

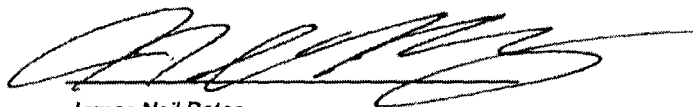
**VES** SURVEY

**NM OIL CONSERVATION**  
ARTESIA DISTRICT

JUL 31 2017

RECEIVED

I James Neil Bates certify that I am employed by VES Survey International. That I did on the day(s)  
of 04/19/17 through 04/19/17 conduct or supervise the taking of a Rate Gyro survey from a  
depth of 0.00 feet to a depth of 435.00 feet; that the data is true, correct, complete and  
within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified  
to make this report; that this survey was conducted at the request of Matador Production Company for the  
Heyco State Well # 121H API # 30-015-44083  
in Eddy County / Parish New Mexico; and that I have reviewed this report and  
find that it conforms to the principles and procedures as set forth by VES Survey International.

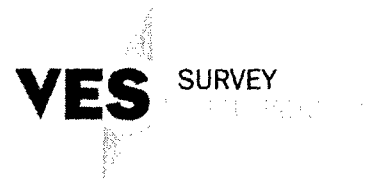


James Neil Bates  
Service Technician  
VES Survey International



Company: MATADOR PRODUCTION COMPANY  
Lease/Well: HEYCO STATE No./121H

Rig Name: PATTERSON-UTI 809  
State/County: NEW MEXICO/EDDY  
VS-Azi: 0.00 Degrees  
Latitude: 32.53608, Longitude: -103.99911  
Grid North = True North -0.18 degs (NAD 27)  
Grid Correction Applied = -0.18 degs



Depth Reference : RKB = 28.5

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: e-line gyro-de\_01.ut  
Minimum Curvature Method  
Report Date/Time: 4/25/2017 / 09:09

VES SURVEY INTERNATIONAL  
MIDLAND, TEXAS  
432-563-5444

Surveyor: JAMES NEIL BATES  
Heyco State No. 121H / API 30-015-44083

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	***
50.00	0.40	194.53	50.00	-0.17	-0.04	-0.17	0.18	194.53	0.81
100.00	0.68	232.10	100.00	-0.52	-0.32	-0.52	0.61	211.66	0.87
150.00	0.97	248.58	149.99	-0.86	-0.96	-0.86	1.28	227.91	0.75
200.00	1.38	254.63	199.98	-1.17	-1.93	-1.17	2.26	238.65	0.85
250.00	1.90	262.70	249.96	-1.44	-3.33	-1.44	3.83	246.62	1.13
300.00	1.92	267.38	299.93	-1.58	-4.99	-1.58	5.24	262.40	0.32
350.00	1.93	265.18	349.91	-1.69	-6.67	-1.69	6.88	255.76	0.15
400.00	2.10	264.53	399.87	-1.85	-8.42	-1.85	8.62	257.60	0.36
435.00	2.16	262.65	434.85	-1.99	-9.71	-1.99	9.91	258.40	0.24

**GTI**  
SURVEY TECHNOLOGIES

VES SURVEY INTERNATIONAL  
MIDLAND, TEXAS  
432-563-5444  
Surveyor: JAMES NEIL BATES  
Heyco State No. 121H / API 30-015-44083

**VES** SURVEY  
INTERNATIONAL

0 Depth=0.0, Inc=0.0, AzG=0.0

Depth=435.0, Inc=2.2, AzG=262.9

N+/S-

-20  
20

-W/+E

VES SURVEY DATE: 4/18/2017