



NM OIL CONSERVATION

ARTESIA DISTRICT

NOV 26 2014

RECEIVED

July 3, 2014

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

Attn: David Cook

Re: **Ark 36 State 1H**

Please find enclosed a copy of the survey from 0.00' to 4295.00' 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.

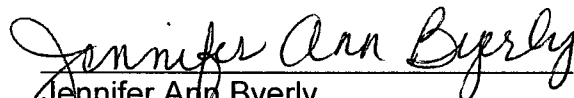
Sincerely,

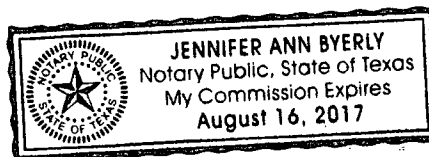

Keith Havelka
Operations

30-015-42082

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 3rd day of July,
A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas



Company: DEVON PRODUCTION COMPANY, L.P.

Lease/Well: ARK 36 STATE/1H

devon

Rig Name: H&P 214

State/County: NEW MEXICO /EDDY

Latitude: 32.47, Longitude: -103.74

GRID North is 0.32 Degrees East of True North

VS-Azi: 359.65 Degrees



30-015-42082

Depth Reference : R.K.B = 25

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: ark 36 state 1h survey.ut

Minimum Curvature Method

Report Date/Time: 7/3/2014 / 10:24

VES Survey International

(432) 563-5444

West Texas

Surveyor: Javier Estrada

Ark 36 State 1H / API 06/25/2014

NM OIL CONSERVATION

ARTESIA DISTRICT

NOV 26 2014

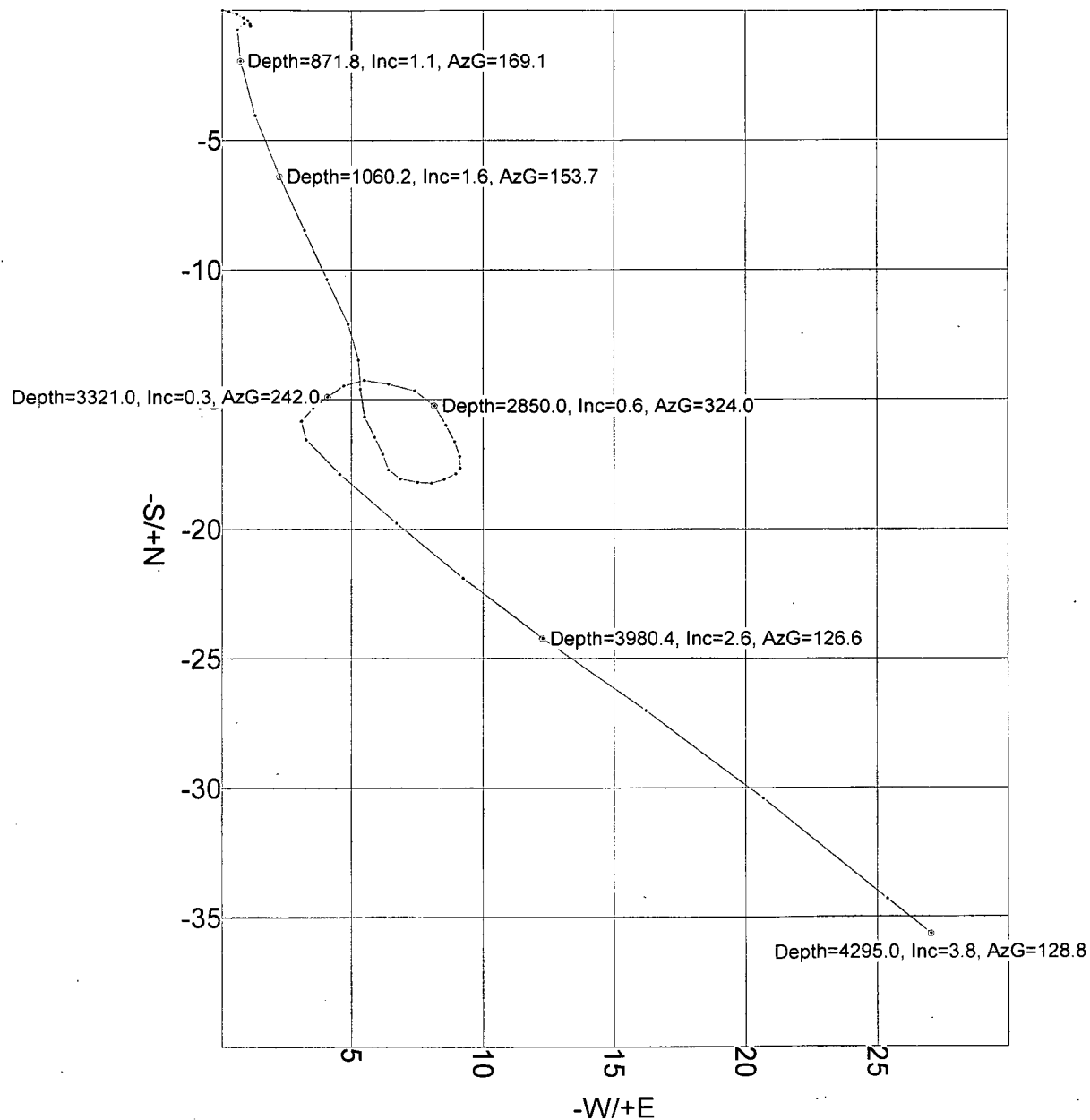
RECEIVED

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	****
118.20	0.25	104.74	118.20	-0.07	0.25	-0.07	0.26	104.74	0.21
212.40	0.14	112.78	212.40	-0.16	0.55	-0.17	0.58	106.37	0.12
306.60	0.23	121.35	306.60	-0.31	0.83	-0.31	0.88	110.42	0.10
400.80	0.01	65.61	400.80	-0.40	0.99	-0.41	1.07	112.14	0.24
495.00	0.18	149.47	495.00	-0.53	1.07	-0.54	1.20	116.33	0.19
589.20	0.09	310.49	589.20	-0.61	1.09	-0.62	1.25	119.27	0.28
683.40	0.25	280.62	683.40	-0.53	0.84	-0.53	0.99	122.22	0.19
777.60	0.34	191.68	777.60	-0.76	0.58	-0.76	0.96	142.58	0.44
871.80	1.15	169.07	871.79	-1.96	0.71	-1.96	2.08	160.18	0.90
966.00	1.52	161.57	965.96	-4.07	1.28	-4.07	4.26	162.55	0.43
1060.20	1.57	153.65	1060.13	-6.41	2.25	-6.42	6.79	160.68	0.23
1154.40	1.22	157.14	1154.30	-8.49	3.21	-8.51	9.08	159.29	0.39
1248.60	1.29	154.07	1248.48	-10.37	4.06	-10.39	11.13	158.60	0.10
1342.80	1.03	156.40	1342.66	-12.10	4.86	-12.13	13.04	158.09	0.28
1437.00	0.73	173.80	1436.85	-13.47	5.27	-13.50	14.46	158.64	0.43
1531.20	0.66	179.68	1531.04	-14.61	5.34	-14.64	15.55	159.93	0.11
1625.40	0.65	163.20	1625.23	-15.66	5.50	-15.69	16.60	160.66	0.20
1719.60	0.45	140.54	1719.43	-16.46	5.88	-16.49	17.48	160.32	0.31

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
1813.80	0.45	167.65	1813.63	-17.10	6.20	-17.14	18.19	160.08	0.22
1908.00	0.34	150.90	1907.83	-17.71	6.41	-17.75	18.83	160.10	0.17
2002.20	0.41	107.90	2002.02	-18.05	6.87	-18.09	19.31	159.17	0.30
2096.40	0.40	95.25	2096.22	-18.19	7.51	-18.23	19.68	157.55	0.10
2190.60	0.26	92.84	2190.42	-18.23	8.05	-18.28	19.92	156.17	0.15
2284.80	0.37	59.86	2284.62	-18.08	8.52	-18.14	19.99	154.76	0.22
2379.00	0.23	68.57	2378.82	-17.86	8.97	-17.92	19.98	153.35	0.16
2473.20	0.18	353.11	2473.02	-17.64	9.12	-17.70	19.86	152.65	0.27
2567.40	0.36	0.16	2567.22	-17.20	9.11	-17.26	19.46	152.10	0.20
2661.60	0.41	325.88	2661.41	-16.63	8.92	-16.68	18.87	151.78	0.25
2755.80	0.46	338.30	2755.61	-15.99	8.59	-16.05	18.15	151.76	0.12
2850.00	0.59	323.98	2849.81	-15.25	8.16	-15.30	17.29	151.83	0.19
2944.20	0.61	292.50	2944.00	-14.66	7.41	-14.71	16.43	153.17	0.35
3038.40	0.65	276.78	3038.20	-14.40	6.41	-14.44	15.77	155.99	0.19
3132.60	0.50	282.48	3132.39	-14.25	5.48	-14.29	15.27	158.96	0.18
3226.80	0.59	231.27	3226.59	-14.47	4.70	-14.50	15.21	162.01	0.51
3321.00	0.32	242.04	3320.78	-14.90	4.08	-14.92	15.45	164.67	0.30
3415.20	0.53	225.94	3414.98	-15.33	3.53	-15.35	15.73	167.02	0.25
3509.40	0.30	212.53	3509.18	-15.84	3.09	-15.86	16.14	168.97	0.27
3603.60	0.72	148.17	3603.38	-16.55	3.27	-16.57	16.87	168.82	0.69
3697.80	1.54	130.26	3697.56	-17.87	4.55	-17.89	18.44	165.72	0.94
3792.00	1.97	131.90	3791.71	-19.77	6.72	-19.81	20.88	161.23	0.46
3886.20	2.03	128.65	3885.86	-21.89	9.23	-21.95	23.76	157.14	0.14
3980.40	2.64	126.63	3979.98	-24.23	12.27	-24.30	27.16	153.14	0.65
4074.60	3.22	124.13	4074.05	-27.01	16.20	-27.10	31.49	149.04	0.63
4168.80	3.62	129.85	4168.09	-30.40	20.68	-30.52	36.76	145.78	0.56
4263.00	3.82	129.53	4262.09	-34.30	25.38	-34.45	42.67	143.50	0.21
4295.00	3.85	128.78	4294.02	-35.65	27.04	-35.81	44.74	142.82	0.18



VES Survey International
(432) 563-5444
West Texas
Surveyor: Javier Estrada
Ark 36 State 1H / API 06/25/2014



VES Survey Date: 06/25/2014



Directional Survey

District DELAWARE BASIN	County EDDY	Field Name INGLE WELLS	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location SEC. 36 T22S S R31E	API/UWI 3001542082	Latitude (°) 32° 20' 28.58" N	Longitude (°) 103° 44' 14.936" W	Ground Elev... 3,450.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,475.20
				Tubing Head Elevation (ft)

Wellbore Name OH	Parent Wellbore	SAP Well ID 35797	Kick Off Depth (ftKB)	Vertical Section Direction (°) 359.65
Actual Deviation Survey ACTUAL SURVEYS, Proposed? No	Definitive? Yes	Proposed? No	Proposed Deviation Survey	

Deviation Survey	Date 6/26/2014	Description ACTUAL SURVEYS
MD Tie In (ftKB) 0.00	TVD Tie In (ftKB) 0.00	Inclination Tie In (°) 0.00
		Azimuth Tie In (°) 0.00
		NSTie In (ft) 0.00
		EW Tie In (ft) 0.00

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
6/26/2014	118.20	0.25	104.74	118.20	-0.07	-0.07	0.25	0.21	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	212.40	0.14	112.78	212.40	-0.17	-0.16	0.55	0.12	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	306.60	0.23	121.35	306.60	-0.31	-0.31	0.82	0.10	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	400.80	0.01	65.61	400.80	-0.41	-0.40	0.99	0.24	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	495.00	0.18	149.47	495.00	-0.53	-0.52	1.07	0.19	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	589.20	0.09	310.49	589.20	-0.61	-0.60	1.09	0.28	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	683.40	0.25	280.62	683.40	-0.52	-0.52	0.83	0.19	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	777.60	0.34	191.68	777.60	-0.76	-0.75	0.58	0.44	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	871.80	1.15	169.07	871.79	-1.96	-1.96	0.70	0.90	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	966.00	1.52	161.57	965.96	-4.08	-4.07	1.27	0.43	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	1,060.20	1.57	153.65	1,060.13	-6.42	-6.41	2.24	0.23	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	1,154.40	1.22	157.14	1,154.30	-8.51	-8.49	3.20	0.38	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	1,248.60	1.29	154.07	1,248.48	-10.39	-10.37	4.06	0.10	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	1,342.80	1.03	156.40	1,342.66	-12.13	-12.10	4.86	0.28	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	1,437.00	0.73	173.80	1,436.85	-13.50	-13.47	5.26	0.42	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	1,531.20	0.66	179.68	1,531.04	-14.64	-14.61	5.33	0.11	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	1,625.40	0.65	163.20	1,625.23	-15.70	-15.66	5.49	0.20	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	1,719.60	0.45	140.54	1,719.43	-16.50	-16.46	5.88	0.31	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	1,813.80	0.45	167.65	1,813.63	-17.15	-17.11	6.19	0.22	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	1,908.00	0.34	150.90	1,907.82	-17.75	-17.71	6.41	0.17	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	2,002.20	0.41	107.90	2,002.02	-18.10	-18.06	6.86	0.30	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	2,096.40	0.40	95.25	2,096.22	-18.24	-18.20	7.51	0.10	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	2,190.60	0.26	92.84	2,190.42	-18.28	-18.24	8.05	0.15	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	2,284.80	0.37	59.86	2,284.62	-18.15	-18.09	8.53	0.22	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	2,379.00	0.23	68.57	2,378.82	-17.93	-17.87	8.97	0.16	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	2,473.20	0.18	353.11	2,473.02	-17.71	-17.66	9.13	0.27	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	2,567.40	0.36	0.16	2,567.21	-17.27	-17.21	9.11	0.19	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	2,661.60	0.41	325.88	2,661.41	-16.69	-16.64	8.92	0.25	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	2,755.80	0.46	338.30	2,755.61	-16.06	-16.01	8.59	0.11	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	2,850.00	0.59	323.98	2,849.81	-15.31	-15.26	8.17	0.20	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	2,944.20	0.61	292.50	2,944.00	-14.72	-14.68	7.42	0.35	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	3,038.40	0.65	276.78	3,038.20	-14.46	-14.42	6.42	0.19	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	3,132.60	0.50	282.48	3,132.39	-14.31	-14.27	5.49	0.17	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	3,226.80	0.59	231.27	3,226.59	-14.52	-14.49	4.71	0.51	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	3,321.00	0.32	242.04	3,320.78	-14.94	-14.91	4.10	0.30	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	3,415.20	0.53	225.94	3,414.98	-15.36	-15.34	3.56	0.25	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	3,509.40	0.30	212.53	3,509.18	-15.87	-15.85	3.11	0.26	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	3,603.60	0.72	148.17	3,603.38	-16.58	-16.56	3.29	0.69	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	3,697.80	1.54	130.26	3,697.56	-17.91	-17.88	4.57	0.94	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	3,792.00	1.97	131.90	3,791.71	-19.82	-19.78	6.74	0.46	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	3,886.20	2.03	128.65	3,885.86	-21.96	-21.91	9.25	0.14	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	3,980.40	2.64	126.63	3,979.98	-24.32	-24.24	12.29	0.65	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	4,074.60	3.22	124.13	4,074.05	-27.12	-27.02	16.22	0.63	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	4,168.80	3.62	129.85	4,168.09	-30.54	-30.41	20.70	0.56	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	4,263.00	3.82	129.53	4,262.09	-34.47	-34.31	25.40	0.21	GYRO	VAUHG N ENERGY SERVICES
6/26/2014	4,295.00	3.85	128.78	4,294.02	-35.83	-35.67	27.06	0.18	GYRO	VAUHG N ENERGY SERVICES
6/29/2014	4,451.00	3.78	129.76	4,449.67	-42.45	-42.23	35.09	0.06	MWD	WEATHERFORD MWD



Directional Survey

District DELAWARE BASIN	County EDDY	Field Name INGLE WELLS	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location SEC. 36 T22S S R31E	API/UWI 3001542082	Latitude (°) 32° 20' 28.58" N	Longitude (°) 103° 44' 14.936" W	Ground Elev... 3,450.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,475.20
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
6/29/2014	4,544.00	3.38	123.30	4,542.49	-45.94	-45.70	39.74	0.61	MWD	WEATHERFORD MWD
6/29/2014	4,638.00	2.24	128.71	4,636.37	-48.64	-48.37	43.49	1.24	MWD	WEATHERFORD MWD
6/29/2014	4,732.00	1.36	161.41	4,730.33	-50.85	-50.58	45.28	1.40	MWD	WEATHERFORD MWD
6/29/2014	4,826.00	0.45	239.49	4,824.32	-52.10	-51.82	45.32	1.43	MWD	WEATHERFORD MWD
6/29/2014	4,921.00	1.13	252.42	4,919.31	-52.56	-52.29	44.10	0.74	MWD	WEATHERFORD MWD
6/29/2014	5,015.00	2.13	238.04	5,013.27	-53.75	-53.50	41.74	1.14	MWD	WEATHERFORD MWD
6/29/2014	5,110.00	3.11	240.65	5,108.17	-55.93	-55.70	37.99	1.04	MWD	WEATHERFORD MWD
6/29/2014	5,204.00	3.06	240.83	5,202.03	-58.37	-58.17	33.58	0.05	MWD	WEATHERFORD MWD
6/29/2014	5,299.00	3.02	236.47	5,296.90	-60.96	-60.79	29.28	0.25	MWD	WEATHERFORD MWD
6/29/2014	5,393.00	2.86	240.68	5,390.78	-63.46	-63.30	25.17	0.29	MWD	WEATHERFORD MWD
6/29/2014	5,488.00	2.74	239.39	5,485.66	-65.75	-65.62	21.15	0.14	MWD	WEATHERFORD MWD
6/29/2014	5,582.00	2.92	237.15	5,579.55	-68.17	-68.06	17.21	0.22	MWD	WEATHERFORD MWD
6/29/2014	5,676.00	2.93	239.83	5,673.43	-70.65	-70.57	13.12	0.15	MWD	WEATHERFORD MWD
6/29/2014	5,771.00	2.95	238.65	5,768.30	-73.11	-73.06	8.93	0.07	MWD	WEATHERFORD MWD
6/29/2014	5,866.00	2.86	235.54	5,863.18	-75.70	-75.67	4.89	0.19	MWD	WEATHERFORD MWD
6/29/2014	5,960.00	2.74	238.62	5,957.07	-78.18	-78.17	1.04	0.20	MWD	WEATHERFORD MWD
6/30/2014	6,055.00	2.72	235.30	6,051.96	-80.62	-80.64	-2.75	0.17	MWD	WEATHERFORD MWD
6/30/2014	6,149.00	2.73	237.88	6,145.85	-83.06	-83.10	-6.48	0.13	MWD	WEATHERFORD MWD
6/30/2014	6,244.00	2.62	239.50	6,240.75	-85.34	-85.40	-10.27	0.14	MWD	WEATHERFORD MWD
6/30/2014	6,338.00	2.65	237.13	6,334.65	-87.58	-87.67	-13.95	0.12	MWD	WEATHERFORD MWD
6/30/2014	6,433.00	2.60	241.08	6,429.55	-89.80	-89.90	-17.68	0.20	MWD	WEATHERFORD MWD
6/30/2014	6,527.00	2.53	236.01	6,523.46	-91.96	-92.10	-21.26	0.25	MWD	WEATHERFORD MWD
6/30/2014	6,622.00	2.60	238.78	6,618.36	-94.23	-94.38	-24.85	0.15	MWD	WEATHERFORD MWD
6/30/2014	6,716.00	2.66	240.25	6,712.26	-96.40	-96.57	-28.56	0.10	MWD	WEATHERFORD MWD
6/30/2014	6,811.00	2.80	241.56	6,807.15	-98.57	-98.77	-32.52	0.16	MWD	WEATHERFORD MWD
6/30/2014	6,905.00	2.60	240.93	6,901.05	-100.68	-100.90	-36.40	0.22	MWD	WEATHERFORD MWD
6/30/2014	7,000.00	2.40	240.89	6,995.96	-102.67	-102.92	-40.02	0.21	MWD	WEATHERFORD MWD
6/30/2014	7,094.00	2.37	241.86	7,089.88	-104.52	-104.79	-43.45	0.05	MWD	WEATHERFORD MWD
6/30/2014	7,188.00	2.06	240.58	7,183.81	-106.25	-106.54	-46.64	0.33	MWD	WEATHERFORD MWD
7/1/2014	7,283.00	1.90	241.13	7,278.75	-107.83	-108.13	-49.50	0.17	MWD	WEATHERFORD MWD
7/1/2014	7,377.00	3.28	238.61	7,372.65	-109.96	-110.29	-53.17	1.47	MWD	WEATHERFORD MWD
7/1/2014	7,472.00	3.61	240.72	7,467.48	-112.81	-113.17	-58.09	0.37	MWD	WEATHERFORD MWD
7/1/2014	7,567.00	3.63	241.34	7,562.29	-115.68	-116.07	-63.34	0.05	MWD	WEATHERFORD MWD
7/1/2014	7,661.00	3.52	243.33	7,656.11	-118.37	-118.79	-68.53	0.18	MWD	WEATHERFORD MWD
7/2/2014	7,756.00	3.45	224.03	7,750.94	-121.71	-122.16	-73.12	1.23	MWD	WEATHERFORD MWD
7/1/2014	7,851.00	3.37	224.93	7,845.77	-125.72	-126.19	-77.08	0.10	MWD	WEATHERFORD MWD
7/1/2014	7,945.00	3.23	237.39	7,939.61	-129.07	-129.57	-81.27	0.78	MWD	WEATHERFORD MWD
7/1/2014	8,040.00	3.35	235.66	8,034.46	-132.05	-132.58	-85.81	0.16	MWD	WEATHERFORD MWD
7/1/2014	8,134.00	3.54	239.47	8,128.29	-135.05	-135.60	-90.58	0.32	MWD	WEATHERFORD MWD
7/1/2014	8,229.00	3.23	235.30	8,223.12	-138.03	-138.62	-95.31	0.42	MWD	WEATHERFORD MWD
7/1/2014	8,323.00	3.30	232.33	8,316.97	-141.17	-141.78	-99.62	0.19	MWD	WEATHERFORD MWD
7/1/2014	8,418.00	3.29	230.95	8,411.81	-144.53	-145.17	-103.91	0.08	MWD	WEATHERFORD MWD
7/1/2014	8,512.00	2.73	225.12	8,505.68	-147.79	-148.45	-107.59	0.68	MWD	WEATHERFORD MWD
7/2/2014	8,607.00	2.51	221.64	8,600.58	-150.92	-151.60	-110.57	0.29	MWD	WEATHERFORD MWD
7/2/2014	8,701.00	2.31	241.71	8,694.50	-153.34	-154.03	-113.61	0.92	MWD	WEATHERFORD MWD
7/2/2014	8,795.00	2.30	254.32	8,788.42	-154.72	-155.44	-117.09	0.54	MWD	WEATHERFORD MWD
7/2/2014	8,890.00	2.02	266.03	8,883.36	-155.33	-156.07	-120.60	0.55	MWD	WEATHERFORD MWD
7/2/2014	8,984.00	2.67	254.43	8,977.28	-156.01	-156.77	-124.36	0.85	MWD	WEATHERFORD MWD
7/2/2014	9,079.00	2.80	246.88	9,072.17	-157.49	-158.28	-128.62	0.40	MWD	WEATHERFORD MWD
7/2/2014	9,174.00	3.02	241.87	9,167.05	-159.56	-160.37	-132.97	0.35	MWD	WEATHERFORD MWD
7/2/2014	9,268.00	2.70	243.24	9,260.93	-161.69	-162.54	-137.13	0.35	MWD	WEATHERFORD MWD
7/2/2014	9,362.00	2.75	242.86	9,354.83	-163.70	-164.56	-141.11	0.06	MWD	WEATHERFORD MWD
7/2/2014	9,457.00	2.85	238.73	9,449.71	-165.94	-166.83	-145.16	0.24	MWD	WEATHERFORD MWD
7/2/2014	9,551.00	2.83	232.96	9,543.60	-168.52	-169.44	-149.01	0.30	MWD	WEATHERFORD MWD
7/2/2014	9,646.00	2.66	231.59	9,638.49	-171.28	-172.22	-152.61	0.19	MWD	WEATHERFORD MWD



Directional Survey

District DELAWARE BASIN	County EDDY	Field Name INGLE WELLS	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location SEC. 36 T22S S R31E	API/UWI 3001542082	Latitude (°) 32° 20' 28.58" N	Longitude (°) 103° 44' 14.936" W	Ground Elev... 3,450.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,475.20
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
7/2/2014	9,740.00	2.63	211.19	9,732.39	-174.47	-175.42	-155.43	1.00	MWD	WEATHERFORD MWD
7/2/2014	9,761.00	2.67	214.47	9,753.37	-175.28	-176.23	-155.96	0.75	MWD	WEATHERFORD MWD
7/2/2014	9,803.00	2.70	212.49	9,795.32	-176.91	-177.88	-157.04	0.23	MWD	WEATHERFORD MWD
7/2/2014	9,834.00	2.20	212.41	9,826.29	-178.03	-178.99	-157.75	1.61	MWD	WEATHERFORD MWD
7/2/2014	9,866.00	1.44	319.90	9,858.28	-178.23	-179.21	-158.34	9.28	MWD	WEATHERFORD MWD
7/2/2014	9,897.00	4.50	347.84	9,889.24	-176.74	-177.72	-158.85	10.64	MWD	WEATHERFORD MWD
7/2/2014	9,929.00	7.48	349.65	9,921.06	-173.46	-174.44	-159.49	9.33	MWD	WEATHERFORD MWD
7/2/2014	9,960.00	10.45	351.55	9,951.68	-168.69	-169.67	-160.26	9.63	MWD	WEATHERFORD MWD
7/2/2014	9,992.00	12.96	350.16	9,983.01	-162.28	-163.27	-161.30	7.89	MWD	WEATHERFORD MWD
7/2/2014	10,023.00	15.32	349.43	10,013.07	-154.82	-155.82	-162.65	7.63	MWD	WEATHERFORD MWD
7/2/2014	10,055.00	18.08	349.01	10,043.72	-145.78	-146.78	-164.37	8.63	MWD	WEATHERFORD MWD
7/2/2014	10,086.00	20.90	349.42	10,072.94	-135.61	-136.62	-166.30	9.11	MWD	WEATHERFORD MWD
7/2/2014	10,118.00	23.93	349.95	10,102.52	-123.59	-124.62	-168.49	9.49	MWD	WEATHERFORD MWD
7/2/2014	10,149.00	27.31	350.07	10,130.46	-110.37	-111.42	-170.81	10.90	MWD	WEATHERFORD MWD
7/2/2014	10,180.00	30.74	349.53	10,157.57	-95.56	-96.62	-173.48	11.10	MWD	WEATHERFORD MWD
7/2/2014	10,212.00	33.82	350.14	10,184.62	-78.72	-79.80	-176.49	9.68	MWD	WEATHERFORD MWD
7/2/2014	10,243.00	37.92	351.94	10,209.73	-60.76	-61.86	-179.30	13.66	MWD	WEATHERFORD MWD
7/2/2014	10,275.00	40.44	353.19	10,234.54	-40.70	-41.82	-181.91	8.25	MWD	WEATHERFORD MWD
7/2/2014	10,306.00	43.42	353.40	10,257.60	-20.12	-21.25	-184.33	9.62	MWD	WEATHERFORD MWD
7/2/2014	10,338.00	46.48	353.41	10,280.24	2.35	1.21	-186.93	9.56	MWD	WEATHERFORD MWD
7/2/2014	10,369.00	49.70	353.39	10,300.95	25.28	24.12	-189.58	10.39	MWD	WEATHERFORD MWD
7/2/2014	10,400.00	52.31	352.95	10,320.45	49.22	48.04	-192.44	8.49	MWD	WEATHERFORD MWD
7/2/2014	10,432.00	54.92	354.75	10,339.43	74.85	73.65	-195.20	9.33	MWD	WEATHERFORD MWD
7/2/2014	10,464.00	57.99	355.67	10,357.12	101.43	100.23	-197.42	9.89	MWD	WEATHERFORD MWD
7/2/2014	10,495.00	60.89	358.21	10,372.88	128.09	126.88	-198.84	11.72	MWD	WEATHERFORD MWD
7/2/2014	10,527.00	64.32	359.06	10,387.60	156.49	155.28	-199.51	10.97	MWD	WEATHERFORD MWD
7/2/2014	10,558.00	68.39	0.82	10,400.03	184.88	183.67	-199.53	14.12	MWD	WEATHERFORD MWD
7/2/2014	10,590.00	72.59	1.69	10,410.72	215.03	213.82	-198.87	13.37	MWD	WEATHERFORD MWD
7/2/2014	10,621.00	76.22	1.75	10,419.05	244.86	243.66	-197.97	11.71	MWD	WEATHERFORD MWD
7/2/2014	10,653.00	80.29	3.51	10,425.56	276.14	274.94	-196.53	13.81	MWD	WEATHERFORD MWD
7/2/2014	10,684.00	84.47	4.07	10,429.67	306.78	305.60	-194.50	13.60	MWD	WEATHERFORD MWD
7/2/2014	10,706.00	86.92	3.86	10,431.32	328.65	327.48	-192.98	11.18	MWD	WEATHERFORD MWD
7/2/2014	10,737.00	89.72	2.89	10,432.23	359.57	358.41	-191.16	9.56	MWD	WEATHERFORD MWD
7/2/2014	10,800.00	90.91	2.88	10,431.88	422.47	421.33	-187.99	1.89	MWD	WEATHERFORD MWD
7/2/2014	10,894.00	92.94	3.45	10,428.73	516.23	515.13	-182.80	2.24	MWD	WEATHERFORD MWD
7/2/2014	10,989.00	93.43	3.18	10,423.45	610.89	609.82	-177.32	0.59	MWD	WEATHERFORD MWD
7/2/2014	11,083.00	93.64	2.12	10,417.65	704.58	703.54	-172.98	1.15	MWD	WEATHERFORD MWD
7/2/2014	11,178.00	91.54	0.98	10,413.36	799.43	798.40	-170.41	2.51	MWD	WEATHERFORD MWD
7/2/2014	11,272.00	89.51	0.38	10,412.50	893.40	892.39	-169.30	2.25	MWD	WEATHERFORD MWD
7/2/2014	11,367.00	89.86	0.75	10,413.02	988.39	987.38	-168.36	0.54	MWD	WEATHERFORD MWD
7/2/2014	11,462.00	90.63	359.78	10,412.61	1,083.38	1,082.38	-167.92	1.30	MWD	WEATHERFORD MWD
7/2/2014	11,556.00	91.40	359.99	10,410.95	1,177.36	1,176.36	-168.11	0.85	MWD	WEATHERFORD MWD
7/2/2014	11,651.00	90.63	358.95	10,409.27	1,272.35	1,271.34	-168.99	1.36	MWD	WEATHERFORD MWD
7/2/2014	11,745.00	91.05	359.64	10,407.89	1,366.33	1,365.32	-170.15	0.86	MWD	WEATHERFORD MWD
7/2/2014	11,840.00	91.54	359.96	10,405.74	1,461.31	1,460.30	-170.48	0.62	MWD	WEATHERFORD MWD
7/2/2014	11,935.00	91.82	0.58	10,402.96	1,556.26	1,555.25	-170.03	0.72	MWD	WEATHERFORD MWD
7/2/2014	12,029.00	92.24	0.98	10,399.63	1,650.19	1,649.19	-168.75	0.62	MWD	WEATHERFORD MWD
7/2/2014	12,124.00	90.42	359.89	10,397.42	1,745.15	1,744.15	-168.03	2.23	MWD	WEATHERFORD MWD
7/2/2014	12,218.00	90.77	0.34	10,396.45	1,839.14	1,838.15	-167.84	0.61	MWD	WEATHERFORD MWD
7/2/2014	12,313.00	90.91	0.41	10,395.05	1,934.12	1,933.13	-167.22	0.16	MWD	WEATHERFORD MWD
7/2/2014	12,407.00	91.26	0.59	10,393.27	2,028.09	2,027.11	-166.40	0.42	MWD	WEATHERFORD MWD
7/2/2014	12,501.00	91.47	0.83	10,391.03	2,122.05	2,121.08	-165.24	0.34	MWD	WEATHERFORD MWD
7/2/2014	12,596.00	91.89	1.51	10,388.25	2,216.97	2,216.02	-163.30	0.84	MWD	WEATHERFORD MWD
7/2/2014	12,690.00	90.21	0.24	10,386.53	2,310.93	2,309.99	-161.86	2.24	MWD	WEATHERFORD MWD
7/2/2014	12,785.00	90.21	0.34	10,386.18	2,405.92	2,404.98	-161.38	0.11	MWD	WEATHERFORD MWD



Directional Survey

District DELAWARE BASIN	County EDDY	Field Name INGLE WELLS	Project Group DELAWARE BASIN REG	State/Province NM
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			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,475.20
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (%/100ft)	Survey Tool	Survey Company
7/2/2014	12,880.00	89.86	359.50	10,386.12	2,500.92	2,499.98	-161.51	0.96	MWD	WEATHERFORD MWD
7/2/2014	12,974.00	89.93	359.77	10,386.29	2,594.92	2,593.98	-162.11	0.30	MWD	WEATHERFORD MWD
7/2/2014	13,069.00	89.86	0.37	10,386.47	2,689.92	2,688.98	-162.00	0.64	MWD	WEATHERFORD MWD
7/2/2014	13,163.00	90.70	0.22	10,386.01	2,783.91	2,782.98	-161.51	0.91	MWD	WEATHERFORD MWD
7/2/2014	13,257.00	90.84	0.49	10,384.74	2,877.90	2,876.97	-160.93	0.32	MWD	WEATHERFORD MWD
7/2/2014	13,352.00	90.70	0.87	10,383.47	2,972.87	2,971.95	-159.80	0.43	MWD	WEATHERFORD MWD
7/2/2014	13,447.00	90.98	1.67	10,382.07	3,067.82	3,066.92	-157.70	0.89	MWD	WEATHERFORD MWD
7/2/2014	13,541.00	91.40	359.51	10,380.12	3,161.78	3,160.89	-156.73	2.34	MWD	WEATHERFORD MWD
7/2/2014	13,636.00	91.89	359.47	10,377.39	3,256.74	3,255.84	-157.57	0.52	MWD	WEATHERFORD MWD
7/2/2014	13,730.00	92.24	359.77	10,374.01	3,350.68	3,349.78	-158.20	0.49	MWD	WEATHERFORD MWD
7/2/2014	13,824.00	92.45	0.38	10,370.16	3,444.60	3,443.70	-158.08	0.69	MWD	WEATHERFORD MWD
7/2/2014	13,919.00	91.89	359.65	10,366.56	3,539.53	3,538.63	-158.05	0.97	MWD	WEATHERFORD MWD
7/2/2014	14,014.00	91.61	359.34	10,363.66	3,634.48	3,633.58	-158.89	0.44	MWD	WEATHERFORD MWD
7/2/2014	14,108.00	91.89	359.78	10,360.79	3,728.44	3,727.53	-159.61	0.55	MWD	WEATHERFORD MWD
7/2/2014	14,203.00	90.91	359.11	10,358.47	3,823.41	3,822.50	-160.53	1.25	MWD	WEATHERFORD MWD
7/2/2014	14,297.00	90.70	359.15	10,357.15	3,917.40	3,916.48	-161.96	0.23	MWD	WEATHERFORD MWD
7/2/2014	14,392.00	90.91	359.68	10,355.82	4,012.39	4,011.47	-162.93	0.60	MWD	WEATHERFORD MWD
7/2/2014	14,486.00	91.26	359.90	10,354.04	4,106.37	4,105.45	-163.27	0.44	MWD	WEATHERFORD MWD
7/2/2014	14,581.00	91.68	0.01	10,351.60	4,201.34	4,200.42	-163.34	0.46	MWD	WEATHERFORD MWD
7/2/2014	14,675.00	91.61	0.34	10,348.90	4,295.29	4,294.38	-163.06	0.36	MWD	WEATHERFORD MWD
7/2/2014	14,770.00	89.58	359.61	10,347.91	4,390.28	4,389.37	-163.10	2.27	MWD	WEATHERFORD MWD
7/2/2014	14,865.00	89.58	359.78	10,348.61	4,485.28	4,484.36	-163.61	0.18	MWD	WEATHERFORD MWD
7/2/2014	15,054.00	90.84	0.94	10,347.92	4,674.26	4,673.35	-162.42	0.91	MWD	WEATHERFORD MWD
7/2/2014	15,069.00	90.91	0.58	10,347.69	4,689.25	4,688.35	-162.22	2.44	MWD	WEATHERFORD MWD
7/2/2014	15,138.00	90.91	0.58	10,346.59	4,758.23	4,757.33	-161.52	0.00	BIT	WEATHERFORD MWD