



3335 Pollok Drive
Conroe, Texas 77303

936.442.2500 (office)
936.442.2599 (fax)
www.msenergyservices.com

Surveyor Certification Form

NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 25 2018

RECEIVED

Survey Company: MS ENERGY SERVICES
Surveyors Name: COREY MILBY
Survey Job Type: RATE GYRO
Customer: MEWBOURNE
Well: DERRINGER 18B3LI FED 2H
API: 30-015-44431
Surveyed from: SURFACE TO A DEPTH OF 2868'MD
Survey Run Date: 09-24-17 TO 09-25-17
Surface Location: EDDY COUNTY, NM

I certify that the data is true, correct, and complete and within the limitations of the tool set forth by MS Energy Services; that I am authorized and qualified to make this report; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by MS Energy Services.

**Corey
Milby**

Digitally signed by Corey Milby
DN: cn=Corey Milby, o=MS
Energy Services, ou=MS Survey,
email=cmiby@msenergyservice
s.com, c=US
Date: 2017.09.15 16:08:10
-05'00'



Job Number: SVMO-170660
 Company: Mewbourne
 Lease/Well: Derringer 18B3LI Fed 2H
 Location: Eddy County, NM
 Rig Name: Patterson 243
 RKB: 26.6'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: Declination See Details Below
 Grid: East To Grid North
 File name: C:\WINSER~1\2017\MEWBOU~1\MO\DERRIN~1\18B3LI\FED2H.SVY
 Date/Time: 26-Sep-17 / 08:30
 Curve Name: Surface - 2868' M.D. (Rate Gyro)
 Lat: 32.571556 Long: -104.121167

MS Energy

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method
 Vertical Section Plane 89.89
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

Declination To True North: 7.263°
 Grid Convergence Factor: 0° 6' 51.19497"
 Total Correction Mag to Grid: 6.99°

NM OIL CONSERVATION
 ARTESIA DISTRICT

JAN 25 2018

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.55	283.25	100.00	.11	-.47	-.47	.48	283.25	.55
200.00	.36	281.74	200.00	.28	-1.24	-1.24	1.27	282.88	.19
300.00	.43	298.59	299.99	.53	-1.88	-1.88	1.95	285.68	.13
400.00	.61	263.34	399.99	.65	-2.74	-2.74	2.81	283.26	.36
500.00	1.36	213.99	499.97	-.40	-3.93	-3.93	3.95	264.18	1.07
600.00	1.36	199.50	599.95	-2.50	-4.99	-4.99	5.58	243.36	.34
700.00	1.23	181.31	699.92	-4.69	-5.41	-5.42	7.16	229.05	.43
800.00	1.23	176.65	799.90	-6.84	-5.37	-5.38	8.70	218.15	.10
900.00	1.16	169.31	899.88	-8.91	-5.12	-5.14	10.27	209.90	.17
1000.00	.96	165.89	999.86	-10.71	-4.73	-4.75	11.71	203.82	.21
1100.00	.59	168.16	1099.85	-12.03	-4.42	-4.44	12.81	200.17	.37
1200.00	.57	181.87	1199.85	-13.03	-4.33	-4.35	13.73	198.38	.14

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Distance FT	CLOSURE Direction Deg	Dogleg Severity Deg/100
1300.00	.59	190.42	1299.84	-14.03	-4.44	-4.47	14.72	197.55	.09
1400.00	.57	205.02	1399.84	-14.99	-4.74	-4.77	15.72	197.56	.15
1500.00	.40	221.14	1499.83	-15.70	-5.18	-5.21	16.54	198.26	.22
1600.00	.51	221.05	1599.83	-16.30	-5.70	-5.74	17.27	199.29	.11
1700.00	.64	260.59	1699.82	-16.73	-6.55	-6.58	17.97	201.37	.41
1800.00	.57	230.73	1799.82	-17.14	-7.48	-7.52	18.70	203.59	.32
1900.00	.57	230.77	1899.81	-17.77	-8.25	-8.29	19.59	204.92	.00
2000.00	.70	262.79	1999.81	-18.16	-9.25	-9.28	20.37	206.99	.37
2100.00	.66	248.72	2099.80	-18.44	-10.39	-10.42	21.17	209.39	.17
2200.00	.70	273.88	2199.79	-18.61	-11.53	-11.57	21.89	211.79	.30
2300.00	.46	258.05	2299.79	-18.65	-12.54	-12.57	22.47	213.91	.29
2400.00	.30	278.01	2399.79	-18.70	-13.19	-13.22	22.88	215.20	.21
2500.00	.26	266.53	2499.79	-18.68	-13.67	-13.71	23.15	216.21	.07
2600.00	.26	282.52	2599.78	-18.64	-14.12	-14.16	23.39	217.15	.07
2700.00	.34	271.33	2699.78	-18.58	-14.64	-14.68	23.66	218.23	.10
2800.00	.26	255.94	2799.78	-18.63	-15.16	-15.19	24.02	219.13	.11
Last Survey Depth Recorded									
2868.00	.50	254.26	2867.78	-18.75	-15.59	-15.63	24.39	219.75	.35



Company: Mewbourne Oil Company Lease / Well: Derringer 18B3LI # Fed 2H County/Parish: Eddy County State: New Mexico Date: 9/25/2017 API#: 30-015-44431 Dir. Company: QBS Latitude: N 32° 34' 17.6" Longitude: W 104° 07' 16.2"	Operator: Corey Milby Job Number: SVMO-170660 Gyro Serial #: 164 Proposed Direction: 89.89 Total Correction: 6.99 East To Grid Rig/RKB: Patterson 243 Tie-in Company: N/A X: . Y: .
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26'6" ft.

FIELD USE ONLY, DEFINITIVE SURVEY WILL COME FROM MS SURVEY OFFICES

TIE-IN Survey					
Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Coordinates	
				(+N/-S)	(+E/-W)

Digital Multi-Shot Survey Report									
Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Vertical Section	Coordinates		Dog-Leg / 100 ft.	Closure Distance	Closure Direction
					(+N/-S)	(+E/-W)			
100.00	0.55	283.25	100.00	-0.47	0.11	-0.47	0.55	0.48	283.25
200.00	0.36	281.74	200.00	-1.24	0.28	-1.24	0.19	1.27	282.88
300.00	0.43	298.59	299.99	-1.88	0.53	-1.88	0.13	1.95	285.68
400.00	0.61	263.34	399.99	-2.74	0.65	-2.74	0.36	2.81	283.26
500.00	1.36	213.99	499.97	-3.93	-0.40	-3.93	1.07	3.95	264.18
600.00	1.36	199.50	599.95	-4.99	-2.50	-4.99	0.34	5.58	243.36
700.00	1.23	181.31	699.92	-5.42	-4.69	-5.41	0.43	7.16	229.05
800.00	1.23	176.65	799.90	-5.38	-6.84	-5.37	0.10	8.70	218.15
900.00	1.16	169.31	899.88	-5.14	-8.91	-5.12	0.17	10.27	209.90
1000.00	0.96	165.89	999.86	-4.75	-10.71	-4.73	0.21	11.71	203.82
1100.00	0.59	168.16	1099.85	-4.44	-12.03	-4.42	0.37	12.81	200.17
1200.00	0.57	181.87	1199.85	-4.35	-13.03	-4.33	0.14	13.73	198.38
1300.00	0.59	190.42	1299.84	-4.47	-14.03	-4.44	0.09	14.72	197.55
1400.00	0.57	205.02	1399.84	-4.77	-14.99	-4.74	0.15	15.72	197.56
1500.00	0.40	221.14	1499.83	-5.21	-15.70	-5.18	0.22	16.54	198.26
1600.00	0.51	221.05	1599.83	-5.74	-16.30	-5.70	0.11	17.27	199.29
1700.00	0.64	260.59	1699.82	-6.58	-16.73	-6.55	0.41	17.97	201.37
1800.00	0.57	230.73	1799.82	-7.52	-17.14	-7.48	0.32	18.70	203.59
1900.00	0.57	230.77	1899.81	-8.29	-17.77	-8.25	0.00	19.59	204.92
2000.00	0.70	262.79	1999.81	-9.28	-18.16	-9.25	0.37	20.37	206.99
2100.00	0.66	248.72	2099.80	-10.42	-18.44	-10.39	0.17	21.17	209.39
2200.00	0.70	273.88	2199.79	-11.57	-18.61	-11.53	0.30	21.89	211.79
2300.00	0.46	258.05	2299.79	-12.57	-18.65	-12.54	0.29	22.47	213.91
2400.00	0.30	278.01	2399.79	-13.22	-18.70	-13.19	0.21	22.88	215.20
2500.00	0.26	266.53	2499.78	-13.71	-18.68	-13.67	0.07	23.15	216.21
2600.00	0.26	282.52	2599.78	-14.16	-18.64	-14.12	0.07	23.39	217.15
2700.00	0.34	271.33	2699.78	-14.68	-18.58	-14.64	0.10	23.66	218.23
2800.00	0.26	255.94	2799.78	-15.19	-18.63	-15.16	0.11	24.02	219.13
2868.00	0.50	254.26	2867.78	-15.63	-18.75	-15.59	0.35	24.39	219.75