

Well Name: GAUCHO 21 FEDERAL 4H

MAY 05 2016

RECEIVED

Sub-Division		Region		Well Name		County		State/Province	
DELAWARE BASIN EAST		BASIN EAST		OJO CHISO		LEA		NM	
Surface Legal Location		APORN		Latitude (°)		Longitude (°)		Orig KB Elevation (ft)	
SEC 21, T22S R34E		3002542137		32° 22' 13.709" N		103° 28' 43.469" W		3,457.20	
Wellbore Name		Parent Wellbore		SAP Well ID		Vertical Section Direction (°)		KB - GL (ft)	
OH		OH		38690		0.00		25.00	
Kick Offs & Key Depths									
Date				Type		Top Depth (ftKB)			
Actual Deviation Survey				Deviation?		Proposed?		Proposed Deviation Survey	
EXTREME/MWD, Proposed? No				No		No			
Deviation Survey									
Date				Description					
7/31/2015				EXTREME/MWD					
MWD Tie in (ftKB)		TVD Tie in (ftKB)		Inclination Tie in (°)		Azimuth Tie in (°)		NS Tie in (ft)	
0.00		0.00		0.00		0.00		0.00	
Survey Data									
Date	MWD (ftKB)	Incl (°)	Asm (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Survey Tool
7/31/2015	135.00	0.31	321.32	135.00	0.29	0.29	-0.23	0.23	MWD
7/31/2015	219.00	0.30	296.62	219.00	0.56	0.56	-0.57	0.16	MWD
7/31/2015	314.00	0.30	283.12	314.00	0.73	0.73	-1.03	0.07	MWD
7/31/2015	439.00	0.40	275.81	438.99	0.85	0.85	-1.78	0.09	MWD
7/31/2015	530.00	0.40	271.22	529.99	0.89	0.89	-2.42	0.04	MWD
8/1/2015	615.00	0.40	253.70	614.99	0.81	0.81	-3.00	0.14	MWD
8/1/2015	710.00	0.30	211.82	709.99	0.50	0.50	-3.45	0.28	MWD
8/1/2015	808.00	0.31	170.91	807.99	0.03	0.03	-3.54	0.22	MWD
8/1/2015	903.00	0.48	126.70	902.99	0.47	0.47	-3.18	0.35	MWD
8/1/2015	998.00	0.48	73.70	997.98	0.59	0.59	-2.48	0.45	MWD
8/1/2015	1,093.00	0.70	47.21	1,092.98	0.09	0.09	-1.67	0.36	MWD
8/1/2015	1,187.00	1.01	36.13	1,186.97	0.97	0.97	-0.76	0.37	MWD
8/1/2015	1,282.00	1.41	37.10	1,281.95	2.58	2.58	-0.43	0.42	MWD
8/1/2015	1,378.00	1.41	46.63	1,377.92	4.33	4.33	-2.01	0.24	MWD
8/1/2015	1,473.00	1.49	48.61	1,472.89	5.95	5.95	-3.78	0.10	MWD
8/1/2015	1,565.00	1.58	44.70	1,564.85	7.65	7.65	-5.57	0.15	MWD
8/1/2015	1,660.00	1.19	34.73	1,659.83	9.39	9.39	-7.06	0.48	MWD
8/1/2015	1,739.00	0.88	34.11	1,738.81	10.56	10.56	-7.86	0.39	MWD
8/4/2015	1,892.00	0.60	55.40	1,891.80	11.99	11.99	-9.18	0.25	MWD
8/4/2015	1,987.00	0.70	55.40	1,986.79	12.60	12.60	-10.07	0.11	MWD
8/4/2015	2,082.00	0.60	74.60	2,081.79	13.07	13.07	-11.03	0.25	MWD
8/4/2015	2,177.00	0.60	63.30	2,176.78	13.42	13.42	-11.95	0.12	MWD
8/4/2015	2,272.00	0.60	62.50	2,271.78	13.87	13.87	-12.83	0.01	MWD
8/4/2015	2,367.00	0.80	55.30	2,366.77	14.48	14.48	-13.82	0.23	MWD
8/4/2015	2,462.00	1.00	47.30	2,461.76	15.42	15.42	-14.98	0.25	MWD
8/4/2015	2,557.00	1.00	57.50	2,556.74	16.43	16.43	-16.28	0.19	MWD
8/4/2015	2,652.00	1.20	54.40	2,651.73	17.45	17.45	-17.79	0.22	MWD
8/4/2015	2,746.00	1.40	60.70	2,745.70	18.59	18.59	-19.59	0.26	MWD
8/4/2015	2,841.00	1.60	62.30	2,840.67	19.77	19.77	-21.78	0.22	MWD
8/4/2015	2,935.00	2.10	62.10	2,934.62	21.19	21.19	-24.46	0.53	MWD
8/4/2015	3,031.00	2.50	62.80	3,030.54	22.97	22.97	-27.88	0.42	MWD
8/4/2015	3,125.00	2.50	61.60	3,124.45	24.88	24.88	-31.51	0.06	MWD
8/4/2015	3,220.00	1.60	61.10	3,219.39	26.51	26.51	-34.49	0.95	MWD
8/5/2015	3,315.00	2.60	55.60	3,314.33	28.37	28.37	-37.43	1.07	MWD
8/5/2015	3,409.00	2.40	58.40	3,408.24	30.60	30.60	-40.87	0.25	MWD
8/5/2015	3,504.00	2.10	60.20	3,503.16	32.51	32.51	-44.07	0.32	MWD
8/5/2015	3,599.00	1.80	59.70	3,598.11	34.13	34.13	-46.87	0.32	MWD
8/5/2015	3,692.00	1.40	60.00	3,691.07	35.43	35.43	-49.11	0.43	MWD
8/5/2015	3,787.00	1.20	50.90	3,786.05	36.64	36.64	-50.89	0.30	MWD
8/5/2015	3,882.00	0.90	57.90	3,881.03	37.66	37.66	-52.30	0.34	MWD
8/5/2015	3,977.00	0.50	56.00	3,976.02	38.29	38.29	-53.27	0.42	MWD
8/5/2015	4,071.00	0.50	51.70	4,070.02	38.77	38.77	-53.93	0.04	MWD
8/5/2015	4,166.00	0.40	57.20	4,165.02	39.21	39.21	-54.54	0.11	MWD
8/5/2015	4,261.00	0.10	356.40	4,260.02	39.47	39.47	-54.81	0.38	MWD
8/5/2015	4,354.00	0.40	333.30	4,353.02	39.84	39.84	-54.66	0.33	MWD
8/5/2015	4,449.00	0.40	41.40	4,448.01	40.39	40.39	-54.73	0.47	MWD
8/5/2015	4,544.00	0.90	67.00	4,543.01	40.93	40.93	-55.64	0.60	MWD
8/5/2015	4,639.00	0.80	74.40	4,638.00	41.40	41.40	-56.96	0.16	MWD
8/5/2015	4,733.00	0.90	66.30	4,731.99	41.87	41.87	-58.27	0.17	MWD
8/5/2015	4,828.00	0.60	69.50	4,826.98	42.35	42.35	-59.42	0.32	MWD
8/5/2015	4,922.00	0.70	50.00	4,920.97	42.89	42.89	-60.32	0.26	MWD
8/5/2015	4,951.00	0.70	55.30	4,949.97	43.10	43.10	-60.80	0.22	MWD
8/11/2015	5,107.00	0.40	21.30	5,105.98	44.15	44.15	-61.58	0.28	MWD
8/11/2015	5,202.00	0.50	355.50	5,200.96	44.88	44.88	-61.67	0.24	MWD
8/11/2015	5,297.00	0.80	59.30	5,295.96	45.63	45.63	-62.21	0.77	MWD
8/11/2015	5,392.00	1.90	85.50	5,390.93	46.09	46.09	-64.35	1.30	MWD
8/11/2015	5,487.00	3.10	94.10	5,485.84	46.03	46.03	-68.48	1.32	MWD
8/11/2015	5,582.00	5.10	95.30	5,580.59	45.46	45.46	-75.25	2.11	MWD
8/11/2015	5,677.00	4.80	95.00	5,675.23	44.72	44.72	-83.41	0.32	MWD
8/11/2015	5,772.00	4.70	95.20	5,769.91	44.02	44.02	-91.25	0.11	MWD
8/11/2015	5,867.00	4.70	94.60	5,864.59	43.35	43.35	-99.00	0.05	MWD
8/11/2015	5,962.00	4.60	92.20	5,959.28	42.90	42.90	-106.69	0.23	MWD
8/11/2015	6,151.00	4.80	88.00	6,147.84	42.88	42.88	-122.17	0.21	MWD
8/11/2015	6,340.00	5.00	85.50	6,335.95	43.80	43.80	-138.28	0.15	MWD
8/11/2015	6,530.00	4.70	84.10	6,525.27	45.25	45.25	-154.28	0.17	MWD
8/11/2015	6,720.00	5.20	89.00	6,714.56	46.20	46.20	-170.63	0.34	MWD

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DELAWARE BASIN EAST		BASIN EAST		OJO-CHISO		LEA		NM	
Surface Legal Location		APRUM		Latitude (°)		Longitude (°)		Orig KB Elevation (ft)	
SEC21 T22S R34E		3002542137		32° 22' 13.709" N		103° 28' 43.469" W		3,457.20	
Ground Elev MS. (ft)		KB - GL (ft)							
3,432.20		25.00							
Survey Data									
Date	MD (Kb)	Inc (ft)	Arm (ft)	TVD (Kb)	MS (ft)	NS (ft)	EW (ft)	DBP (ft)	Survey
8/11/2015	6,910.00	4.60	90.90	6,903.87	46.23	46.23	186.85	0.33	MWD LEAM DRILLING SYSTEMS
8/11/2015	7,099.00	5.10	93.90	7,092.19	45.54	45.54	202.81	0.30	MWD LEAM DRILLING SYSTEMS
8/11/2015	7,288.00	4.40	100.60	7,280.54	43.64	43.64	218.32	0.47	MWD LEAM DRILLING SYSTEMS
8/11/2015	7,478.00	4.10	105.90	7,470.02	40.44	40.44	232.02	0.26	MWD LEAM DRILLING SYSTEMS
8/11/2015	7,667.00	2.60	103.10	7,658.69	37.61	37.61	242.69	0.80	MWD LEAM DRILLING SYSTEMS
8/11/2015	7,762.00	2.10	84.60	7,753.61	37.29	37.29	246.52	0.95	MWD LEAM DRILLING SYSTEMS
8/11/2015	7,858.00	1.70	81.60	7,849.56	37.66	37.66	249.68	0.43	MWD LEAM DRILLING SYSTEMS
8/11/2015	8,047.00	1.10	82.90	8,038.50	38.30	38.30	254.26	0.32	MWD LEAM DRILLING SYSTEMS
8/11/2015	8,237.00	0.50	108.70	8,228.48	38.26	38.26	256.85	0.36	MWD LEAM DRILLING SYSTEMS
8/11/2015	8,427.00	0.30	107.60	8,416.48	37.84	37.84	258.11	0.11	MWD LEAM DRILLING SYSTEMS
8/11/2015	8,616.00	0.40	358.50	8,607.48	38.35	38.35	258.57	0.30	MWD LEAM DRILLING SYSTEMS
8/11/2015	8,805.00	0.50	300.10	8,796.47	39.42	39.42	257.83	0.24	MWD LEAM DRILLING SYSTEMS
8/11/2015	8,994.00	0.50	302.60	8,985.46	40.28	40.28	258.43	0.01	MWD LEAM DRILLING SYSTEMS
8/11/2015	9,184.00	1.10	341.40	9,175.45	42.46	42.46	255.15	0.41	MWD LEAM DRILLING SYSTEMS
8/11/2015	9,373.00	1.40	331.40	9,364.40	46.20	46.20	253.46	0.20	MWD LEAM DRILLING SYSTEMS
8/11/2015	9,563.00	1.20	244.40	9,554.37	47.38	47.38	250.56	0.95	MWD LEAM DRILLING SYSTEMS
8/11/2015	9,752.00	1.10	224.70	9,743.33	45.24	45.24	247.50	0.21	MWD LEAM DRILLING SYSTEMS
8/11/2015	9,816.00	1.20	237.70	9,807.32	44.44	44.44	246.50	0.44	MWD LEAM DRILLING SYSTEMS
8/11/2015	9,846.00	1.30	239.30	9,837.31	44.10	44.10	245.94	0.35	MWD LEAM DRILLING SYSTEMS
8/11/2015	9,881.00	2.60	80.00	9,882.30	44.02	44.02	246.51	8.54	MWD LEAM DRILLING SYSTEMS
8/11/2015	9,909.00	4.70	80.70	9,900.26	44.21	44.21	247.64	11.67	MWD LEAM DRILLING SYSTEMS
8/11/2015	9,942.00	8.50	79.90	9,933.04	44.85	44.85	251.37	11.52	MWD LEAM DRILLING SYSTEMS
8/11/2015	9,989.00	11.00	44.50	9,979.39	48.67	48.67	257.94	13.54	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,036.00	15.80	24.10	10,025.13	57.71	57.71	263.70	14.19	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,083.00	20.80	9.20	10,069.76	71.81	71.81	267.66	14.49	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,131.00	26.00	2.00	10,113.80	90.75	90.75	269.39	12.34	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,178.00	31.90	0.90	10,154.91	113.49	113.49	269.94	12.60	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,226.00	37.10	2.00	10,194.46	140.65	140.65	270.65	10.91	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,272.00	43.00	2.20	10,229.66	170.22	170.22	271.73	12.83	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,321.00	48.70	2.70	10,263.77	205.33	205.33	273.24	11.66	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,369.00	55.10	2.30	10,293.37	243.05	243.05	274.88	13.35	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,415.00	60.40	3.00	10,317.91	281.90	281.90	276.69	11.59	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,462.00	64.20	2.90	10,339.78	323.45	323.45	278.83	78.09	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,510.00	70.20	2.70	10,358.35	367.62	367.62	280.99	12.51	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,557.00	74.00	2.20	10,372.79	412.30	412.30	282.90	8.15	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,605.00	79.40	2.50	10,383.83	458.96	458.96	284.81	11.27	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,652.00	85.60	3.00	10,398.96	505.48	505.48	287.05	13.23	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,716.00	92.40	2.70	10,391.08	569.35	569.35	290.23	10.84	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,811.00	91.10	3.60	10,388.18	664.16	664.16	295.45	1.66	MWD LEAM DRILLING SYSTEMS
8/11/2015	10,906.00	90.40	3.40	10,386.93	758.97	758.97	301.25	0.77	MWD LEAM DRILLING SYSTEMS
8/11/2015	11,001.00	90.10	3.40	10,386.52	853.81	853.81	306.88	0.32	MWD LEAM DRILLING SYSTEMS
8/11/2015	11,096.00	90.60	4.80	10,385.94	948.56	948.56	313.67	1.56	MWD LEAM DRILLING SYSTEMS
8/11/2015	11,191.00	90.50	5.20	10,385.03	1,043.19	1,043.19	321.95	0.43	MWD LEAM DRILLING SYSTEMS
8/11/2015	11,285.00	90.50	3.80	10,384.21	1,136.90	1,136.90	320.33	1.49	MWD LEAM DRILLING SYSTEMS
8/11/2015	11,380.00	90.20	2.20	10,383.63	1,231.76	1,231.76	334.30	1.71	MWD LEAM DRILLING SYSTEMS
8/11/2015	11,475.00	90.50	0.80	10,383.04	1,326.72	1,326.72	336.79	1.51	MWD LEAM DRILLING SYSTEMS
8/11/2015	11,570.00	90.70	0.40	10,382.05	1,421.71	1,421.71	337.78	0.47	MWD LEAM DRILLING SYSTEMS
8/11/2015	11,664.00	91.20	0.20	10,380.49	1,515.70	1,515.70	338.27	0.57	MWD LEAM DRILLING SYSTEMS
8/11/2015	11,759.00	91.10	359.50	10,378.58	1,610.68	1,610.68	338.02	0.74	MWD LEAM DRILLING SYSTEMS
8/11/2015	11,854.00	91.00	0.60	10,376.84	1,705.66	1,705.66	338.11	1.16	MWD LEAM DRILLING SYSTEMS
8/11/2015	11,949.00	91.50	2.00	10,374.77	1,800.61	1,800.61	340.26	1.56	MWD LEAM DRILLING SYSTEMS
8/11/2015	12,044.00	91.90	1.80	10,371.95	1,895.52	1,895.52	343.41	0.47	MWD LEAM DRILLING SYSTEMS
8/11/2015	12,139.00	91.30	1.80	10,369.30	1,990.43	1,990.43	346.39	0.63	MWD LEAM DRILLING SYSTEMS
8/11/2015	12,234.00	90.40	1.80	10,367.89	2,085.37	2,085.37	349.38	0.95	MWD LEAM DRILLING SYSTEMS
8/11/2015	12,328.00	90.50	1.10	10,367.15	2,179.34	2,179.34	351.76	0.75	MWD LEAM DRILLING SYSTEMS
8/11/2015	12,424.00	91.10	1.30	10,365.81	2,275.31	2,275.31	353.77	0.86	MWD LEAM DRILLING SYSTEMS
8/11/2015	12,519.00	89.30	2.00	10,365.48	2,370.27	2,370.27	356.50	2.03	MWD LEAM DRILLING SYSTEMS
8/11/2015	12,614.00	89.90	2.00	10,366.14	2,465.20	2,465.20	359.82	0.63	MWD LEAM DRILLING SYSTEMS
8/11/2015	12,708.00	90.70	1.80	10,365.65	2,559.15	2,559.15	362.93	0.88	MWD LEAM DRILLING SYSTEMS
8/11/2015	12,803.00	91.40	2.00	10,363.91	2,654.08	2,654.08	366.08	0.77	MWD LEAM DRILLING SYSTEMS
8/11/2015	12,896.00	90.50	1.30	10,362.37	2,747.03	2,747.03	368.76	1.23	MWD LEAM DRILLING SYSTEMS
8/11/2015	12,991.00	89.60	0.90	10,362.29	2,842.01	2,842.01	370.58	1.04	MWD LEAM DRILLING SYSTEMS
8/11/2015	13,086.00	90.30	2.20	10,362.37	2,936.97	2,936.97	373.15	1.55	MWD LEAM DRILLING SYSTEMS
8/11/2015	13,180.00	91.20	3.00	10,361.14	3,030.87	3,030.87	377.42	1.28	MWD LEAM DRILLING SYSTEMS
8/11/2015	13,275.00	91.90	3.20	10,358.57	3,125.69	3,125.69	382.55	0.77	MWD LEAM DRILLING SYSTEMS
8/11/2015	13,370.00	92.50	3.40	10,354.82	3,220.46	3,220.46	388.02	0.67	MWD LEAM DRILLING SYSTEMS
8/11/2015	13,464.00	91.10	3.40	10,351.97	3,314.25	3,314.25	393.59	1.49	MWD LEAM DRILLING SYSTEMS
8/11/2015	13,559.00	90.50	3.80	10,350.64	3,409.05	3,409.05	399.55	0.76	MWD LEAM DRILLING SYSTEMS
8/11/2015	13,654.00	91.20	3.90	10,349.23	3,503.83	3,503.83	405.93	0.74	MWD LEAM DRILLING SYSTEMS
8/11/2015	13,749.00	91.00	4.30	10,347.41	3,598.57	3,598.57	412.72	0.47	MWD LEAM DRILLING SYSTEMS
8/11/2015	13,844.00	89.10	3.80	10,347.33	3,693.32	3,693.32	419.43	2.07	MWD LEAM DRILLING SYSTEMS
8/11/2015	13,938.00	88.70	3.80	10,349.13	3,787.10	3,787.10	425.66	0.43	MWD LEAM DRILLING SYSTEMS
8/11/2015	14,032.00	89.30	3.20	10,350.77	3,880.91	3,880.91	431.40	0.90	MWD LEAM DRILLING SYSTEMS
8/11/2015	14,127.00	89.30	3.00	10,351.93	3,975.76	3,975.76	438.53	0.21	MWD LEAM DRILLING SYSTEMS
8/11/2015	14,221.00	89.50	2.70	10,352.92	4,069.64	4,069.64	441.21	0.38	MWD LEAM DRILLING SYSTEMS
8/11/2015	14,316.00	90.60	2.70	10,352.83	4,164.54	4,164.54	445.68	1.16	MWD LEAM DRILLING SYSTEMS
8/11/2015	14,411.00	90.40	3.00	10,352.01	4,259.41	4,259.41	450.41	0.38	MWD LEAM DRILLING SYSTEMS

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Well Name: GAUCHO 21 FEDERAL 4H

Sub-Division:	Region:	Field Name:	County:	State/Province:						
DELAWARE BASIN EAST	BASIN EAST	OJO CHISO	LEA	NM						
Surface Legal Location:	APRA No.:	Latitude (°):	Longitude (°):	Orig KB Elevation (ft):						
SEC21 T22S R34E	3002542137	32° 22' 13.709" N	103° 28' 43.469" W	3,457.20						
				Ground Elev MSL (ft):						
				3,432.20						
				KB - GL (ft):						
				25.00						
Survey Data:										
Date	MD (ft)	Inc (°)	ASZ (°)	TVD (ft)	VS (ft)	N/S (ft)	E/W (ft)	DLS (ft/100ft)	Survey Tool	Survey Company
8/11/2015	14,506.00	91.20	2.70	10,350.68	4,354.29	4,354.29	455.13	0.90	MWD	LEAM DRILLING SYSTEMS
8/11/2015	14,600.00	92.30	2.70	10,347.81	4,448.14	4,448.14	459.55	1.17	MWD	LEAM DRILLING SYSTEMS
8/11/2015	14,695.00	92.60	2.90	10,343.75	4,542.94	4,542.94	464.19	1.38	MWD	LEAM DRILLING SYSTEMS
8/11/2015	14,791.00	93.40	2.50	10,338.72	4,638.70	4,638.70	468.71	0.93	MWD	LEAM DRILLING SYSTEMS
8/11/2015	14,838.00	93.60	2.70	10,335.85	4,685.56	4,685.56	470.84	0.60	MWD	LEAM DRILLING SYSTEMS
8/11/2015	14,890.00	93.60	2.70	10,332.59	4,737.40	4,737.40	473.28	0.00	BIT	LEAM DRILLING SYSTEMS