



Company: Mewbourne Oil Company
Lease/Well: Aries 19 IL Federal Com / No. 001H
Location: SEC20 T18S R30E
Rig Name: Patterson-UTI 46
State/County: New Mexico / Eddy
Latitude: 32.73, Longitude: -104.00
GRID North is 0.18 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB = 20.5'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 12/4/2012 / 08:44

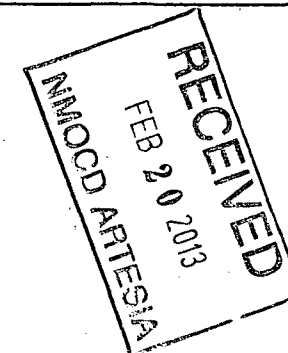
Vaughn Energy Services

Gardendale, Texas

(432) 563-5444

Surveyor: Colby Ware

Aries 19 IL Federal Com No. 001H / API 30-015-40497



Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.37	196.47	100.00	-0.31	-0.09	-0.31	0.32	196.47	0.37
200.00	0.52	198.91	200.00	-1.05	-0.33	-1.05	1.10	197.48	0.16
300.00	0.45	211.71	299.99	-1.82	-0.69	-1.82	1.94	200.67	0.13
400.00	0.38	224.52	399.99	-2.39	-1.12	-2.39	2.64	205.20	0.12
500.00	0.28	205.82	499.99	-2.84	-1.46	-2.84	3.19	207.20	0.15
600.00	0.17	187.12	599.99	-3.20	-1.58	-3.20	3.57	206.27	0.12
700.00	0.19	157.75	699.99	-3.51	-1.54	-3.51	3.83	203.65	0.09
800.00	0.17	148.39	799.99	-3.79	-1.40	-3.79	4.04	200.19	0.04
900.00	0.31	186.53	899.99	-4.19	-1.35	-4.19	4.40	197.83	0.20
1000.00	0.45	264.67	999.98	-4.49	-1.77	-4.49	4.83	201.46	0.49
1100.00	0.76	336.83	1099.98	-3.92	-2.41	-3.92	4.61	211.62	0.75
1200.00	1.07	38.99	1199.97	-2.59	-2.09	-2.59	3.33	218.87	0.98
1300.00	1.07	49.48	1299.95	-1.26	-0.79	-1.26	1.49	212.20	0.19
1400.00	1.07	49.97	1399.93	-0.06	0.62	-0.06	0.63	95.41	0.01
1500.00	1.05	46.05	1499.92	1.18	2.00	1.18	2.32	59.50	0.07
1600.00	1.08	42.13	1599.90	2.52	3.29	2.52	4.15	52.63	0.08
1700.00	1.19	43.96	1699.88	3.97	4.65	3.97	6.11	49.55	0.12
1800.00	1.27	45.79	1799.86	5.49	6.17	5.49	8.25	48.34	0.08

30-015-40497

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Doğleg Severity Deg/100
1900.00	1.14	46.32	1899.84	6.94	7.68	6.94	10.35	47.87	0.12
2000.00	1.06	46.84	1999.82	8.26	9.07	8.26	12.27	47.67	0.08
2100.00	0.84	40.71	2099.80	9.45	10.22	9.45	13.92	47.25	0.24
2200.00	0.62	34.58	2199.79	10.45	11.01	10.45	15.18	46.49	0.23
2300.00	0.82	33.91	2299.79	11.49	11.72	11.49	16.41	45.55	0.20
2400.00	0.98	33.24	2399.77	12.81	12.59	12.81	17.96	44.50	0.16
2500.00	1.05	29.49	2499.76	14.32	13.51	14.32	19.69	43.32	0.09
2600.00	1.15	25.75	2599.74	16.03	14.40	16.03	21.54	41.93	0.13
2700.00	0.97	27.09	2699.72	17.69	15.22	17.69	23.34	40.71	0.19
2800.00	0.79	28.43	2799.71	19.05	15.93	19.05	24.83	39.91	0.18
2900.00	1.03	32.90	2899.70	20.41	16.75	20.41	26.40	39.38	0.25
3000.00	1.28	37.37	2999.68	22.05	17.92	22.05	28.41	39.09	0.26
3100.00	1.11	36.29	3099.66	23.72	19.16	23.72	30.49	38.94	0.17
3200.00	0.94	35.22	3199.64	25.17	20.21	25.17	32.28	38.77	0.17
3300.00	0.88	30.70	3299.63	26.50	21.08	26.50	33.86	38.50	0.09
3400.00	0.84	26.18	3399.62	27.82	21.80	27.82	35.34	38.08	0.08
3500.00	0.73	15.10	3499.61	29.09	22.28	29.09	36.65	37.45	0.19
3600.00	0.62	4.02	3599.60	30.24	22.49	30.24	37.69	36.63	0.17
3700.00	0.69	359.55	3699.59	31.38	22.52	31.38	38.62	35.67	0.09
3800.00	0.72	355.09	3799.59	32.60	22.46	32.60	39.59	34.57	0.06
3900.00	0.93	354.62	3899.58	34.03	22.33	34.03	40.71	33.27	0.21
4000.00	1.17	354.16	3999.56	35.86	22.15	35.86	42.15	31.71	0.25
4100.00	1.54	334.52	4099.53	38.09	21.47	38.09	43.72	29.41	0.59
4200.00	1.90	314.89	4199.49	40.47	19.72	40.47	45.02	25.98	0.69
4300.00	1.74	323.75	4299.44	42.86	17.65	42.86	46.35	22.38	0.33
4400.00	1.57	332.62	4399.40	45.31	16.12	45.31	48.09	19.58	0.30
4500.00	1.34	332.06	4499.36	47.56	14.94	47.56	49.85	17.44	0.23
4600.00	1.11	331.49	4599.34	49.44	13.93	49.44	51.37	15.73	0.23
4700.00	1.71	338.15	4699.31	51.68	12.91	51.68	53.27	14.02	0.62
4800.00	2.31	344.80	4799.25	55.01	11.82	55.01	56.27	12.13	0.64
4900.00	2.28	348.11	4899.17	58.90	10.89	58.90	59.90	10.47	0.14
5000.00	2.24	351.41	4999.09	62.78	10.18	62.78	63.61	9.21	0.13
5100.00	2.46	346.70	5099.00	66.81	9.40	66.81	67.47	8.01	0.29
5200.00	2.68	341.98	5198.90	71.13	8.18	71.13	71.60	6.56	0.31
5300.00	2.70	342.96	5298.79	75.61	6.76	75.61	75.91	5.11	0.05
5400.00	2.74	343.95	5398.68	80.17	5.41	80.17	80.35	3.86	0.06
5500.00	2.86	343.46	5498.56	84.85	4.04	84.85	84.95	2.73	0.11
5600.00	3.01	342.96	5598.43	89.75	2.56	89.75	89.79	1.64	0.15
5700.00	3.06	344.86	5698.29	94.84	1.10	94.84	94.84	0.66	0.11

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	3.12	346.76	5798.14	100.06	-0.22	100.06	100.06	359.87	0.12
5900.00	3.00	341.32	5898.00	105.18	-1.68	105.18	105.20	359.08	0.31
6000.00	2.88	335.87	5997.87	109.96	-3.55	109.96	110.01	358.15	0.30
6100.00	2.88	331.36	6097.74	114.45	-5.78	114.45	114.60	357.11	0.23
6200.00	2.87	324.85	6197.62	118.70	-8.43	118.70	119.00	355.94	0.33
6300.00	2.79	317.95	6297.50	122.56	-11.50	122.56	123.10	354.64	0.35
6400.00	2.71	311.05	6397.38	125.92	-14.92	125.92	126.80	353.24	0.34
6500.00	2.41	311.06	6497.28	128.86	-18.28	128.86	130.15	351.92	0.31
6600.00	2.10	311.08	6597.21	131.44	-21.25	131.44	133.14	350.82	0.31
6700.00	2.05	310.90	6697.14	133.81	-23.97	133.81	135.94	349.84	0.05
6800.00	1.99	310.71	6797.08	136.11	-26.64	136.11	138.70	348.93	0.05
6900.00	2.08	299.80	6897.02	138.15	-29.53	138.15	141.27	347.93	0.40
7000.00	2.16	288.89	6996.95	139.66	-32.88	139.66	143.48	346.75	0.41
7100.00	1.67	288.58	7096.89	140.73	-36.05	140.73	145.27	345.63	0.49
7200.00	1.18	288.26	7196.86	141.52	-38.41	141.52	146.64	344.82	0.49
7300.00	1.05	292.45	7296.84	142.19	-40.24	142.19	147.78	344.20	0.15
7400.00	0.92	286.64	7396.83	142.78	-41.86	142.78	148.79	343.66	0.16
7487.00	1.53	270.47	7483.81	142.99	-43.69	142.99	149.51	343.01	0.79

Company Rep	Lynn Simmons
Field	
BOT Service Rep	Armando Gonzalez
District Location	Odessa, Texas, USA



	Size	Weight	Grade	ID	Drift	Thread	Capacity	Length	Burst	Collapse	
Casing	7.000	26.00	P-110	6.276	6.151		0.03826	8,247.01	9,960	6,230	
Top Liner	4.500	13.50	338000	3.920	3.795	LT&C	0.01492	4,686.75	12,410	10,680	
Bott Liner											
TVD	8,089.00		KOP		7,687.00		Open Hole	6.125	Casing Vol. (bbl)	315.5	
Carry Fluid Weight (ppg)			8.7		Propant Content (ppa)				Max Drill Out Size		0

	Comm. Number	Description	Depth	Length	OD	ID	Ball Seat ID	Shear Press	Max Rate (BPM)	Displ (BBL)
Liner Top	1	JR Setting Sleeve_RH Profile	8247.01							

Zone	Length								
20	399.9	JR Setti Slv_S3 Hyd Set Packer	8247.01	8.64	5.813	3.875			
		4-1/2-13.5 LTC Nipple	8255.65	8.09	4.500	3.920			
		8 Joints of 4-1/2-13.5 LTC Casing	8263.74	303.53	4.500	3.920			
		3.625 EX Frac Sleeve	8567.27	3.90	5.750		3.625	2286	322 320
		2 Joint of 4-1/2-13.5 LTC Casing	8571.17	75.84	4.500	3.920			
19	203.9	Baker Open Hole Packer	8647.01	3.89	5.820	3.875		2154	
		3 Joints of 4-1/2-13.5 LTC Casing	8650.90	115.12	4.500	3.920			
		3.500 EX Frac Sleeve	8766.02	3.90	5.750		3.500	2286	300 323
		2 Joint of 4-1/2-13.5 LTC Casing	8769.92	77.10	4.500	3.920			
		Baker Open Hole Packer	8847.02	3.89	5.820	3.875		2154	
18	240.8	3 Joints of 4-1/2-13.5 LTC Casing	8850.91	114.34	4.500	3.920			
		3.375 EX Frac Sleeve	8965.25	3.90	5.750		3.375	2286	279 326
		3 Joint of 4-1/2-13.5 LTC Casing	8969.15	114.79	4.500	3.920			
		Baker Open Hole Packer	9083.94	3.89	5.820	3.875		2154	
		3 Joints of 4-1/2-13.5 LTC Casing	9087.83	114.92	4.500	3.920			
17	202.9	3.250 EX Frac Sleeve	9202.75	3.90	5.750		3.250	2286	259 330
		2 Joint of 4-1/2-13.5 LTC Casing	9206.65	76.27	4.500	3.920			
		Baker Open Hole Packer	9282.92	3.89	5.820	3.875		2154	
		3 Joints of 4-1/2-13.5 LTC Casing	9286.81	114.88	4.500	3.920			
		3.125 EX Frac Sleeve	9401.69	3.90	5.750		3.125	2286	239 333
16	241.4	3 Joints of 4-1/2-13.5 LTC Casing	9405.59	114.82	4.500	3.920			
		Baker Open Hole Packer	9520.41	3.89	5.820	3.875		2154	

Operating Company Mewbourne
Well Name & Number Aries 19 IL Fed Com #1H
Sales Ticket Number _____
Date 12/9/2012

Company Rep Lynn Simmons
Field _____
BOT Service Rep Armando Gonzalez
District Location Odessa, Texas, USA



	Size	Weight	Grade	ID	Drift	Thread	Capacity	Length	Burst	Collapse	
Casing	7.000	26.00	P-110	6.276	6.151		0.03826	8,247.01	9,960	6,230	
Top Liner	4.500	13.50	338000	3.920	3.795	LT&C	0.01492	4,686.75	12,410	10,680	
Bott Liner											
TVD		8,089.00		KOP		7,687.00		Open Hole	6.125	Casing Vol. (bbl)	315.5
Carry Fluid Weight (ppg)			8.7		Propant Content (ppa)				Max Drill Out Size		0

	Comm. Number	Description	Depth	Length	OD	ID	Ball Seat ID	Shear Press	Max Rate (BPM)	Displ (BBL)
15 240.9		3 Joints of 4-1/2-13.5 LTC Casing	9524.30	114.82	4.500	3.920				
		3.000 EX Frac Sleeve	9639.12	3.90	5.750		3.000	2375	225	336
		3 Joint of 4-1/2-13.5 LTC Casing	9643.02	114.37	4.500	3.920				
14 203.2		Baker Open Hole Packer	9757.39	3.89	5.820	3.875		2154		
		3 Joints of 4-1/2-13.5 LTC Casing	9761.28	114.90	4.500	3.920				
		2.875 EX Frac Sleeve	9876.18	3.90	5.750		2.875	2286	203	340
13 241.6		2 Joints of 4-1/2-13.5 LTC Casing	9880.08	76.64	4.500	3.920				
		Baker Open Hole Packer	9956.72	3.89	5.820	3.875		2154		
		3 Joints of 4-1/2-13.5 LTC Casing	9960.61	114.70	4.500	3.920				
12 239.2		2.750 EX Frac Sleeve	10075.31	3.90	5.750		2.750	2286	185	343
		3 Joint of 4-1/2-13.5 LTC Casing	10079.21	115.19	4.500	3.920				
		Baker Open Hole Packer	10194.40	3.89	5.820	3.875		2154		
11 236.8		3 Joints of 4-1/2-13.5 LTC Casing	10198.29	112.97	4.500	3.920				
		2.625 EX Frac Sleeve	10311.26	3.90	5.750		2.625	2286	169	346
		3 Joints of 4-1/2-13.5 LTC Casing	10315.16	114.59	4.500	3.920				
10 240.6		Baker Open Hole Packer	10429.75	3.89	5.820	3.875		2154		
		3 Joints of 4-1/2-13.5 LTC Casing	10433.64	109.71	4.500	3.920				
		2.500 EX Frac sleeve	10543.35	3.90	5.750		2.500	2286	153	350
9		3 Joint of 4-1/2-13.5 LTC Casing	10547.25	115.38	4.500	3.920				
		Baker Open Hole Packer	10662.63	3.89	5.820	3.875		2154		
		3 Joints of 4-1/2-13.5 LTC Casing	10666.52	114.05	4.500	3.920				
		2.375 EX Frac Sleeve	10780.57	3.90	5.750		2.375	2286	138	353
		3 Joints of 4-1/2-13.5 LTC Casing	10784.47	114.82	4.500	3.920				
		Baker Open Hole Packer	10899.29	3.89	5.820	3.875		2154		
		3 Joint of 4-1/2-13.5 LTC Casing	10903.18	115.48	4.500	3.920				
		2.250 EX Frac Sleeve	11018.66	3.90	5.750		2.250	2286	124	357

Operating Company Mewbourne
 Well Name & Number Aries 19 IL Fed Com #1H
 Sales Ticket Number _____
 Date 12/9/2012

Company Rep Lynn Simmons
 Field _____
 BOT Service Rep Armando Gonzalez
 District Location Odessa, Texas, USA



	Size	Weight	Grade	ID	Drift	Thread	Capacity	Length	Burst	Collapse	
Casing	7.000	26.00	P-110	6.276	6.151		0.03826	8,247.01	9,960	6,230	
Top Liner	4.500	13.50	338000	3.920	3.795	LT&C	0.01492	4,686.75	12,410	10,680	
Bott Liner											
TVD		8,089.00		KOP		7,687.00		Open Hole	6.125	Casing Vol. (bbl)	315.5
Carry Fluid Weight (ppg)			8.7		Propant Content (ppa)				Max Drill Out Size		0

	Comm. Number	Description	Depth	Length	OD	ID	Ball Seat ID	Shear Press	Max Rate (BPM)	Displ (BBL)
242.8		3 Joints of 4-1/2-13.5 LTC Casing	11022.56	115.59	4.500	3.920				
		Baker Open Hole Packer	11138.15	3.89	5.820	3.875		2154		
		3 Joint of 4-1/2-13.5 LTC Casing	11142.04	115.21	4.500	3.920				
8		2.125 EX Frac Sleeve	11257.25	3.90	5.750		2.125	2286	111	360
203.3		2 Joints of 4-1/2-13.5 LTC Casing	11261.15	76.45	4.500	3.920				
		Baker Open Hole Packer	11337.60	3.89	5.820	3.875		2154		
		3 Joint of 4-1/2-13.5 LTC Casing	11341.49	115.25	4.500	3.920				
7		2.000 EX Frac Sleeve	11456.74	3.90	5.750		2.000	2286	98	363
278.3		2 Joints of 4-1/2-13.5 LTC Casing	11460.64	151.32	4.500	3.920				
		Baker Open Hole Packer	11611.96	3.89	5.820	3.875		2154		
		3 Joint of 4-1/2-13.5 LTC Casing	11615.85	111.65	4.500	3.920				
6		1.875 EX Frac Sleeve	11727.50	3.90	5.750		1.875	2286	86	367
238.8		3 Joints of 4-1/2-13.5 LTC Casing	11731.40	115.46	4.500	3.920				
		Baker Open Hole Packer	11846.86	3.89	5.820	3.875		2154		
		3 Joints of 4-1/2-13.5 LTC Casing	11850.75	113.53	4.500	3.920				
5		1.750 EX Frac Sleeve	11964.28	3.90	5.750		1.750	2286	75	371
240.05		3 Joint of 4-1/2-13.5 LTC Casing	11968.18	114.84	4.500	3.920				
		Baker Open Hole Packer	12083.02	3.89	5.820	3.875		2154		
		3 Joints of 4-1/2-13.5 LTC Casing	12086.91	115.07	4.500	3.920				
4		1.625 EX Frac Sleeve	12201.98	3.90	5.750		1.625	2286	65	375
240.06		3 Joints of 4-1/2-13.5 LTC Casing	12205.88	113.31	4.500	3.920				
		Baker Open Hole Packer	12319.19	3.89	5.820	3.875		2154		
		3 Joints of 4-1/2-13.5 LTC Casing	12323.08	114.80	4.500	3.920				
3		1.500 DB EX Frac Sleeve	12437.88	3.90	5.750		1.500	2286	55	378
239.94		3 Joint of 4-1/2-13.5 LTC Casing	12441.78	113.46	4.500	3.920				
		Baker Open Hole Packer	12555.24	3.89	5.820	3.875		2154		

Company Rep	Lynn Simmons
Field	
BOT Service Rep	Armando Gonzalez
District Location	Odessa, Texas, USA



	Size	Weight	Grade	ID	Drift	Thread	Capacity	Length	Burst	Collapse
Casing	7.000	26.00	P-110	6.276	6.151		0.03826	8,247.01	9,960	6,230
Top Liner	4.500	13.50	338000	3.920	3.795	LT&C	0.01492	4,686.75	12,410	10,680
Bott Liner										
TVD	8,089.00		KOP		7,687.00	Open Hole		6.125	Casing Vol. (bbl)	315.5
Carry Fluid Weight (ppg)			8.7		Propant Content (ppa)				Max Drill Out Size	0

[illegible]