



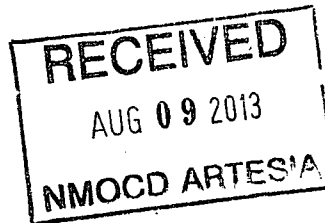
A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

30-015-40782

March 4, 2013

Devon Energy Production Co., LP
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010



Attn: Patti Riechers

Re: **Peridot 13 State No 001H**

Please find enclosed a copy of the survey from 0' to 9,199.49' ran on the above referenced well.

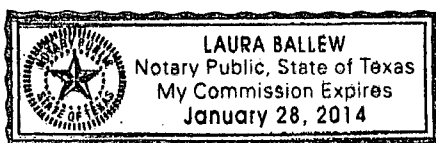
If I can be of any further service, please do not hesitate to call me at 800-606-4976.

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

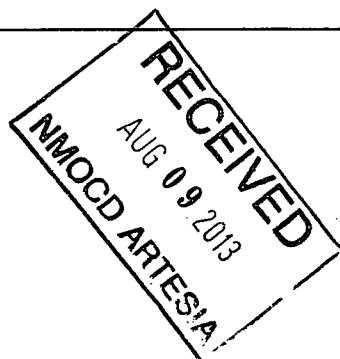
This instrument was acknowledged before me on the 4th day of March, A.D., 2013, by Keith Havelka.



Laura Ballew
Notary Public, State of Texas



Company: Devon Energy Production Co., LP
Lease/Well: Peridot 13 State/No 001H
Location: Sec 012 T-19S R-29E
Rig Name: H & P 223
State/County: New Mexico/Eddy
Latitude: 32.67, Longitude: -104.03
GRID North is 0.16 Degrees East of True North
VS-Azi: 187.85 Degrees



Depth Reference : RKB 25 Feet

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: inhole-01-de_01.ut
Minimum Curvature Method
Report Date/Time: 3/4/2013 / 10:10

Vaughn Energy Services
Shreveport, LA
318-549-3860
Surveyor: Billy James

Peridot 13 State No 001H / API 30-015-40782

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	****
49.68	0.80	33.09	49.68	0.29	0.19	-0.31	0.35	33.09	1.61
144.25	1.11	21.17	144.24	1.70	0.88	-1.81	1.92	27.40	0.39
238.82	1.16	353.47	238.79	3.51	1.11	-3.63	3.68	17.49	0.58
333.39	1.10	343.24	333.34	5.33	0.73	-5.38	5.38	7.84	0.22
427.96	0.94	340.96	427.89	6.93	0.22	-6.90	6.94	1.81	0.18
522.53	1.16	342.58	522.45	8.58	-0.32	-8.46	8.59	357.86	0.24
617.10	1.21	355.48	617.00	10.49	-0.69	-10.30	10.51	356.26	0.29
711.67	1.01	355.08	711.55	12.31	-0.84	-12.08	12.34	356.11	0.21
806.24	0.84	357.54	806.11	13.82	-0.94	-13.57	13.86	356.12	0.18
900.81	0.74	3.77	900.67	15.12	-0.93	-14.85	15.15	356.49	0.14
995.38	0.72	7.35	995.23	16.31	-0.81	-16.05	16.33	357.15	0.05
1089.95	0.81	8.32	1089.79	17.56	-0.64	-17.30	17.57	357.92	0.09
1184.52	0.69	27.21	1184.36	18.72	-0.28	-18.50	18.72	359.13	0.29
1279.09	1.03	30.85	1278.91	19.95	0.41	-19.82	19.96	1.18	0.37
1373.66	1.08	35.18	1373.47	21.41	1.36	-21.39	21.45	3.63	0.10
1468.23	1.05	28.35	1468.02	22.90	2.28	-23.00	23.01	5.70	0.14
1562.80	1.19	28.57	1562.57	24.52	3.17	-24.73	24.73	7.35	0.14
1657.37	1.49	28.92	1657.12	26.46	4.23	-26.79	26.80	9.08	0.33

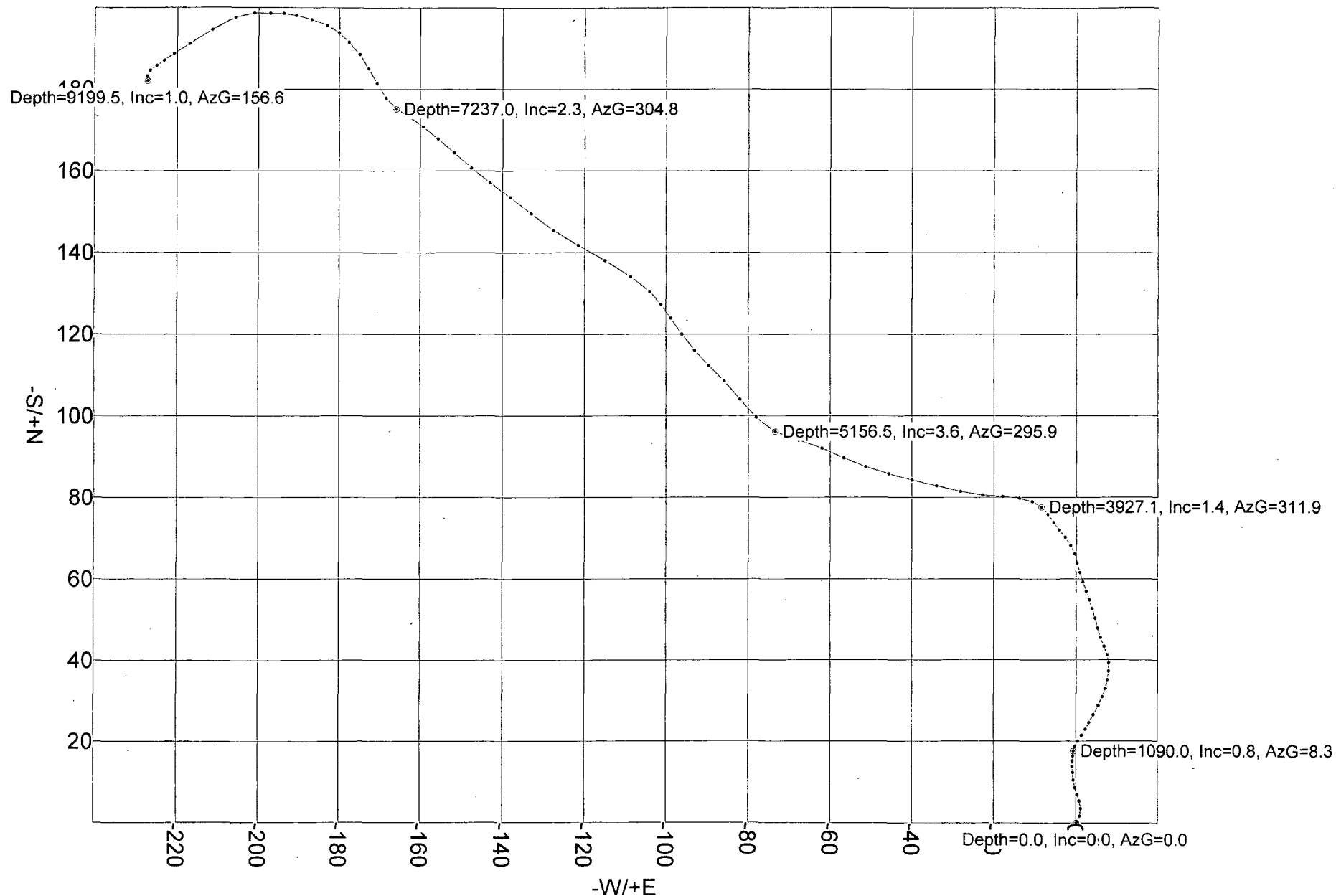
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1751.94	1.63	28.43	1751.65	28.72	5.46	-29.20	29.24	10.77	0.14
1846.51	1.27	19.51	1846.19	30.89	6.45	-31.48	31.56	11.80	0.44
1941.08	1.33	16.40	1940.74	32.94	7.12	-33.60	33.70	12.19	0.10
2035.65	1.32	9.86	2035.28	35.07	7.61	-35.78	35.88	12.25	0.16
2130.22	1.28	7.13	2129.83	37.19	7.93	-37.93	38.03	12.04	0.08
2224.79	1.23	354.78	2224.38	39.26	7.97	-39.98	40.06	11.48	0.29
2319.36	1.26	346.20	2318.92	41.28	7.63	-41.93	41.98	10.47	0.20
2413.93	1.43	333.29	2413.47	43.34	6.85	-43.87	43.88	8.99	0.37
2508.50	1.46	339.89	2508.01	45.52	5.91	-45.90	45.90	7.40	0.18
2603.07	1.51	348.33	2602.55	47.86	5.25	-48.13	48.15	6.25	0.24
2697.64	1.56	343.69	2697.08	50.32	4.63	-50.48	50.53	5.26	0.14
2792.21	1.38	342.69	2791.62	52.64	3.93	-52.68	52.78	4.27	0.19
2886.78	1.38	342.72	2886.16	54.81	3.26	-54.74	54.91	3.40	0.00
2981.35	1.38	340.12	2980.71	56.97	2.53	-56.78	57.03	2.54	0.07
3075.92	1.55	341.13	3075.25	59.25	1.73	-58.93	59.28	1.67	0.18
3170.49	1.39	342.75	3169.78	61.56	0.98	-61.11	61.56	0.91	0.17
3265.06	1.55	344.05	3264.32	63.88	0.28	-63.32	63.88	0.25	0.17
3359.63	1.34	341.13	3358.86	66.15	-0.42	-65.48	66.15	359.63	0.23
3454.20	1.48	328.61	3453.41	68.24	-1.42	-67.41	68.26	358.81	0.36
3548.77	1.41	323.24	3547.95	70.21	-2.75	-69.18	70.27	357.76	0.16
3643.34	1.37	320.78	3642.49	72.02	-4.16	-70.78	72.14	356.70	0.08
3737.91	1.39	325.09	3737.03	73.83	-5.52	-72.38	74.04	355.72	0.11
3832.48	1.51	326.03	3831.57	75.80	-6.88	-74.15	76.11	354.82	0.13
3927.05	1.43	311.88	3926.11	77.62	-8.45	-75.74	78.08	353.79	0.39
4021.62	1.78	291.68	4020.64	78.95	-10.69	-76.75	79.67	352.29	0.70
4116.19	2.13	279.00	4115.16	79.77	-13.79	-77.14	80.95	350.19	0.59
4210.76	2.80	274.06	4209.64	80.21	-17.83	-77.02	82.17	347.46	0.74
4305.33	3.14	274.30	4304.08	80.57	-22.72	-76.71	83.71	344.25	0.36
4399.90	3.53	283.79	4398.49	81.45	-28.14	-76.85	86.18	340.94	0.71
4494.47	3.79	283.12	4492.87	82.86	-34.00	-77.44	89.56	337.69	0.27
4589.04	3.65	283.52	4587.24	84.27	-39.97	-78.02	93.27	334.63	0.15
4683.61	3.51	285.91	4681.63	85.77	-45.67	-78.72	97.17	331.96	0.22
4778.18	3.60	287.82	4776.02	87.47	-51.28	-79.64	101.39	329.62	0.16
4872.75	3.51	295.79	4870.40	89.63	-56.71	-81.05	106.07	327.68	0.53
4967.32	3.57	293.20	4964.79	92.05	-62.02	-82.72	110.99	326.03	0.18
5061.89	3.75	284.99	5059.17	94.01	-67.71	-83.88	115.85	324.24	0.58
5156.46	3.62	295.92	5153.55	96.11	-73.37	-85.19	120.92	322.64	0.75
5251.03	3.57	316.48	5247.94	99.55	-78.08	-87.95	126.52	321.89	1.36
5345.60	3.68	321.21	5342.32	104.06	-82.02	-91.88	132.49	321.76	0.34

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
5440.17	3.48	316.76	5436.70	108.51	-85.88	-95.77	138.39	321.64	0.37
5534.74	3.06	314.06	5531.12	112.36	-89.66	-99.06	143.75	321.41	0.47
5629.31	3.03	320.27	5625.55	116.04	-93.08	-102.24	148.76	321.27	0.35
5723.88	3.06	324.69	5719.99	120.03	-96.14	-105.77	153.78	321.31	0.25
5818.45	2.69	325.51	5814.44	123.92	-98.85	-109.25	158.51	321.42	0.39
5913.02	2.31	324.43	5908.92	127.29	-101.22	-112.28	162.63	321.51	0.41
6007.59	2.89	313.39	6003.40	130.48	-104.06	-115.04	166.89	321.43	0.81
6102.16	4.36	304.17	6097.77	134.13	-108.76	-118.02	172.69	320.96	1.67
6196.73	4.62	300.22	6192.05	138.07	-115.03	-121.07	179.71	320.20	0.43
6291.30	4.49	299.19	6286.33	141.79	-121.55	-123.86	186.76	319.40	0.17
6385.87	4.17	304.09	6380.63	145.53	-127.63	-126.73	193.56	318.75	0.51
6480.44	3.98	309.90	6474.96	149.56	-132.99	-129.99	200.14	318.35	0.48
6575.01	3.80	305.97	6569.31	153.50	-138.05	-133.21	206.45	318.03	0.34
6669.58	3.63	305.78	6663.68	157.09	-143.01	-136.09	212.44	317.69	0.18
6764.15	3.48	311.67	6758.07	160.75	-147.58	-139.09	218.22	317.45	0.42
6858.72	3.31	311.06	6852.47	164.45	-151.79	-142.18	223.79	317.29	0.18
6953.29	2.99	310.57	6946.90	167.85	-155.72	-145.01	228.96	317.15	0.34
7047.86	2.66	309.13	7041.35	170.85	-159.30	-147.49	233.59	317.00	0.36
7142.43	2.31	300.08	7135.84	173.19	-162.66	-149.35	237.60	316.80	0.56
7237.00	2.25	304.78	7230.33	175.21	-165.84	-150.91	241.24	316.57	0.21
7331.57	2.36	327.29	7324.83	177.91	-168.42	-153.24	244.98	316.57	0.96
7426.14	2.71	328.14	7419.30	181.44	-170.65	-156.44	249.08	316.76	0.36
7520.71	2.32	334.58	7513.78	185.07	-172.65	-159.76	253.10	316.99	0.50
7615.28	2.61	321.59	7608.26	188.49	-174.81	-162.85	257.07	317.16	0.66
7709.85	2.35	315.33	7702.75	191.55	-177.51	-165.51	261.16	317.18	0.40
7804.42	1.85	307.47	7797.25	193.86	-180.09	-167.45	264.60	317.11	0.60
7898.99	2.34	296.61	7891.76	195.66	-183.03	-168.83	267.92	316.91	0.67
7993.56	2.65	284.97	7986.24	197.09	-186.87	-169.72	271.60	316.52	0.62
8088.13	2.11	284.45	8080.73	198.09	-190.66	-170.19	274.94	316.09	0.57
8182.70	1.80	270.94	8175.24	198.55	-193.83	-170.21	277.47	315.69	0.58
8277.27	2.24	271.27	8269.75	198.61	-197.17	-169.82	279.86	315.21	0.47
8371.84	2.46	269.80	8364.25	198.64	-201.05	-169.32	282.63	314.66	0.24
8466.41	3.31	248.31	8458.70	197.63	-205.62	-167.69	285.20	313.86	1.44
8560.98	4.58	238.19	8553.04	194.63	-211.36	-163.94	287.32	312.64	1.52
8655.55	3.33	237.52	8647.39	191.17	-216.89	-159.75	289.11	311.39	1.32
8750.12	2.18	236.56	8741.84	188.70	-220.70	-156.79	290.37	310.53	1.22
8844.69	1.42	236.28	8836.37	187.06	-223.17	-154.83	291.20	309.97	0.80
8939.26	1.22	235.27	8930.91	185.84	-224.97	-153.37	291.80	309.56	0.21
9033.83	1.17	230.20	9025.46	184.64	-226.55	-151.97	292.26	309.18	0.12

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
9128.40	1.00	183.46	9120.02	183.20	-227.34	-150.43	291.97	308.86	0.93
9199.49	0.99	156.61	9191.10	182.01	-227.14	-149.28	291.07	308.71	0.65



Vaughn Energy Services
Shreveport, LA
318-549-3860
Surveyor: Billy James
Peridot 13 State No 001H / API 30-015-40782



VES Survey Date: 02/25/2013

HALLIBURTON

3950 Interwood South Pkwy Houston, TX 77032
Phone 281-986-4416 Fax 281-986-4499

March 15, 2013

Devon Energy Production, Co

Attn: Judy Barnett
20 N. Broadway
Oklahoma City, Ok
73102

Final Survey for:

Well Name: Peridot 13 State 1H
County: Eddy County, NM
Rig Name: H&P 233
Sperry Job #: 900216560

Judy Barnett

Enclosed you will find the following survey information on the above referenced well:

- 0 Survey Report(s)
- 0 MWD End of Well Report(s)

2 Certified Letters for New Mexico NMOCD

We appreciate the opportunity to serve you and welcome any comments or suggestions that you may have regarding our service. You may contact your local sales representative,

Ryan Annesley @ 405-231-1868

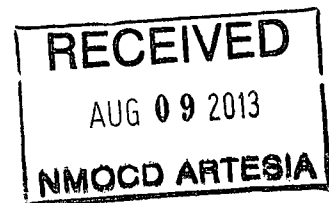
Should you have any questions or require additional information regarding the enclosed information, please do not hesitate to contact me at (281) 986-4400.

Once again, we thank you for your business.

Sincerely,



Rachell Ortiz
Sperry Drilling Services



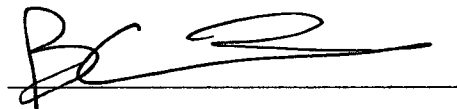
HALLIBURTON

3950 Interwood Pkwy South • Houston, TX 77032

PHONE 281.986.4400 • FAX 281.986.4498

State of New Mexico, County of Eddy

I, Brant Crist, certify that I am employed by Halliburton Energy Services, Inc. (AKA Sperry Drilling) and that on the dates of 25 February 2013 through 10 March 2013 I did conduct or supervise the taking of a DWD directional surveys for the Peridot 13 State 1H well from a depth of 7656' MD to a depth of 15318' 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, Peridot 13 State 1H, API No. 30-015-40782 in Eddy County, New Mexico. I have reviewed this report and find that it conforms to the principles and procedures as set forth by Halliburton Energy Services, Inc. (AKA Sperry Drilling).



Field Engineer

Devon Energy
Peridot 13 State 1H
H&P 223
API# 30-015-40782
Eddy County, NM

February 25, 2013– March 10, 2013
HD-MJ-0900216560

Sperry Drilling
MWD Survey Report

Submitted by Brant Crist
3950 Interwood Pkwy S. Houston, TX 77032
Ph: 281.986.4400

HALLIBURTON

**Drilling and Formation
Evaluation**

RECEIVED

AUG 09 2013

NMOCD ARTESIA

DIRECTIONAL SURVEY DATA

Tie-in

0.00

0.00

0.00

0.00

0.00 N

0.00 E

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (%/100')
49.68	0.80	33.09	49.68	0.29 N	0.19 E	-0.31	1.61
144.25	1.11	21.17	144.24	1.70 N	0.88 E	-1.80	0.39
238.82	1.16	353.47	238.79	3.50 N	1.10 E	-3.62	0.58
333.39	1.10	343.24	333.34	5.32 N	0.73 E	-5.37	0.22
427.96	0.94	340.96	427.89	6.93 N	0.22 E	-6.89	0.17
522.53	1.16	342.58	522.45	8.57 N	0.32 W	-8.45	0.23
617.10	1.21	355.48	617.00	10.48 N	0.69 W	-10.29	0.29
711.67	1.01	355.08	711.55	12.31 N	0.84 W	-12.08	0.21
806.24	0.84	357.54	806.11	13.83 N	0.94 W	-13.57	0.18
900.81	0.74	3.77	900.67	15.13 N	0.93 W	-14.86	0.14
995.38	0.72	7.35	995.23	16.33 N	0.81 W	-16.07	0.05
1089.95	0.81	8.32	1089.79	17.58 N	0.64 W	-17.33	0.10
1184.52	0.69	27.21	1,184.36	18.75 N	0.28 W	-18.53	0.29
1279.09	1.03	30.85	1,278.91	19.99 N	0.41 E	-19.85	0.36
1373.66	1.08	35.18	1,373.47	21.44 N	1.36 E	-21.43	0.10
1468.23	1.05	28.35	1,468.02	22.93 N	2.29 E	-23.03	0.14
1562.80	1.19	28.57	1,562.57	24.56 N	3.17 E	-24.76	0.15
1657.37	1.49	28.92	1,657.12	26.50 N	4.23 E	-26.83	0.32
1751.94	1.63	28.43	1,751.65	28.76 N	5.47 E	-29.23	0.15
1846.51	1.27	19.51	1,846.19	30.93 N	6.46 E	-31.52	0.45
1941.08	1.33	16.40	1,940.74	32.97 N	7.12 E	-33.63	0.10
2035.65	1.32	9.86	2,035.28	35.09 N	7.61 E	-35.81	0.16
2130.22	1.28	7.13	2,129.83	37.22 N	7.93 E	-37.95	0.08
2224.79	1.23	354.78	2,224.38	39.27 N	7.97 E	-40.00	0.29
2319.36	1.26	346.20	2,318.92	41.30 N	7.63 E	-41.95	0.20
2413.93	1.43	333.29	2,413.47	43.36 N	6.85 E	-43.89	0.37
2508.50	1.46	339.89	2,508.01	45.54 N	5.91 E	-45.92	0.18
2603.07	1.51	348.33	2,602.55	47.90 N	5.24 E	-48.16	0.24
2697.64	1.56	343.69	2,697.08	50.35 N	4.63 E	-50.51	0.14
2792.21	1.38	342.69	2,791.62	52.67 N	3.93 E	-52.72	0.19
2886.78	1.38	342.72	2,886.16	54.85 N	3.25 E	-54.78	0.00
2981.35	1.38	340.12	2,980.71	57.01 N	2.52 E	-56.82	0.07
3075.92	1.55	341.13	3,075.25	59.29 N	1.72 E	-58.97	0.18
3170.49	1.39	342.75	3,169.78	61.59 N	0.97 E	-61.15	0.17
3265.06	1.55	344.05	3,264.32	63.92 N	0.28 E	-63.36	0.17
3359.63	1.34	341.13	3,358.86	66.20 N	0.43 W	-65.52	0.24
3454.20	1.48	328.61	3,453.40	68.28 N	1.42 W	-67.45	0.36
3548.77	1.41	323.24	3,547.94	70.26 N	2.76 W	-69.22	0.16
3643.34	1.37	320.78	3,642.49	72.07 N	4.17 W	-70.82	0.08
3737.91	1.39	325.09	3,737.03	73.88 N	5.54 W	-72.44	0.11
3832.48	1.51	326.03	3,831.57	75.86 N	6.89 W	-74.21	0.13

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100)
3927.05	1.43	311.88	3,926.11	77.68 N	8.47 W	75.79	0.39
4021.62	1.78	291.68	4,020.64	79.01 N	10.71 W	76.81	0.70
4116.19	2.13	279.00	4,115.16	79.83 N	13.81 W	-77.19	0.59
4210.76	2.80	274.06	4,209.64	80.27 N	17.85 W	-77.08	0.74
4305.33	3.14	274.30	4,304.08	80.62 N	22.74 W	-76.76	0.36
4399.90	3.53	283.79	4,398.49	81.51 N	28.15 W	-76.90	0.71
4494.47	3.79	283.12	4,492.87	82.91 N	34.02 W	-77.49	0.28
4589.04	3.65	283.52	4,587.24	84.33 N	39.99 W	-78.08	0.15
4683.61	3.51	285.91	4,681.63	85.83 N	45.70 W	-78.78	0.22
4778.18	3.60	287.82	4,776.01	87.53 N	51.31 W	-79.70	0.16
4872.75	3.51	295.79	4,870.40	89.70 N	56.74 W	-81.10	0.53
4967.32	3.57	293.20	4,964.79	92.11 N	62.06 W	-82.78	0.18
5061.89	3.75	284.99	5,059.17	94.07 N	67.75 W	-83.94	0.59
5156.46	3.62	295.92	5,153.55	96.18 N	73.42 W	-85.25	0.75
5251.03	3.57	316.48	5,247.93	99.62 N	78.14 W	-88.01	1.36
5345.60	3.68	321.21	5,342.31	104.12 N	82.07 W	-91.94	0.34
5440.17	3.48	316.76	5,436.70	108.58 N	85.93 W	-95.82	0.36
5534.74	3.06	314.06	5,531.12	112.42 N	89.71 W	-99.12	0.47
5629.31	3.03	320.27	5,625.55	116.10 N	93.12 W	-102.29	0.35
5723.88	3.06	324.69	5,719.99	120.08 N	96.18 W	-105.82	0.25
5818.45	2.69	325.51	5,814.44	123.97 N	98.90 W	-109.30	0.39
5913.02	2.31	324.43	5,908.92	127.35 N	101.26 W	-112.33	0.40
6007.59	2.89	313.39	6,003.39	130.54 N	104.10 W	-115.10	0.81
6102.16	4.36	304.17	6,097.77	134.20 N	108.81 W	-118.08	1.67
6196.73	4.62	300.22	6,192.05	138.13 N	115.08 W	-121.12	0.43
6291.30	4.49	299.19	6,286.32	141.85 N	121.60 W	-123.92	0.16
6385.87	4.17	304.09	6,380.62	145.59 N	127.68 W	-126.78	0.52
6480.44	3.98	309.90	6,474.95	149.62 N	133.04 W	-130.05	0.48
6575.01	3.80	305.97	6,569.31	153.57 N	138.10 W	-133.27	0.34
6669.58	3.63	305.78	6,663.68	157.16 N	143.06 W	-136.14	0.18
6764.15	3.48	311.67	6,758.07	160.81 N	147.63 W	-139.14	0.42
6858.72	3.31	311.06	6,852.47	164.52 N	151.84 W	-142.24	0.18
6953.29	2.99	310.57	6,946.90	167.91 N	155.77 W	-145.07	0.34
7047.86	2.66	309.13	7,041.35	170.90 N	159.35 W	-147.54	0.36
7142.43	2.31	300.08	7,135.83	173.24 N	162.70 W	-149.40	0.55
7237.00	2.25	304.78	7,230.33	175.26 N	165.87 W	-150.96	0.21
7331.57	2.36	327.29	7,324.82	177.95 N	168.45 W	-153.28	0.96
7426.14	2.71	328.14	7,419.30	181.49 N	170.68 W	-156.48	0.37
7520.71	2.32	334.58	7,513.78	185.12 N	172.68 W	-159.80	0.51
7615.28	2.61	321.59	7,608.26	188.54 N	174.84 W	-162.89	0.66
7656.00	2.59	315.18	7,648.94	189.91 N	176.06 W	-164.09	0.72
7750.00	8.67	192.59	7,742.61	184.49 N	179.11 W	-158.30	10.95
7782.00	11.87	189.39	7,774.09	178.89 N	180.17 W	-152.60	10.17
7813.00	16.16	188.27	7,804.16	171.47 N	181.32 W	-145.10	13.85
7845.00	21.16	186.83	7,834.47	161.33 N	182.64 W	-134.87	15.69

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100)
7876.00	24.93	187.17	7,862.99	149.29 N	184.12 W	122.74	12.17
7908.00	29.28	186.88	7,891.47	134.82 N	185.90 W	108.17	13.60
7939.00	33.65	184.93	7,917.91	118.73 N	187.55 W	-92.00	14.49
7971.00	37.76	184.79	7,943.89	100.12 N	189.13 W	73.35	12.84
8002.00	42.64	183.50	7,967.56	80.17 N	190.57 W	-53.39	15.96
8034.00	47.38	183.76	7,990.18	57.59 N	192.00 W	30.83	14.84
8065.00	51.89	183.24	8,010.25	34.02 N	193.44 W	-7.28	14.59
8097.00	56.82	183.32	8,028.89	8.07 N	194.93 W	18.63	15.43
8129.00	60.26	184.57	8,045.59	19.16 S	196.81 W	45.86	11.23
8160.00	64.01	184.84	8,060.08	46.47 S	199.06 W	73.22	12.11
8192.00	67.58	185.81	8,073.19	75.52 S	201.77 W	102.37	11.50
8223.00	70.50	186.05	8,084.28	104.31 S	204.77 W	131.30	9.45
8255.00	72.51	185.67	8,094.43	134.50 S	207.86 W	161.63	6.38
8286.00	74.70	185.18	8,103.18	164.10 S	210.67 W	191.34	7.23
8318.00	77.28	184.68	8,110.93	195.03 S	213.34 W	222.34	8.19
8349.00	79.25	185.27	8,117.23	225.27 S	215.97 W	252.66	6.63
8381.00	80.62	185.08	8,122.83	256.65 S	218.81 W	284.13	4.32
8412.00	83.16	185.54	8,127.20	287.20 S	221.65 W	314.79	8.34
8444.00	86.23	185.53	8,130.15	318.91 S	224.73 W	346.62	9.59
8471.00	88.77	185.82	8,131.33	345.75 S	227.39 W	373.57	9.45
8503.00	89.17	186.14	8,131.91	377.58 S	230.73 W	405.55	1.60
8534.00	89.14	186.21	8,132.37	408.39 S	234.06 W	436.53	0.23
8566.00	88.98	186.35	8,132.89	440.20 S	237.56 W	468.52	0.66
8661.00	89.88	186.29	8,133.84	534.61 S	248.01 W	563.48	0.94
8755.00	90.40	186.35	8,133.61	628.04 S	258.35 W	657.44	0.56
8850.00	91.76	185.84	8,131.82	722.49 S	268.43 W	752.38	1.53
8945.00	92.65	186.21	8,128.17	816.89 S	278.39 W	847.26	1.02
9039.00	92.90	187.12	8,123.62	910.14 S	289.30 W	941.13	1.01
9134.00	92.83	188.34	8,118.87	1,004.16 S	302.06 W	1036.01	1.28
9229.00	90.74	186.49	8,115.91	1,098.31 S	314.31 W	1,130.95	2.94
9324.00	90.40	186.72	8,114.96	1,192.68 S	325.24 W	1,225.92	0.43
9418.00	90.06	185.13	8,114.58	1,286.17 S	334.94 W	1,319.86	1.73
9513.00	91.94	185.75	8,112.92	1,380.72 S	343.95 W	1,414.76	2.09
9608.00	92.19	186.84	8,109.50	1,475.09 S	354.36 W	1,509.66	1.18
9702.00	90.40	184.89	8,107.38	1,568.56 S	363.97 W	1,603.57	2.82
9797.00	90.83	185.68	8,106.35	1,663.15 S	372.72 W	1,698.47	0.95
9892.00	90.31	184.85	8,105.41	1,757.75 S	381.43 W	1,793.37	1.04
9986.00	90.95	183.81	8,104.37	1,851.47 S	388.52 W	1,887.19	1.30
10081.00	90.92	184.43	8,102.82	1,946.21 S	395.34 W	1,981.97	0.66
10176.00	92.68	184.97	8,099.83	2,040.84 S	403.12 W	2,076.78	1.93
10270.00	93.02	186.32	8,095.16	2,134.27 S	412.35 W	2,170.59	1.48
10365.00	90.77	184.43	8,092.02	2,228.79 S	421.24 W	2,265.44	3.09
10459.00	90.83	185.20	8,090.70	2,322.45 S	429.13 W	2,359.30	0.83
10554.00	91.05	185.32	8,089.15	2,417.03 S	437.84 W	2,454.19	0.26
10649.00	91.73	183.97	8,086.84	2,511.69 S	445.53 W	2,549.01	1.59

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100')
10743.00	91.76	185.27	8,083.99	2,605.34 S	453.10 W	2642.81	1.38
10838.00	93.17	184.21	8,079.90	2,699.93 S	460.94 W	2737.58	1.86
10933.00	92.95	184.52	8,074.82	2,794.51 S	468.16 W	2832.27	0.40
11028.00	94.11	185.14	8,068.97	2,888.99 S	476.14 W	2926.95	1.38
11122.00	94.66	185.55	8,061.78	2,982.31 S	484.87 W	3020.59	0.73
11217.00	92.83	186.09	8,055.57	3,076.61 S	494.49 W	3115.32	2.01
11312.00	88.86	186.18	8,054.17	3,171.04 S	504.64 W	3210.25	4.18
11406.00	85.32	185.35	8,058.94	3,264.43 S	514.08 W	3304.05	3.86
11501.00	84.31	186.98	8,067.52	3,358.49 S	524.25 W	3398.62	2.01
11596.00	84.45	187.22	8,076.83	3,452.31 S	535.93 W	3493.15	0.29
11690.00	85.55	185.93	8,085.02	3,545.33 S	546.66 W	3586.77	1.80
11785.00	87.05	184.60	8,091.15	3,639.72 S	555.36 W	3681.47	2.11
11880.00	89.26	183.16	8,094.21	3,734.45 S	561.78 W	3776.18	2.78
11974.00	89.69	183.76	8,095.07	3,828.27 S	567.45 W	3869.90	0.79
12069.00	90.06	184.70	8,095.28	3,923.01 S	574.46 W	3964.71	1.07
12164.00	90.15	186.17	8,095.10	4,017.58 S	583.46 W	4059.62	1.55
12258.00	89.38	186.58	8,095.48	4,111.00 S	593.90 W	4153.59	0.93
12353.00	88.86	187.87	8,096.93	4,205.23 S	605.85 W	4248.57	1.47
12447.00	90.28	187.39	8,097.64	4,298.39 S	618.33 W	4342.57	1.59
12542.00	89.91	187.87	8,097.49	4,392.55 S	630.95 W	4437.57	0.64
12637.00	88.92	188.41	8,098.46	4,486.59 S	644.40 W	4532.56	1.18
12731.00	88.40	187.04	8,100.66	4,579.71 S	657.03 W	4626.53	1.56
12826.00	88.09	185.76	8,103.57	4,674.07 S	667.62 W	4721.45	1.39
12920.00	88.09	185.97	8,106.71	4,767.53 S	677.21 W	4815.34	0.22
13015.00	87.54	185.59	8,110.33	4,861.97 S	686.77 W	4910.21	0.70
13110.00	89.60	184.91	8,112.71	4,956.54 S	695.46 W	5005.08	2.29
13204.00	91.51	185.58	8,111.80	5,050.14 S	704.05 W	5098.97	2.15
13299.00	91.29	186.84	8,109.48	5,144.55 S	714.33 W	5193.90	1.35
13393.00	89.20	186.47	8,109.07	5,237.91 S	725.22 W	5287.88	2.27
13488.00	89.85	187.41	8,109.86	5,332.21 S	736.70 W	5382.86	1.21
13583.00	91.17	189.35	8,109.02	5,426.18 S	750.54 W	5477.84	2.47
13677.00	90.68	190.26	8,107.50	5,518.80 S	766.54 W	5571.78	1.10
13772.00	89.66	187.29	8,107.22	5,612.67 S	781.03 W	5666.75	3.30
13867.00	90.74	186.40	8,106.89	5,706.99 S	792.35 W	5761.73	1.47
13961.00	90.55	186.54	8,105.83	5,800.39 S	802.94 W	5855.70	0.25
14056.00	90.31	186.51	8,105.12	5,894.77 S	813.74 W	5950.67	0.26
14150.00	89.97	187.23	8,104.89	5,988.10 S	824.98 W	6044.66	0.85
14245.00	90.43	186.71	8,104.56	6,082.39 S	836.52 W	6139.65	0.73
14340.00	90.46	186.31	8,103.81	6,176.78 S	847.29 W	6234.62	0.42
14434.00	89.57	187.40	8,103.79	6,270.10 S	858.51 W	6328.60	1.50
14529.00	89.51	186.24	8,104.56	6,364.42 S	869.79 W	6423.58	1.23
14624.00	89.72	186.97	8,105.20	6,458.79 S	880.71 W	6518.55	0.80
14718.00	89.45	187.25	8,105.88	6,552.07 S	892.34 W	6612.54	0.42
14813.00	90.06	187.08	8,106.29	6,646.32 S	904.19 W	6707.54	0.67
14908.00	90.25	187.91	8,106.03	6,740.51 S	916.58 W	6802.53	0.89

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100)
15002.00	90.43	187.68	8,105.48	6,833.64 S	929.33 W	6896.53	0.32
15097.00	89.91	188.04	8,105.20	6,927.75 S	942.32 W	6991.53	0.67
15191.00	89.72	187.94	8,105.50	7,020.83 S	955.39 W	7085.53	0.22
15286.00	90.43	188.45	8,105.38	7,114.86 S	968.93 W	7180.53	0.92
15318.00	90.40	188.93	8,105.14	7,146.49 S	973.76 W	7212.52	1.48
15376.00	90.40	188.93	8,104.74	7,203.79 S	982.76 W	7270.51	0.01

SURVEY FOOTER

SURVEYS CALCULATED USING SHORT COLLAR METHOD
 TIE-ON SURVEY ASSUMED VERTICAL AT SURFACE
 SURVEYS FROM 49.68' MD TO 7615.28' MD PROVIDED BY VAUGHN ENERGY SERVICES
 SURVEYS FROM 7656' MD TO 15318' MD PROVIDED BY SPERRY DRILLING MWD
 SURVEY AT 15318' MD HAS BEEN PROJECTED TO TD AT 15376' MD
 SPERRY ENGINEERS: B. CRIST, B. OLUPONA

DIRECTIONAL SURVEY DATA NOTES

- Calculation based on minimum curvature method.
- Survey coordinates relative to well system reference point.
- TVD values given relative to drilling measurement point.
- Vertical section relative to well head.
- Vertical section is computed along a direction of 187.85 degrees (Grid)
- A total correction of 7.57 deg from Magnetic north to Grid north has been applied
- Horizontal displacement is relative to the well head.
- Horizontal displacement (closure) at 15,376.00 feet is 7,270.52 feet along 187.77 degrees (Grid)

WARRANTY

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