

Devon Energy Corporation

Lea County, NM (NAD 83)

Gaucho Unit with Offsets

153H

Wellbore #1

Design: Actual Drilled

Survey Report - Geographic

11 April, 2019

Halliburton

Survey Report - Geographic

Company:	Devon Energy Corporation	Local Co-ordinate Reference:	Well 153H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GL+KB,32' @ 3463.3usft (Nabors X20)
Site:	Gaucha Unit with Offsets	MD Reference:	GL+KB,32' @ 3463.3usft (Nabors X20)
Well:	153H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual Drilled	Database:	SOUTH US

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

Site	Gaucha Unit with Offsets				
Site Position:		Northing:	494,400.29 usft	Latitude:	32° 21' 22.987 N
From:	Map	Easting:	800,453.11 usft	Longitude:	103° 29' 39.103 W
Position Uncertainty:	5.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45 °

Well	153H				
Well Position	+N-S	0.0 usft	Northing:	494,400.29 usft	Latitude: 32° 21' 22.987 N
	+E-W	0.0 usft	Easting:	800,453.11 usft	Longitude: 103° 29' 39.103 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level: 3,431.3 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	BGGM2018	10/3/2018	6.85	60.14	47,933.88022402

Design	Actual Drilled				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	0.11	

Survey Program	Date 4/11/2019				
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
146.0	17,795.0	MWD (Wellbore #1)	2_MWD	A001Mb/ISC4: BGGM declination correction only	
17,849.0	17,849.0	Projection to TD (Wellbore #1)	2_Blind	A026Ua: Blind drilling - no survey data	

Survey									
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Map	Map		
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting	Latitude	Longitude
(usft)			(usft)			(usft)	(usft)		
0.0	0.00	0.00	0.0	0.0	0.0	494,400.29	800,453.11	32° 21' 22.987 N	103° 29' 39.103 W
146.0	0.16	207.31	146.0	-0.2	-0.1	494,400.11	800,453.01	32° 21' 22.985 N	103° 29' 39.104 W
First MWD Survey									
238.0	0.66	321.12	238.0	0.1	-0.5	494,400.41	800,452.62	32° 21' 22.988 N	103° 29' 39.108 W
328.0	0.04	121.49	328.0	0.5	-0.8	494,400.80	800,452.32	32° 21' 22.992 N	103° 29' 39.112 W
411.0	0.26	202.39	411.0	0.3	-0.8	494,400.61	800,452.28	32° 21' 22.990 N	103° 29' 39.112 W
504.0	0.17	34.53	504.0	0.2	-0.8	494,400.52	800,452.28	32° 21' 22.989 N	103° 29' 39.112 W
595.0	0.25	14.68	595.0	0.5	-0.7	494,400.83	800,452.40	32° 21' 22.992 N	103° 29' 39.111 W
685.0	0.80	76.98	685.0	0.9	0.0	494,401.16	800,453.06	32° 21' 22.995 N	103° 29' 39.103 W
776.0	1.05	81.27	776.0	1.1	1.4	494,401.43	800,454.51	32° 21' 22.998 N	103° 29' 39.086 W
866.0	0.99	114.66	866.0	0.9	2.9	494,401.23	800,456.03	32° 21' 22.996 N	103° 29' 39.069 W

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Company: Devon Energy Corporation
Project: Lea County, NM (NAD 83)
Site: Gaucho Unit with Offsets
Well: 153H
Wellbore: Wellbore #1
Design: Actual Drilled

Local Co-ordinate Reference: Well 153H
TVD Reference: GL+KB,32' @ 3463.3usft (Nabors X20)
MD Reference: GL+KB,32' @ 3463.3usft (Nabors X20)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: SOUTH US

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
957.0	1.84	215.27	956.9	-0.6	2.8	494,399.71	800,455.90	32° 21' 22.981 N	103° 29' 39.070 W
1,049.0	0.50	88.51	1,048.9	-1.8	2.3	494,398.51	800,455.45	32° 21' 22.969 N	103° 29' 39.076 W
1,139.0	0.37	154.19	1,138.9	-2.0	2.9	494,398.26	800,455.97	32° 21' 22.967 N	103° 29' 39.070 W
1,230.0	0.55	171.03	1,229.9	-2.7	3.1	494,397.57	800,456.16	32° 21' 22.960 N	103° 29' 39.067 W
1,411.0	0.82	340.00	1,410.9	-2.4	2.7	494,397.92	800,455.86	32° 21' 22.963 N	103° 29' 39.071 W
1,501.0	0.91	33.82	1,500.9	-1.2	2.9	494,399.12	800,456.03	32° 21' 22.975 N	103° 29' 39.069 W
1,592.0	0.68	8.90	1,591.9	0.0	3.4	494,400.26	800,456.52	32° 21' 22.986 N	103° 29' 39.063 W
1,683.0	0.61	264.56	1,682.9	0.5	3.0	494,400.75	800,456.12	32° 21' 22.991 N	103° 29' 39.068 W
1,776.0	0.77	259.03	1,775.9	0.3	1.9	494,400.58	800,455.01	32° 21' 22.990 N	103° 29' 39.080 W
1,870.0	1.17	235.60	1,869.9	-0.4	0.5	494,399.92	800,453.60	32° 21' 22.983 N	103° 29' 39.097 W
1,963.0	1.16	241.63	1,962.9	-1.4	-1.1	494,398.93	800,451.99	32° 21' 22.973 N	103° 29' 39.116 W
2,011.0	1.05	257.56	2,010.9	-1.7	-2.0	494,398.61	800,451.13	32° 21' 22.970 N	103° 29' 39.126 W
2,151.0	1.39	237.67	2,150.8	-2.9	-4.7	494,397.42	800,448.45	32° 21' 22.959 N	103° 29' 39.157 W
2,246.0	3.20	201.38	2,245.7	-6.0	-6.6	494,394.34	800,446.51	32° 21' 22.928 N	103° 29' 39.180 W
2,341.0	5.10	189.01	2,340.5	-12.6	-8.2	494,387.70	800,444.88	32° 21' 22.863 N	103° 29' 39.200 W
2,434.0	5.51	180.34	2,433.1	-21.1	-8.9	494,379.15	800,444.20	32° 21' 22.778 N	103° 29' 39.208 W
2,529.0	5.81	177.42	2,527.6	-30.5	-8.7	494,369.79	800,444.39	32° 21' 22.686 N	103° 29' 39.207 W
2,623.0	6.25	169.92	2,621.1	-40.3	-7.6	494,359.99	800,445.50	32° 21' 22.589 N	103° 29' 39.195 W
2,717.0	5.48	170.31	2,714.6	-49.8	-6.0	494,350.53	800,447.15	32° 21' 22.495 N	103° 29' 39.177 W
2,812.0	4.73	172.91	2,809.2	-58.1	-4.7	494,342.17	800,448.40	32° 21' 22.412 N	103° 29' 39.163 W
2,906.0	5.61	173.80	2,902.9	-66.5	-3.7	494,333.76	800,449.37	32° 21' 22.329 N	103° 29' 39.152 W
3,000.0	6.16	173.16	2,996.4	-76.1	-2.6	494,324.18	800,450.47	32° 21' 22.234 N	103° 29' 39.140 W
3,095.0	6.08	173.11	3,090.8	-86.2	-1.4	494,314.13	800,451.68	32° 21' 22.134 N	103° 29' 39.127 W
3,188.0	5.81	173.22	3,183.3	-95.7	-0.3	494,304.57	800,452.83	32° 21' 22.040 N	103° 29' 39.115 W
3,283.0	6.16	172.53	3,277.8	-105.6	1.0	494,294.74	800,454.06	32° 21' 21.942 N	103° 29' 39.101 W
3,376.0	6.16	177.89	3,370.3	-115.5	1.8	494,284.80	800,454.89	32° 21' 21.844 N	103° 29' 39.092 W
3,455.0	4.81	190.67	3,448.9	-123.0	1.3	494,277.31	800,454.43	32° 21' 21.770 N	103° 29' 39.099 W
3,541.0	4.32	190.62	3,534.6	-129.7	0.1	494,270.58	800,453.17	32° 21' 21.703 N	103° 29' 39.114 W
3,604.0	4.59	176.39	3,597.4	-134.6	-0.2	494,265.74	800,452.89	32° 21' 21.655 N	103° 29' 39.118 W
3,698.0	5.67	193.31	3,691.1	-142.8	-1.0	494,257.46	800,452.06	32° 21' 21.574 N	103° 29' 39.128 W
3,792.0	5.87	194.28	3,784.6	-152.0	-3.3	494,248.29	800,449.80	32° 21' 21.483 N	103° 29' 39.155 W
3,887.0	5.77	193.25	3,879.1	-161.4	-5.6	494,238.93	800,447.51	32° 21' 21.391 N	103° 29' 39.183 W
3,982.0	5.32	191.58	3,973.7	-170.3	-7.6	494,229.97	800,445.53	32° 21' 21.302 N	103° 29' 39.207 W
4,076.0	5.37	185.53	4,067.3	-179.0	-8.9	494,221.32	800,444.23	32° 21' 21.217 N	103° 29' 39.223 W
4,170.0	5.79	188.70	4,160.8	-188.0	-10.0	494,212.26	800,443.09	32° 21' 21.127 N	103° 29' 39.237 W
4,263.0	5.53	186.61	4,253.4	-197.1	-11.2	494,203.17	800,441.87	32° 21' 21.037 N	103° 29' 39.252 W
4,358.0	5.87	189.51	4,347.9	-206.5	-12.6	494,193.83	800,440.54	32° 21' 20.945 N	103° 29' 39.268 W
4,452.0	6.20	187.97	4,441.4	-216.2	-14.1	494,184.06	800,439.04	32° 21' 20.848 N	103° 29' 39.286 W
4,545.0	6.09	191.60	4,533.8	-226.0	-15.8	494,174.26	800,437.35	32° 21' 20.751 N	103° 29' 39.307 W
4,640.0	6.22	189.26	4,628.3	-236.1	-17.6	494,164.24	800,435.51	32° 21' 20.653 N	103° 29' 39.329 W
4,734.0	6.29	191.09	4,721.7	-246.1	-19.4	494,154.16	800,433.70	32° 21' 20.553 N	103° 29' 39.351 W
4,829.0	6.29	191.05	4,816.2	-256.3	-21.4	494,143.95	800,431.70	32° 21' 20.452 N	103° 29' 39.376 W
4,923.0	6.27	191.65	4,909.6	-266.4	-23.4	494,133.86	800,429.68	32° 21' 20.352 N	103° 29' 39.400 W
5,017.0	6.22	192.40	5,003.0	-276.4	-25.6	494,123.86	800,427.55	32° 21' 20.254 N	103° 29' 39.426 W
5,113.0	6.24	190.65	5,098.5	-286.6	-27.6	494,113.66	800,425.47	32° 21' 20.153 N	103° 29' 39.451 W
5,176.0	5.60	181.80	5,161.1	-293.1	-28.4	494,107.22	800,424.74	32° 21' 20.089 N	103° 29' 39.460 W
5,270.0	5.26	170.07	5,254.7	-301.9	-27.8	494,098.39	800,425.34	32° 21' 20.002 N	103° 29' 39.454 W
5,364.0	3.91	169.16	5,348.4	-309.3	-26.4	494,091.00	800,426.68	32° 21' 19.928 N	103° 29' 39.439 W
5,458.0	2.75	159.06	5,442.2	-314.5	-25.0	494,085.74	800,428.09	32° 21' 19.876 N	103° 29' 39.423 W
5,553.0	1.94	148.71	5,537.2	-318.0	-23.4	494,082.24	800,429.74	32° 21' 19.842 N	103° 29' 39.404 W
5,647.0	0.54	152.99	5,631.1	-319.8	-22.3	494,080.49	800,430.77	32° 21' 19.824 N	103° 29' 39.392 W
5,741.0	0.07	247.28	5,725.1	-320.2	-22.2	494,080.07	800,430.92	32° 21' 19.820 N	103° 29' 39.391 W
5,836.0	0.30	313.07	5,820.1	-320.1	-22.4	494,080.22	800,430.68	32° 21' 19.822 N	103° 29' 39.393 W
5,930.0	0.45	281.98	5,914.1	-319.8	-23.0	494,080.46	800,430.14	32° 21' 19.824 N	103° 29' 39.400 W
6,024.0	0.61	277.17	6,008.1	-319.7	-23.8	494,080.60	800,429.28	32° 21' 19.825 N	103° 29' 39.410 W

Halliburton

Survey Report - Geographic

Company:	Devon Energy Corporation	Local Co-ordinate Reference:	Well 153H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GL+KB,32' @ 3463.3usft (Nabors X20)
Site:	Gaucha Unit with Offsets	MD Reference:	GL+KB,32' @ 3463.3usft (Nabors X20)
Well:	153H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual Drilled	Database:	SOUTH US

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
6,118.0	0.62	266.89	6,102.1	-319.7	-24.8	494,080.64	800,428.28	32° 21' 19.826 N	103° 29' 39.421 W	
6,212.0	0.52	255.84	6,196.1	-319.8	-25.7	494,080.50	800,427.36	32° 21' 19.825 N	103° 29' 39.432 W	
6,306.0	0.63	258.42	6,290.1	-320.0	-26.7	494,080.30	800,426.44	32° 21' 19.823 N	103° 29' 39.443 W	
6,399.0	0.72	267.58	6,383.1	-320.1	-27.8	494,080.17	800,425.35	32° 21' 19.821 N	103° 29' 39.456 W	
6,494.0	0.83	272.67	6,478.1	-320.1	-29.0	494,080.18	800,424.07	32° 21' 19.822 N	103° 29' 39.470 W	
6,588.0	0.79	261.44	6,572.1	-320.2	-30.4	494,080.11	800,422.75	32° 21' 19.821 N	103° 29' 39.486 W	
6,683.0	0.93	251.89	6,667.1	-320.5	-31.7	494,079.77	800,421.37	32° 21' 19.818 N	103° 29' 39.502 W	
6,776.0	1.13	243.41	6,760.1	-321.2	-33.3	494,079.13	800,419.83	32° 21' 19.812 N	103° 29' 39.520 W	
6,869.0	1.27	248.51	6,853.1	-321.9	-35.1	494,078.34	800,418.05	32° 21' 19.804 N	103° 29' 39.541 W	
6,964.0	1.33	249.66	6,948.0	-322.7	-37.1	494,077.57	800,416.04	32° 21' 19.796 N	103° 29' 39.564 W	
7,058.0	1.47	252.93	7,042.0	-323.5	-39.2	494,076.84	800,413.86	32° 21' 19.789 N	103° 29' 39.590 W	
7,153.0	1.59	340.78	7,137.0	-322.6	-40.8	494,077.73	800,412.26	32° 21' 19.798 N	103° 29' 39.608 W	
7,246.0	1.78	351.74	7,229.9	-319.9	-41.5	494,080.37	800,411.63	32° 21' 19.825 N	103° 29' 39.615 W	
7,341.0	1.48	328.81	7,324.9	-317.4	-42.3	494,082.88	800,410.78	32° 21' 19.849 N	103° 29' 39.625 W	
7,435.0	0.93	308.41	7,418.9	-315.9	-43.5	494,084.40	800,409.56	32° 21' 19.864 N	103° 29' 39.639 W	
7,529.0	1.25	13.81	7,512.9	-314.4	-43.9	494,085.87	800,409.21	32° 21' 19.879 N	103° 29' 39.643 W	
7,623.0	1.17	334.82	7,606.8	-312.6	-44.1	494,087.73	800,409.04	32° 21' 19.898 N	103° 29' 39.645 W	
7,718.0	1.45	42.27	7,701.8	-310.8	-43.7	494,089.50	800,409.44	32° 21' 19.915 N	103° 29' 39.640 W	
7,812.0	0.78	44.09	7,795.8	-309.5	-42.4	494,090.84	800,410.68	32° 21' 19.928 N	103° 29' 39.626 W	
7,906.0	0.59	25.35	7,889.8	-308.6	-41.8	494,091.73	800,411.34	32° 21' 19.937 N	103° 29' 39.618 W	
8,001.0	0.35	0.68	7,984.8	-307.8	-41.6	494,092.47	800,411.55	32° 21' 19.944 N	103° 29' 39.615 W	
8,095.0	0.06	2.74	8,078.8	-307.5	-41.6	494,092.80	800,411.55	32° 21' 19.948 N	103° 29' 39.615 W	
8,189.0	0.24	242.32	8,172.8	-307.5	-41.7	494,092.76	800,411.38	32° 21' 19.947 N	103° 29' 39.617 W	
8,282.0	0.38	267.94	8,265.8	-307.6	-42.2	494,092.66	800,410.90	32° 21' 19.946 N	103° 29' 39.623 W	
8,376.0	0.58	297.55	8,359.8	-307.4	-42.9	494,092.87	800,410.17	32° 21' 19.948 N	103° 29' 39.631 W	
8,469.0	0.74	295.88	8,452.8	-306.9	-43.9	494,093.35	800,409.21	32° 21' 19.953 N	103° 29' 39.643 W	
8,563.0	0.80	295.98	8,546.8	-306.4	-45.0	494,093.90	800,408.07	32° 21' 19.959 N	103° 29' 39.656 W	
8,657.0	0.41	0.53	8,640.8	-305.8	-45.6	494,094.52	800,407.49	32° 21' 19.965 N	103° 29' 39.662 W	
8,751.0	0.34	244.89	8,734.8	-305.5	-45.9	494,094.74	800,407.24	32° 21' 19.967 N	103° 29' 39.665 W	
8,845.0	0.87	212.47	8,828.8	-306.3	-46.5	494,094.02	800,406.60	32° 21' 19.960 N	103° 29' 39.673 W	
8,939.0	1.77	193.92	8,922.7	-308.3	-47.2	494,092.01	800,405.87	32° 21' 19.940 N	103° 29' 39.682 W	
9,036.0	1.93	203.68	9,019.7	-311.2	-48.3	494,089.06	800,404.85	32° 21' 19.911 N	103° 29' 39.694 W	
9,127.0	1.29	180.61	9,110.7	-313.7	-48.9	494,086.63	800,404.23	32° 21' 19.887 N	103° 29' 39.701 W	
9,221.0	1.05	154.76	9,204.6	-315.5	-48.5	494,084.79	800,404.58	32° 21' 19.869 N	103° 29' 39.697 W	
9,315.0	1.70	173.01	9,298.6	-317.7	-48.0	494,082.63	800,405.12	32° 21' 19.847 N	103° 29' 39.691 W	
9,410.0	1.12	193.23	9,393.6	-320.0	-48.0	494,080.33	800,405.08	32° 21' 19.825 N	103° 29' 39.692 W	
9,504.0	1.89	104.81	9,487.6	-321.3	-46.7	494,079.04	800,406.37	32° 21' 19.812 N	103° 29' 39.677 W	
9,598.0	1.72	109.48	9,581.5	-322.1	-43.9	494,078.17	800,409.20	32° 21' 19.803 N	103° 29' 39.644 W	
9,692.0	1.17	131.66	9,675.5	-323.2	-41.9	494,077.06	800,411.24	32° 21' 19.792 N	103° 29' 39.620 W	
9,787.0	3.52	12.47	9,770.4	-321.0	-40.5	494,079.27	800,412.60	32° 21' 19.814 N	103° 29' 39.604 W	
KOP 9787' MD (30.9169' FSL, 1960.5889' FWL) Sec 29										
9,801.6	6.05	8.51	9,784.9	-319.8	-40.3	494,080.46	800,412.81	32° 21' 19.825 N	103° 29' 39.602 W	
Gaucha 153H_KOP (copy)										
9,882.0	20.09	4.65	9,863.1	-301.8	-38.5	494,098.51	800,414.56	32° 21' 20.004 N	103° 29' 39.580 W	
9,931.0	27.95	6.40	9,907.8	-281.9	-36.6	494,118.34	800,416.53	32° 21' 20.200 N	103° 29' 39.555 W	
9,976.0	32.88	6.01	9,946.6	-259.3	-34.1	494,140.98	800,418.99	32° 21' 20.424 N	103° 29' 39.524 W	
9,990.0	35.07	6.94	9,958.2	-251.5	-33.2	494,148.76	800,419.87	32° 21' 20.501 N	103° 29' 39.513 W	
Cross First Perf 9990' MD(100.3506' FSL, 1988.2790' FWL)Sec 29										
10,022.0	40.09	8.74	9,983.6	-232.2	-30.6	494,168.08	800,422.55	32° 21' 20.692 N	103° 29' 39.480 W	
10,070.0	48.18	5.37	10,018.0	-199.1	-26.5	494,201.22	800,426.58	32° 21' 21.019 N	103° 29' 39.430 W	
10,118.0	47.97	5.38	10,050.1	-163.5	-23.2	494,236.78	800,429.92	32° 21' 21.371 N	103° 29' 39.388 W	
10,164.0	46.87	3.95	10,081.2	-129.8	-20.4	494,270.54	800,432.68	32° 21' 21.705 N	103° 29' 39.353 W	
10,212.0	48.87	4.72	10,113.4	-94.3	-17.7	494,306.03	800,435.38	32° 21' 22.056 N	103° 29' 39.318 W	
10,259.0	54.12	3.41	10,142.6	-57.6	-15.1	494,342.70	800,437.97	32° 21' 22.418 N	103° 29' 39.284 W	

Halliburton

Survey Report - Geographic

Company: Devon Energy Corporation
Project: Lea County, NM (NAD 83)
Site: Gaucho Unit with Offsets
Well: 153H
Wellbore: Wellbore #1
Design: Actual Drilled

Local Co-ordinate Reference: Well 153H
TVD Reference: GL+KB,32' @ 3463.3usft (Nabors X20)
MD Reference: GL+KB,32' @ 3463.3usft (Nabors X20)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: SOUTH US

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,305.0	59.96	358.88	10,167.7	-19.0	-14.4	494,381.26	800,438.69	32° 21' 22.800 N	103° 29' 39.273 W
10,354.0	62.07	358.27	10,191.4	23.8	-15.5	494,424.11	800,437.62	32° 21' 23.224 N	103° 29' 39.281 W
10,400.0	62.94	356.74	10,212.7	64.6	-17.3	494,464.87	800,435.84	32° 21' 23.627 N	103° 29' 39.298 W
10,448.0	65.51	355.53	10,233.5	107.7	-20.2	494,507.99	800,432.92	32° 21' 24.054 N	103° 29' 39.328 W
10,495.0	66.86	355.47	10,252.5	150.6	-23.6	494,550.86	800,429.55	32° 21' 24.478 N	103° 29' 39.364 W
10,541.0	67.18	354.73	10,270.5	192.8	-27.2	494,593.05	800,425.93	32° 21' 24.896 N	103° 29' 39.402 W
10,588.0	67.98	354.64	10,288.4	236.0	-31.2	494,636.31	800,421.91	32° 21' 25.325 N	103° 29' 39.445 W
10,636.0	70.11	354.52	10,305.5	280.6	-35.4	494,680.93	800,417.67	32° 21' 25.766 N	103° 29' 39.490 W
10,640.1	70.17	354.81	10,307.0	284.5	-35.8	494,684.79	800,417.31	32° 21' 25.805 N	103° 29' 39.494 W
Gaucho 153H_EOC (copy)									
10,683.0	70.77	357.81	10,321.3	324.8	-38.4	494,725.11	800,414.71	32° 21' 26.204 N	103° 29' 39.521 W
10,730.0	71.92	359.90	10,336.3	369.3	-39.3	494,769.63	800,413.83	32° 21' 26.644 N	103° 29' 39.527 W
10,777.0	77.47	0.62	10,348.7	414.7	-39.1	494,814.95	800,414.04	32° 21' 27.093 N	103° 29' 39.520 W
10,806.0	81.96	1.94	10,353.9	443.2	-38.4	494,843.47	800,414.68	32° 21' 27.375 N	103° 29' 39.510 W
10,840.0	87.26	1.76	10,357.1	477.0	-37.3	494,877.29	800,415.77	32° 21' 27.709 N	103° 29' 39.494 W
10,934.0	87.94	1.29	10,361.0	570.9	-34.8	494,971.17	800,418.27	32° 21' 28.638 N	103° 29' 39.457 W
11,029.0	89.48	359.49	10,363.2	665.8	-34.2	495,066.14	800,418.91	32° 21' 29.578 N	103° 29' 39.441 W
11,122.0	89.41	359.25	10,364.1	758.8	-35.2	495,159.13	800,417.89	32° 21' 30.498 N	103° 29' 39.444 W
11,217.0	89.07	358.12	10,365.3	853.8	-37.4	495,254.09	800,415.71	32° 21' 31.438 N	103° 29' 39.461 W
11,311.0	90.43	357.65	10,365.7	947.7	-40.9	495,348.02	800,412.24	32° 21' 32.368 N	103° 29' 39.493 W
11,405.0	91.97	359.29	10,363.8	1,041.7	-43.4	495,441.96	800,409.73	32° 21' 33.297 N	103° 29' 39.513 W
11,499.0	91.82	1.03	10,360.7	1,135.6	-43.1	495,535.91	800,409.99	32° 21' 34.227 N	103° 29' 39.502 W
11,593.0	92.44	1.24	10,357.2	1,229.5	-41.3	495,629.82	800,411.85	32° 21' 35.156 N	103° 29' 39.471 W
11,686.0	92.74	0.62	10,353.0	1,322.4	-39.7	495,722.72	800,413.36	32° 21' 36.075 N	103° 29' 39.445 W
11,781.0	88.76	1.39	10,351.7	1,417.4	-38.1	495,817.67	800,415.03	32° 21' 37.014 N	103° 29' 39.417 W
11,874.0	89.10	1.26	10,353.5	1,510.3	-35.9	495,910.63	800,417.18	32° 21' 37.934 N	103° 29' 39.384 W
11,969.0	89.54	0.73	10,354.6	1,605.3	-34.3	496,005.61	800,418.83	32° 21' 38.874 N	103° 29' 39.356 W
12,063.0	91.30	3.06	10,353.9	1,699.3	-31.2	496,099.55	800,421.94	32° 21' 39.803 N	103° 29' 39.311 W
12,158.0	91.54	3.23	10,351.5	1,794.1	-26.0	496,194.37	800,427.15	32° 21' 40.741 N	103° 29' 39.241 W
12,253.0	90.83	2.94	10,349.6	1,888.9	-20.8	496,289.22	800,432.26	32° 21' 41.679 N	103° 29' 39.173 W
12,348.0	90.40	2.27	10,348.6	1,983.8	-16.5	496,384.11	800,436.58	32° 21' 42.618 N	103° 29' 39.114 W
12,537.0	89.11	0.33	10,349.4	2,172.8	-12.2	496,573.05	800,440.86	32° 21' 44.687 N	103° 29' 39.047 W
12,631.0	90.59	357.73	10,349.6	2,266.7	-13.8	496,667.02	800,439.27	32° 21' 45.417 N	103° 29' 39.057 W
12,725.0	90.65	358.30	10,348.6	2,360.7	-17.1	496,760.96	800,436.02	32° 21' 46.346 N	103° 29' 39.086 W
12,915.0	89.75	357.82	10,347.9	2,550.6	-23.5	496,950.85	800,429.58	32° 21' 48.226 N	103° 29' 39.144 W
13,009.0	89.97	357.43	10,348.2	2,644.5	-27.4	497,044.77	800,425.69	32° 21' 49.155 N	103° 29' 39.181 W
13,103.0	90.74	358.77	10,347.6	2,738.4	-30.5	497,138.71	800,422.57	32° 21' 50.085 N	103° 29' 39.208 W
13,196.0	90.12	357.94	10,346.9	2,831.4	-33.2	497,231.67	800,419.90	32° 21' 51.005 N	103° 29' 39.231 W
13,291.0	90.92	0.01	10,346.0	2,926.4	-34.9	497,326.64	800,418.20	32° 21' 51.945 N	103° 29' 39.242 W
13,385.0	91.51	359.29	10,344.0	3,020.3	-35.5	497,420.62	800,417.63	32° 21' 52.875 N	103° 29' 39.240 W
13,480.0	89.85	0.31	10,342.9	3,115.3	-35.8	497,515.61	800,417.30	32° 21' 53.815 N	103° 29' 39.235 W
13,574.0	87.75	359.02	10,344.9	3,209.3	-36.4	497,609.58	800,416.75	32° 21' 54.745 N	103° 29' 39.233 W
13,669.0	89.66	358.82	10,347.0	3,304.2	-38.1	497,704.53	800,414.96	32° 21' 55.685 N	103° 29' 39.245 W
13,762.0	91.33	0.27	10,346.2	3,397.2	-38.9	497,797.52	800,414.22	32° 21' 56.605 N	103° 29' 39.246 W
13,856.0	92.31	0.82	10,343.2	3,491.2	-38.0	497,891.47	800,415.11	32° 21' 57.534 N	103° 29' 39.227 W
13,950.0	93.15	0.68	10,338.8	3,585.1	-36.8	497,985.35	800,416.34	32° 21' 58.463 N	103° 29' 39.204 W
14,045.0	90.25	1.27	10,335.9	3,680.0	-35.1	498,080.29	800,417.96	32° 21' 59.402 N	103° 29' 39.176 W
14,139.0	88.86	2.15	10,336.7	3,773.9	-32.3	498,174.24	800,420.76	32° 22' 0.332 N	103° 29' 39.135 W
14,233.0	91.42	3.80	10,336.4	3,867.8	-27.5	498,268.10	800,425.64	32° 22' 1.260 N	103° 29' 39.069 W
14,327.0	86.98	2.02	10,337.7	3,961.7	-22.7	498,361.94	800,430.41	32° 22' 2.188 N	103° 29' 39.005 W
14,421.0	86.18	2.19	10,343.4	4,055.4	-19.2	498,455.71	800,433.86	32° 22' 3.116 N	103° 29' 38.956 W
14,514.0	88.30	1.31	10,347.8	4,148.3	-16.4	498,548.55	800,436.70	32° 22' 4.034 N	103° 29' 38.915 W
14,608.0	87.72	0.68	10,351.1	4,242.2	-14.8	498,642.48	800,438.33	32° 22' 4.964 N	103° 29' 38.889 W
14,703.0	89.63	359.55	10,353.3	4,337.2	-14.6	498,737.45	800,438.52	32° 22' 5.903 N	103° 29' 38.876 W
14,797.0	90.31	358.15	10,353.3	4,431.1	-16.5	498,831.43	800,436.63	32° 22' 6.833 N	103° 29' 38.890 W

Halliburton

Survey Report - Geographic

Company: Devon Energy Corporation
 Project: Lea County, NM (NAD 83)
 Site: Gaucho Unit with Offsets
 Well: 153H
 Wellbore: Wellbore #1
 Design: Actual Drilled

Local Co-ordinate Reference: Well 153H
 TVD Reference: GL+KB,32' @ 3463.3usft (Nabors X20)
 MD Reference: GL+KB,32' @ 3463.3usft (Nabors X20)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: SOUTH US

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,891.0	92.09	359.55	10,351.4	4,525.1	-18.4	498,925.38	800,434.74	32° 22' 7.763 N	103° 29' 38.903 W
14,986.0	92.34	358.70	10,347.7	4,620.0	-19.8	499,020.30	800,433.29	32° 22' 8.702 N	103° 29' 38.911 W
15,080.0	92.38	359.05	10,343.8	4,713.9	-21.7	499,114.20	800,431.45	32° 22' 9.632 N	103° 29' 38.924 W
15,175.0	91.97	358.26	10,340.2	4,808.8	-23.9	499,209.11	800,429.22	32° 22' 10.571 N	103° 29' 38.942 W
15,268.0	91.95	357.92	10,337.0	4,901.7	-27.0	499,302.00	800,426.12	32° 22' 11.490 N	103° 29' 38.969 W
15,296.0	91.93	357.81	10,336.1	4,929.7	-28.0	499,329.96	800,425.08	32° 22' 11.767 N	103° 29' 38.979 W
Cross Sec Line 15296' MD (0.25' FNL - 2004.69') Sec 29 / 20									
15,362.0	91.88	357.54	10,333.9	4,995.6	-30.7	499,395.87	800,422.40	32° 22' 12.419 N	103° 29' 39.004 W
15,456.0	89.20	0.14	10,333.0	5,089.5	-32.6	499,489.83	800,420.50	32° 22' 13.349 N	103° 29' 39.018 W
15,551.0	89.44	1.46	10,334.1	5,184.5	-31.3	499,584.82	800,421.83	32° 22' 14.289 N	103° 29' 38.994 W
15,645.0	89.01	1.49	10,335.4	5,278.5	-28.9	499,678.78	800,424.25	32° 22' 15.219 N	103° 29' 38.957 W
15,740.0	88.49	1.38	10,337.5	5,373.4	-26.5	499,773.72	800,426.63	32° 22' 16.158 N	103° 29' 38.920 W
15,834.0	89.41	2.00	10,339.2	5,467.4	-23.7	499,867.66	800,429.40	32° 22' 17.087 N	103° 29' 38.879 W
15,928.0	89.28	1.17	10,340.3	5,561.3	-21.1	499,961.62	800,432.00	32° 22' 18.017 N	103° 29' 38.840 W
16,022.0	88.80	0.94	10,341.9	5,655.3	-19.4	500,055.59	800,433.73	32° 22' 18.946 N	103° 29' 38.812 W
16,117.0	90.03	0.94	10,342.8	5,750.3	-17.8	500,150.57	800,435.29	32° 22' 19.886 N	103° 29' 38.785 W
16,211.0	89.69	1.63	10,343.1	5,844.3	-15.7	500,244.55	800,437.39	32° 22' 20.816 N	103° 29' 38.752 W
16,306.0	89.88	0.93	10,343.4	5,939.2	-13.6	500,339.52	800,439.52	32° 22' 21.755 N	103° 29' 38.718 W
16,400.0	91.76	1.00	10,342.1	6,033.2	-12.0	500,433.50	800,441.10	32° 22' 22.685 N	103° 29' 38.691 W
16,495.0	91.91	0.72	10,339.0	6,128.1	-10.6	500,528.44	800,442.52	32° 22' 23.624 N	103° 29' 38.666 W
16,589.0	91.76	0.46	10,336.0	6,222.1	-9.6	500,622.38	800,443.49	32° 22' 24.554 N	103° 29' 38.646 W
16,683.0	90.83	1.19	10,333.9	6,316.1	-8.3	500,716.35	800,444.84	32° 22' 25.483 N	103° 29' 38.622 W
16,777.0	90.71	2.96	10,332.6	6,410.0	-4.9	500,810.27	800,448.25	32° 22' 26.413 N	103° 29' 38.573 W
16,871.0	89.32	2.93	10,332.6	6,503.9	0.0	500,904.15	800,453.08	32° 22' 27.341 N	103° 29' 38.509 W
16,966.0	90.22	3.60	10,333.0	6,598.7	5.4	500,998.99	800,458.49	32° 22' 28.279 N	103° 29' 38.437 W
17,060.0	88.12	3.08	10,334.3	6,692.5	10.9	501,092.82	800,463.96	32° 22' 29.207 N	103° 29' 38.364 W
17,154.0	87.84	2.81	10,337.7	6,786.3	15.7	501,186.63	800,468.79	32° 22' 30.135 N	103° 29' 38.299 W
17,248.0	87.63	2.74	10,341.4	6,880.2	20.2	501,280.45	800,473.34	32° 22' 31.063 N	103° 29' 38.238 W
17,342.0	88.83	1.48	10,344.3	6,974.0	23.7	501,374.34	800,476.80	32° 22' 31.992 N	103° 29' 38.189 W
17,437.0	89.20	1.15	10,345.9	7,069.0	25.9	501,469.30	800,478.98	32° 22' 32.931 N	103° 29' 38.155 W
17,530.0	89.11	359.45	10,347.3	7,162.0	26.4	501,562.28	800,479.46	32° 22' 33.851 N	103° 29' 38.141 W
17,624.0	91.02	0.17	10,347.2	7,256.0	26.0	501,656.28	800,479.15	32° 22' 34.781 N	103° 29' 38.136 W
17,719.0	90.92	0.03	10,345.6	7,351.0	26.2	501,751.26	800,479.32	32° 22' 35.721 N	103° 29' 38.125 W
17,795.0	90.83	359.47	10,344.4	7,427.0	25.9	501,827.25	800,478.99	32° 22' 36.473 N	103° 29' 38.122 W
Last MWD Survey									
17,838.0	90.83	359.47	10,343.8	7,470.0	25.5	501,870.25	800,478.59	32° 22' 36.898 N	103° 29' 38.123 W
Cross Last Perf Line 17838' MD (2539.94' FSL, 2073.4973' FWL) Sec 20									
17,849.0	90.83	359.47	10,343.6	7,481.0	25.4	501,881.25	800,478.49	32° 22' 37.007 N	103° 29' 38.123 W
Projection to TD 17849' MD (2550.84' FSL, 2073.4618' FWL) Sec 20 - Gaucho 153H_BHL (copy)									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
146.0	146.0	-0.2	-0.1	First MWD Survey
9,787.0	9,770.4	-321.0	-40.5	KOP 9787' MD (30.9169' FSL, 1960.5889' FWL) Sec 29
9,990.0	9,958.2	-251.5	-33.2	Cross First Perf 9990' MD (100.3506' FSL, 1968.2790' FWL) Sec 29
15,296.0	10,336.1	4,929.7	-28.0	Cross Sec Line 15296' MD (0.25' FNL - 2004.69') Sec 29 / 20
17,795.0	10,344.4	7,427.0	25.9	Last MWD Survey
17,838.0	10,343.8	7,470.0	25.5	Cross Last Perf Line 17838' MD (2539.94' FSL, 2073.4973' FWL) Sec 20
17,849.0	10,343.6	7,481.0	25.4	Projection to TD 17849' MD (2550.84' FSL, 2073.4618' FWL) Sec 20

Halliburton
Survey Report - Geographic

Company:	Devon Energy Corporation	Local Co-ordinate Reference:	Well 153H
Project:	Lea County, NM (NAD 83)	TVD Reference:	GL+KB, 32' @ 3463.3usft (Nabors X20)
Site:	Gaucha Unit with Offsets	MD Reference:	GL+KB, 32' @ 3463.3usft (Nabors X20)
Well:	153H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual Drilled	Database:	SOUTH US

Checked By: _____	Approved By: _____	Date: _____
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Devon Energy Corporation

WELL DETAILS: 153H

GL+KB, 32' @ 3463.3usft (Nabors X20)

Ground Level: 3431.3

0.0 0.0 Northing 494400.29 Easting 800453.11 UTM Zone 12N 21° 22.987' N 103° 29' 38.103' W

ANNOTATIONS

MD	Inc	Azi	TVD	+N-S	+E-W	Vsect	Annotation
146.0	0.16	207.31	146.0	-0.2	-0.1	-0.2	First MWD Survey
9787.0	3.52	12.47	9770.4	-321.0	-40.5	-321.1	KOP 9787' MD (30.9169' FSL, 1960.5889' FWL) Sec 29
9990.0	35.07	6.94	9958.2	-251.5	-33.2	-251.6	Cross First Perf 9990' MD (100.3506' FSL, 1968.2790' FWL) Sec 29
15298.0	91.93	357.81	10338.1	4929.7	-28.0	4929.6	Cross Sec Line 15298' MD (0.25' FNL - 2004.69') Sec 29 / 20 7427.0
17795.0	90.83	359.47	10344.4	7427.0	25.9	7427.0	Last MWD Survey
17838.0	90.83	359.47	10343.8	7470.0	25.5	7470.0	Cross Last Perf Line 17838' MD (2539.94' FSL, 2073.4973' FWL) Sec 20
17849.0	90.83	359.47	10343.6	7481.0	25.4	7481.0	Projection to TD 17849' MD (2550.84' FSL, 2073.4618' FWL) Sec 20

Lea County, NM (NAD 83)
Gaucha Unit with Offsets
API #
153H
Job #
Wellbore #1
Actual Drilled
Nabors X20

SHL

351' FSL - 2003' FWL

X: 800453.11

Y: 494400.29

32.3563652303712

-103.494195203532

BHL

2550.84' FSL, 2073.4618' FWL

MD: 17849.0

TVD: 10343.6

VS: 7481.0

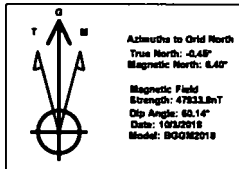
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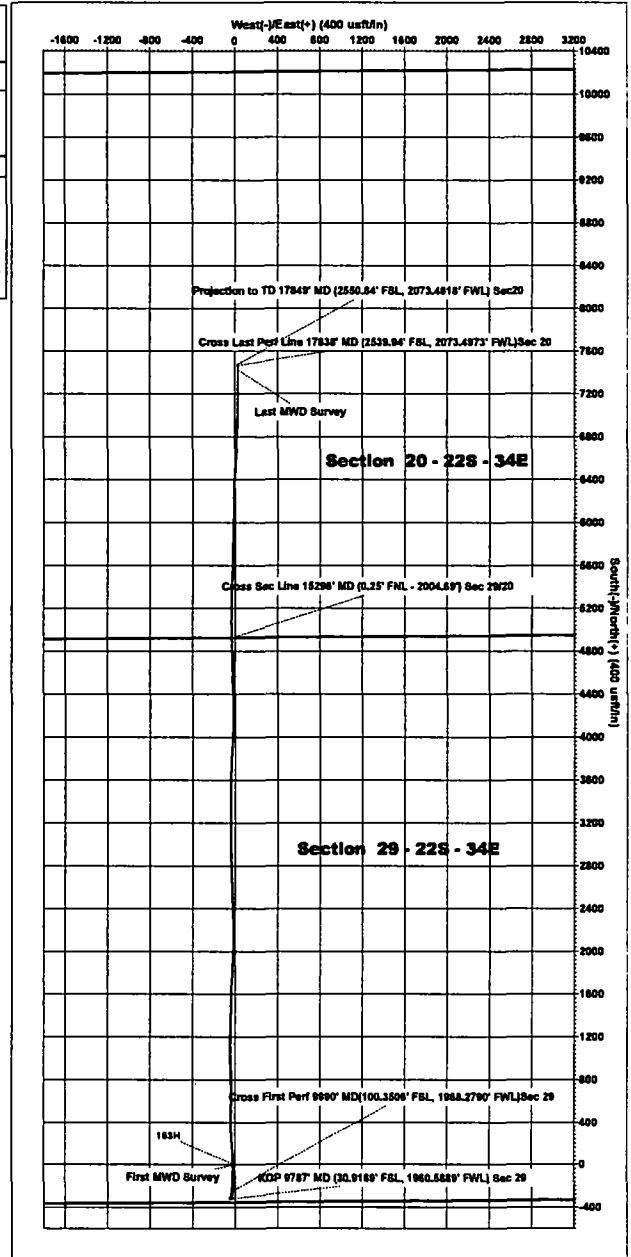
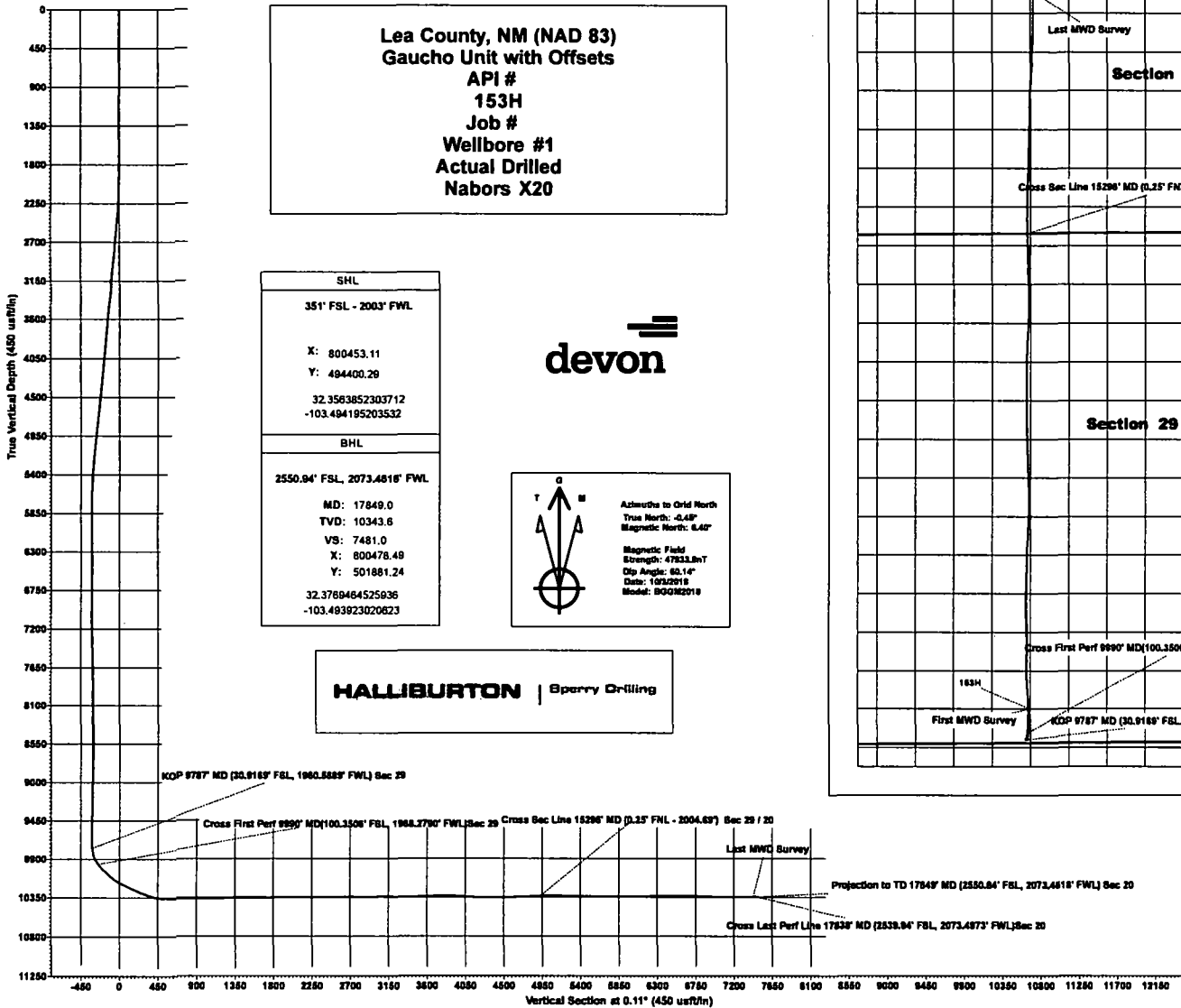
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devon



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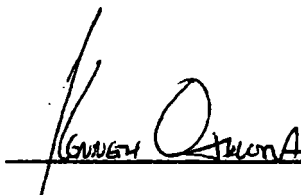


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State of New Mexico, Lea County

I, Kenneth Otolara certify that I am employed by Halliburton Energy Services, Inc. (aka Sperry Drilling) and that on the dates of October 29, 2018 through November 16, 2018, I did conduct or supervise the taking of MWD directional surveys for the Gaucho Unit 37H well from a depth of 132' MD to a depth of 15012' MD. This data is true, correct, complete and within the limitations of the tools as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling). I am authorized and qualified to make this report and these surveys were conducted at the request of Devon Energy Corporation, for the Gaucho Unit 37H well in Lea County. I have reviewed this report and find that it confirms to the principles and procedures as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling.)



Kenneth Otolara
Field Engineer