945.00	3.31	118.95	8,827.36	-263.45	1,133.42	494,136.836	801,616.528	32° 21' 20.289575 N	103° 29' 25.564468 W
9,040.00	1.81	153.40	8,922.26	-266.12	1,136.49	494,134.167	801,619.600	32° 21' 20.262923 N	103° 29' 25.528903 W
9,133.00	3.25	189.61	9,015.18	-270.04	1,136.71	494,130.254	801,619.818	32° 21' 20.224189 N	103° 29' 25.526726 W
9,228.00	2.06	145.49	9,110.08	-274.10	1,137.23	494,126.191	801,620.336	32° 21' 20.183950 N	103° 29' 25.521062 W
9,322.00	2.88	114.55	9,204.00	-276.47	1,140.33	494,123.818	801,623.441	32° 21' 20.160223 N	103° 29' 25.485079 W
9,416.00	5.38	128.44	9,297.75	-280.19	1,145.93	494,120.096	801,629.042	32° 21' 20.122963 N	103° 29' 25.420133 W
9,510.00	4.81	109.45	9,391.38	-284.25	1,153.10	494,116.044	801,636.210	32° 21' 20.082309 N	103° 29' 25.336941 W
9,604.00	1.69	69.73	9,485.23	-285.08	1,158.12	494,115.212	801,641.228	32° 21' 20.073681 N	103° 29' 25.278520 W
9,699.00	1.00	190.66	9,580.21	-285.41	1,159.28	494,114.882	801,642.389	32° 21' 20.070332 N	103° 29' 25.265017 W
9,781.00	1.06	179.24	9,662.20	-286.87	1,159.16	494,113.421	801,642.267	32° 21' 20.055879 N	103° 29' 25.266577 W
KOP @ 9781' MD, 56' FSL, 2088' FEL									
9,883.00	4.44	32.29	9,764.11	-284.47	1,161.28	494,115.817	801,644.390	32° 21' 20.079421 N	103° 29' 25.241607 W
9,889.61	4.90	27.06	9,770.70	-284.01	1,161.55	494,116.284	801,644.655	32° 21' 20.084026 N	103° 29' 25.238474 W
Gaucho 152H_KOP									
9,977.00	12.38	1.35	9,857.06	-271.30	1,163.47	494,128.992	801,646.576	32° 21' 20.209623 N	103° 29' 25.214920 W
10,022.00	15.94	356.60	9,900.69	-260.30	1,163.22	494,139.987	801,646.323	32° 21' 20.318433 N	103° 29' 25.216859 W
10,071.00	16.88	352.73	9,947.70	-246.53	1,161.92	494,153.761	801,645.023	32° 21' 20.454826 N	103° 29' 25.230742 W
10,083.12	17.25	352.58	9,959.29	-243.00	1,161.46	494,157.290	801,644.568	32° 21' 20.489777 N	103° 29' 25.235720 W
Line Crossing 10083.12' MD 2084' FEL - Interp @ 9959.29 (152H OH Survey #1 - NDS MWD)									
10,116.00	18.25	352.21	9,990.60	-233.07	1,160.13	494,167.224	801,643.241	32° 21' 20.588174 N	103° 29' 25.250278 W
10,165.00	22.31	355.02	10,036.55	-216.19	1,158.29	494,184.099	801,641.393	32° 21' 20.755289 N	103° 29' 25.270273 W
10,210.00	28.06	358.36	10,077.26	-197.09	1,157.24	494,203.204	801,640.348	32° 21' 20.944417 N	103° 29' 25.280705 W
10,260.00	30.38	359.77	10,120.89	-172.68	1,156.85	494,227.606	801,639.961	32° 21' 21.185899 N	103° 29' 25.282981 W
10,305.00	34.25	1.88	10,158.92	-148.64	1,157.22	494,251.651	801,640.330	32° 21' 21.423791 N	103° 29' 25.276461 W
10,354.00	38.00	2.40	10,198.49	-119.78	1,158.31	494,280.513	801,641.415	32° 21' 21.709290 N	103° 29' 25.261171 W
10,410.00	44.88	2.40	10,240.45	-82.77	1,159.86	494,317.521	801,642.966	32° 21' 22.075355 N	103° 29' 25.239692 W
10,449.00	50.13	3.28	10,266.78	-54.06	1,161.29	494,346.231	801,644.399	32° 21' 22.359319 N	103° 29' 25.220346 W
10,494.00	59.38	4.34	10,292.72	-17.43	1,163.75	494,382.859	801,646.858	32° 21' 22.721553 N	103° 29' 25.188321 W
10,542.00	68.38	3.46	10,313.83	25.52	1,166.67	494,425.813	801,649.774	32° 21' 23.146347 N	103° 29' 25.150390 W
10,587.00	76.75	3.81	10,327.30	68.33	1,169.39	494,468.621	801,652.496	32° 21' 23.569709 N	103° 29' 25.114723 W

Company: Devon Energy Corporation
 Project: Lea Co., NM
 Site: Gaucho Unit
 Well: 152H
 Wellbore: OH
 Design: Surveys

Local Co-ordinate Reference: Well 152H
 TVD Reference: KB=32' (Nabors X20) @ 3463.00ft (Nabors X20)
 MD Reference: KB=32' (Nabors X20) @ 3463.00ft (Nabors X20)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: RyanUSA_ODBC_32-Bit

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,603.00	79.81	2.58	10,330.55	83.97	1,170.26	494,484.261	801,653.368	32° 21' 23.724395 N	103° 29' 25.103121 W
10,653.00	86.31	1.17	10,336.59	133.55	1,171.88	494,533.840	801,654.987	32° 21' 24.214844 N	103° 29' 25.079698 W
10,698.00	86.06	0.64	10,339.59	178.45	1,172.59	494,578.734	801,655.696	32° 21' 24.659009 N	103° 29' 25.067309 W
10,747.00	87.00	1.52	10,342.55	227.35	1,173.51	494,627.635	801,656.618	32° 21' 25.142796 N	103° 29' 25.052071 W
10,792.00	87.00	1.35	10,344.91	272.27	1,174.64	494,672.559	801,657.744	32° 21' 25.587222 N	103° 29' 25.034827 W
10,800.88	86.98	1.32	10,345.37	281.13	1,174.84	494,681.420	801,657.950	32° 21' 25.674887 N	103° 29' 25.031609 W
Gaucho 152H_EOC									
10,841.00	86.88	1.17	10,347.52	321.19	1,175.71	494,721.477	801,658.820	32° 21' 26.071173 N	103° 29' 25.017793 W
10,936.00	88.19	1.17	10,351.61	416.08	1,177.65	494,816.368	801,660.758	32° 21' 27.009938 N	103° 29' 24.986490 W
11,030.00	87.88	1.17	10,354.83	510.00	1,179.57	494,910.293	801,662.676	32° 21' 27.939154 N	103° 29' 24.955504 W
11,124.00	89.69	1.00	10,356.86	603.96	1,181.35	495,004.251	801,664.455	32° 21' 28.868708 N	103° 29' 24.926134 W
11,218.00	89.44	1.17	10,357.54	697.94	1,183.13	495,098.231	801,666.235	32° 21' 29.798482 N	103° 29' 24.896756 W
11,313.00	89.88	0.82	10,358.10	792.93	1,184.78	495,193.214	801,667.885	32° 21' 30.738194 N	103° 29' 24.868804 W
11,406.00	89.63	0.64	10,358.50	885.92	1,185.96	495,286.206	801,669.070	32° 21' 31.658230 N	103° 29' 24.846453 W
11,500.00	90.56	0.64	10,358.35	979.91	1,187.01	495,380.198	801,670.120	32° 21' 32.588186 N	103° 29' 24.825582 W
11,594.00	91.88	1.35	10,356.34	1,073.87	1,188.64	495,474.160	801,671.751	32° 21' 33.517789 N	103° 29' 24.797932 W
11,688.00	89.69	359.94	10,355.06	1,167.85	1,189.70	495,568.137	801,672.809	32° 21' 34.447587 N	103° 29' 24.776972 W
11,782.00	89.25	359.77	10,355.93	1,261.84	1,189.46	495,662.132	801,672.571	32° 21' 35.377667 N	103° 29' 24.771114 W
11,876.00	88.88	0.12	10,357.46	1,355.83	1,189.37	495,756.119	801,672.481	32° 21' 36.307654 N	103° 29' 24.763536 W
11,970.00	88.94	0.12	10,359.25	1,449.81	1,189.57	495,850.102	801,672.678	32° 21' 37.237576 N	103° 29' 24.752611 W
12,064.00	88.69	359.94	10,361.19	1,543.79	1,189.62	495,944.081	801,672.727	32° 21' 38.167479 N	103° 29' 24.743407 W
12,159.00	88.19	0.12	10,363.78	1,638.76	1,189.67	496,039.045	801,672.777	32° 21' 39.107125 N	103° 29' 24.734108 W
12,254.00	87.75	0.12	10,367.14	1,733.70	1,189.87	496,133.985	801,672.976	32° 21' 40.046517 N	103° 29' 24.723071 W
12,349.00	86.94	0.12	10,371.54	1,828.60	1,190.07	496,228.882	801,673.174	32° 21' 40.985484 N	103° 29' 24.712040 W
12,444.00	88.38	0.12	10,375.42	1,923.51	1,190.27	496,323.800	801,673.373	32° 21' 41.924660 N	103° 29' 24.701005 W
12,539.00	89.63	1.35	10,377.07	2,018.49	1,191.48	496,418.774	801,674.592	32° 21' 42.864310 N	103° 29' 24.678077 W
12,633.00	89.38	3.11	10,377.88	2,112.41	1,195.14	496,512.695	801,678.249	32° 21' 43.793356 N	103° 29' 24.626814 W
12,727.00	91.19	5.22	10,377.42	2,206.15	1,201.97	496,606.436	801,685.075	32° 21' 44.720372 N	103° 29' 24.538624 W
12,822.00	88.81	4.86	10,377.42	2,300.78	1,210.31	496,701.062	801,693.421	32° 21' 45.656020 N	103° 29' 24.432643 W
12,916.00	91.00	5.39	10,377.57	2,394.39	1,218.71	496,794.680	801,701.817	32° 21' 46.581692 N	103° 29' 24.326157 W
13,010.00	90.88	5.22	10,376.03	2,487.98	1,227.40	496,888.264	801,710.507	32° 21' 47.507012 N	103° 29' 24.216253 W
13,104.00	91.06	5.04	10,374.44	2,581.59	1,235.80	496,981.874	801,718.911	32° 21' 48.432605 N	103° 29' 24.109680 W
13,198.00	91.56	4.86	10,372.29	2,675.21	1,243.91	497,075.499	801,727.019	32° 21' 49.358365 N	103° 29' 24.006545 W
13,292.00	92.13	4.86	10,369.26	2,768.83	1,251.87	497,169.111	801,734.979	32° 21' 50.284022 N	103° 29' 23.905149 W
13,387.00	90.13	4.16	10,367.39	2,863.51	1,259.34	497,263.793	801,742.447	32° 21' 51.220295 N	103° 29' 23.809386 W
13,482.00	89.56	3.11	10,367.65	2,958.32	1,265.36	497,358.600	801,748.470	32° 21' 52.157915 N	103° 29' 23.730458 W
13,576.00	90.13	2.75	10,367.90	3,052.19	1,270.17	497,452.476	801,753.275	32° 21' 53.086422 N	103° 29' 23.665817 W
13,670.00	88.31	1.00	10,369.18	3,146.13	1,273.24	497,546.409	801,756.350	32° 21' 54.015629 N	103° 29' 23.621332 W
13,763.00	90.44	1.52	10,370.20	3,239.09	1,275.29	497,639.375	801,758.395	32° 21' 54.935348 N	103° 29' 23.588951 W
13,857.00	91.25	1.35	10,368.81	3,333.05	1,277.64	497,733.335	801,760.749	32° 21' 55.864870 N	103° 29' 23.552876 W
13,952.00	91.94	0.82	10,366.16	3,428.00	1,279.44	497,828.280	801,762.547	32° 21' 56.804189 N	103° 29' 23.523187 W
14,046.00	92.19	0.64	10,362.78	3,521.93	1,280.64	497,922.211	801,763.744	32° 21' 57.733521 N	103° 29' 23.500603 W
14,140.00	89.25	0.12	10,361.60	3,615.91	1,281.26	498,016.190	801,764.367	32° 21' 58.663380 N	103° 29' 23.484702 W
14,234.00	91.44	359.94	10,361.03	3,709.90	1,281.31	498,110.183	801,764.416	32° 21' 59.593408 N	103° 29' 23.475491 W
14,323.31	90.55	358.77	10,359.48	3,799.19	1,280.30	498,199.475	801,763.412	32° 22' 0.477016 N	103° 29' 23.478996 W
Gaucho 152H_T1									
14,328.00	90.50	358.71	10,359.44	3,803.88	1,280.20	498,204.160	801,763.309	32° 22' 0.523374 N	103° 29' 23.479766 W
14,422.00	90.94	358.89	10,358.26	3,897.85	1,278.23	498,298.131	801,761.340	32° 22' 1.453353 N	103° 29' 23.494081 W
14,515.00	89.75	356.78	10,357.70	3,990.77	1,274.72	498,391.056	801,757.827	32° 22' 2.373097 N	103° 29' 23.526500 W
14,610.00	90.88	357.83	10,357.18	4,085.66	1,270.25	498,485.946	801,753.361	32° 22' 3.312363 N	103° 29' 23.569857 W
14,704.00	88.81	357.13	10,357.43	4,179.57	1,266.12	498,579.849	801,749.228	32° 22' 4.241832 N	103° 29' 23.609411 W
14,809.00	91.31	358.01	10,357.32	4,284.46	1,261.67	498,684.745	801,744.777	32° 22' 5.280100 N	103° 29' 23.651671 W
14,903.00	91.25	352.56	10,355.22	4,378.09	1,253.95	498,778.368	801,737.055	32° 22' 6.207080 N	103° 29' 23.733098 W
14,998.00	89.31	350.80	10,354.75	4,472.08	1,240.20	498,872.359	801,723.309	32° 22' 7.138167 N	103° 29' 23.884719 W
15,092.00	89.50	350.45	10,355.73	4,564.82	1,224.89	498,965.098	801,707.998	32° 22' 8.056992 N	103° 29' 24.054712 W

Company: Devon Energy Corporation
 Project: Lea Co., NM
 Site: Gaucho Unit
 Well: 152H
 Wellbore: OH
 Design: Surveys

Local Co-ordinate Reference: Well 152H
 TVD Reference: KB=32' (Nabors X20) @ 3463.00ft (Nabors X20)
 MD Reference: KB=32' (Nabors X20) @ 3463.00ft (Nabors X20)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: RyanUSA_ODBC_32-Bit

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,186.00	91.19	350.80	10,355.16	4,657.56	1,209.58	499,057.837	801,692.687	32° 22' 8.975817 N	103° 29' 24.224706 W
15,279.00	88.56	353.44	10,355.37	4,749.66	1,196.83	499,149.942	801,679.939	32° 22' 9.888170 N	103° 29' 24.364874 W
15,374.00	89.75	353.79	10,356.77	4,844.06	1,186.27	499,244.341	801,669.375	32° 22' 10.823043 N	103° 29' 24.479362 W
15,468.00	89.69	356.60	10,357.23	4,937.72	1,178.39	499,337.999	801,661.502	32° 22' 11.750390 N	103° 29' 24.562550 W
15,469.28	89.71	356.61	10,357.23	4,939.00	1,178.32	499,339.277	801,661.426	32° 22' 11.763039 N	103° 29' 24.563316 W
Cross Section Line @ 15469.28' MD, 0' FSL, 2032' FEL									
15,562.00	91.44	357.31	10,356.30	5,031.58	1,173.40	499,431.858	801,656.509	32° 22' 12.679485 N	103° 29' 24.612140 W
15,657.00	92.44	357.31	10,353.09	5,126.42	1,168.95	499,526.697	801,652.053	32° 22' 13.618246 N	103° 29' 24.655380 W
15,752.00	90.13	359.24	10,350.95	5,221.34	1,166.09	499,621.619	801,649.195	32° 22' 14.557699 N	103° 29' 24.679982 W
15,846.00	89.56	1.70	10,351.21	5,315.33	1,166.86	499,715.608	801,649.966	32° 22' 15.487635 N	103° 29' 24.662358 W
15,940.00	90.94	2.23	10,350.80	5,409.27	1,170.08	499,809.549	801,653.189	32° 22' 16.416908 N	103° 29' 24.616150 W
16,034.00	91.88	1.70	10,348.49	5,503.18	1,173.30	499,903.464	801,656.412	32° 22' 17.345920 N	103° 29' 24.569953 W
16,129.00	89.81	1.00	10,347.08	5,598.14	1,175.54	499,998.421	801,658.649	32° 22' 18.285325 N	103° 29' 24.535139 W
16,223.00	90.00	0.12	10,347.24	5,692.14	1,176.46	500,092.415	801,659.568	32° 22' 19.215304 N	103° 29' 24.515792 W
16,317.00	91.00	359.77	10,346.42	5,786.13	1,176.37	500,186.410	801,659.478	32° 22' 20.145367 N	103° 29' 24.508208 W
16,412.00	89.56	1.00	10,345.96	5,881.12	1,177.01	500,281.402	801,660.116	32° 22' 21.085242 N	103° 29' 24.492037 W
16,506.00	90.75	1.35	10,345.70	5,975.10	1,178.94	500,375.380	801,662.044	32° 22' 22.014980 N	103° 29' 24.460928 W
16,601.00	89.06	1.17	10,345.86	6,070.08	1,181.03	500,470.353	801,664.133	32° 22' 22.954554 N	103° 29' 24.427847 W
16,695.00	90.56	1.00	10,346.17	6,164.06	1,182.80	500,564.333	801,665.912	32° 22' 23.884322 N	103° 29' 24.398459 W
16,789.00	89.13	359.59	10,346.43	6,258.05	1,183.29	500,658.327	801,666.396	32° 22' 24.814326 N	103° 29' 24.384179 W
16,883.00	91.25	359.94	10,346.11	6,352.04	1,182.90	500,752.320	801,666.011	32° 22' 25.744393 N	103° 29' 24.380038 W
16,977.00	87.63	358.71	10,347.03	6,446.01	1,181.80	500,846.291	801,664.904	32° 22' 26.674303 N	103° 29' 24.384308 W
17,071.00	88.56	358.89	10,350.16	6,539.94	1,179.83	500,940.217	801,662.937	32° 22' 27.603833 N	103° 29' 24.398617 W
17,166.00	90.81	359.06	10,350.68	6,634.92	1,178.13	501,035.194	801,661.237	32° 22' 28.543740 N	103° 29' 24.409703 W
17,260.00	89.06	358.71	10,350.79	6,728.90	1,176.30	501,129.172	801,659.408	32° 22' 29.473773 N	103° 29' 24.422394 W
17,354.00	90.13	358.71	10,351.45	6,822.87	1,174.18	501,223.144	801,657.292	32° 22' 30.403771 N	103° 29' 24.438432 W
17,448.00	92.50	359.06	10,349.29	6,916.82	1,172.36	501,317.095	801,655.464	32° 22' 31.333529 N	103° 29' 24.451121 W
17,542.00	93.39	358.80	10,344.46	7,010.68	1,170.60	501,410.953	801,653.711	32° 22' 32.262371 N	103° 29' 24.462936 W
17,637.00	94.90	358.91	10,337.60	7,105.41	1,168.71	501,505.683	801,651.817	32° 22' 33.199844 N	103° 29' 24.476308 W
17,732.00	96.48	359.07	10,328.18	7,199.92	1,167.04	501,600.197	801,650.151	32° 22' 34.135167 N	103° 29' 24.487053 W
17,827.00	97.83	358.65	10,316.35	7,294.16	1,165.17	501,694.436	801,648.276	32° 22' 35.067785 N	103° 29' 24.500254 W
17,921.00	99.51	358.63	10,302.18	7,387.06	1,162.96	501,787.332	801,646.071	32° 22' 35.987141 N	103° 29' 24.517432 W
18,016.00	101.45	358.55	10,284.90	7,480.44	1,160.66	501,880.714	801,643.772	32° 22' 36.911315 N	103° 29' 24.535650 W
18,067.00	103.00	357.89	10,274.10	7,530.26	1,159.12	501,930.532	801,642.225	32° 22' 37.404368 N	103° 29' 24.549114 W
Gaucho 152H_BHL									
18,120.00	103.00	357.89	10,262.18	7,581.86	1,157.22	501,982.138	801,640.324	32° 22' 37.915149 N	103° 29' 24.566541 W
TD @ 18120' MD, 2637' FNL, 2037' FEL									

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Interp @ 9959.29 (152H)	0.00	0.00	9,959.29	-243.00	1,161.46	494,157.290	801,644.568	32° 21' 20.489777 N	103° 29' 25.235720 W
- actual wellpath hits target center									
- Point									



Nabors
Survey Report - Geographic



Company:	Devon Energy Corporation	Local Co-ordinate Reference:	Well 152H
Project:	Lea Co., NM	TVD Reference:	KB=32' (Nabors X20) @ 3463.00ft (Nabors X20)
Site:	Gaucha Unit	MD Reference:	KB=32' (Nabors X20) @ 3463.00ft (Nabors X20)
Well:	152H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_ODBC_32-Bit

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
9,781.00	9,662.20	-286.87	1,159.16	KOP @ 9781' MD, 56' FSL, 2086' FEL
10,083.12	9,959.28	-243.00	1,161.46	Line Crossing 10083.12' MD 2084' FEL
15,469.28	10,357.23	4,939.00	1,178.32	Cross Section Line @ 15469.28' MD, 0' FSL, 2032' FEL
18,120.00	10,262.18	7,581.86	1,157.22	TD @ 18120' MD, 2637' FNL, 2037' FEL

Checked By: _____	Approved By: _____	Date: _____
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