

NM OIL CONSERVATION

ARTESIA DISTRICT

JUN 3 2015

RECEIVED

DEVON ENERGY

3001541738

Carlsbad (NAD83)

Eddy County, NM (Grid North)

Lone Tree Draw "13" State Com #8H

VH - Job #320215-K-0165

Survey: drop Gyro

Regulatory Report (Grid North)

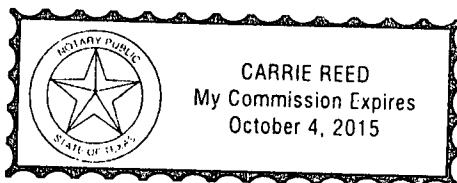
This survey is correct to the best of my knowledge and is supported by actual field data.

Jami Thornton

Notarized this date 4th of March, 2015.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Regulatory Report (Grid North)

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Lone Tree Draw "13" Staet Com #8H
Project:	Carlsbad (NAD83)	TVD Reference:	RKB @ 3196.6usft
Site:	Eddy County, NM (Grid North)	MD Reference:	RKB @ 3196.6usft
Well:	Lone Tree Draw "13" Staet Com #8H	North Reference:	Grid
Wellbore:	VH - Job #320215-K-0165	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #320215-K-0165	Database:	MID_Regulatory

Project:	Carlsbad (NAD83)		
Map System:	US State Plane 1983	System Datum:	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Eddy County, NM (Grid North)		
Site Position:		Northing:	541,021.74 usft
From:	Lat/Long	Easting:	600,685.09 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	32° 29' 13.861 N
		Longitude:	104° 8' 27.087 W
		Grid Convergence:	0.10 °

Well: Lone Tree Draw "13" Staet Com #8H, Horizontal						
Well Position	+N-S	0.0 usft	Northing:	541,021.74 usft	Latitude:	32° 29' 13.861 N
	+E-W	0.0 usft	Easting:	600,685.09 usft	Longitude:	104° 8' 27.087 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	25.0 usft	Ground Level:	3,171.6 usft

Wellbore	VH - Job #320215-K-0165				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	2/27/2015	7.59	60.23	48,287

Design:	VH - Job #320215-K-0165				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/S	+E-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	4.96	

Survey Program	Date	3/4/2015		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
81.0	7,079.0	drop Gyro (VH - Job #320215-K-0165)	Keeper	Keeper Gyro

MD	Inc	Azi	TVD	N/S	E/W	Closure Azimuth	Closure Distance
(usft)	(°)	(grid north azim)	(usft)	(usft)	(usft)	(°)	(usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
81.0	0.40	173.94	81.0	-0.3	0.0	173.94	0.3
175.0	0.28	176.09	175.0	-0.8	0.1	174.53	0.8
267.0	0.25	8.69	267.0	-0.9	0.1	171.70	0.9
360.0	0.41	7.76	360.0	-0.3	0.2	148.77	0.4
455.0	0.44	3.64	455.0	0.4	0.3	36.27	0.5
546.0	0.48	5.28	546.0	1.1	0.3	16.63	1.1
638.0	0.56	8.35	638.0	1.9	0.4	12.55	2.0
726.5	0.63	9.69	726.5	2.8	0.6	11.44	2.9
821.0	0.78	2.96	821.0	4.0	0.7	9.87	4.0
918.5	0.78	357.14	918.5	5.3	0.7	7.45	5.4
1,013.0	1.03	2.62	1,013.0	6.8	0.7	5.89	6.8

Regulatory Report (Grid North)

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Lone Tree Draw 13" Staet Com #8H
Project:	Carlsbad (NAD83)	TVD Reference:	RKB @ 3196.6usft
Site:	Eddy County - NM (Grid North)	MD Reference:	RKB @ 3196.6usft
Well:	Lone Tree Draw 13" Staet Com #8H	North Reference:	Grid
Wellbore:	VH - Job #320215-K-0165	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #320215-K-0165	Database:	MID - Regulatory

Survey								
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,094.0	0.96	9.73	1,093.9	8.2	0.8	5.92	8.2	
1,188.5	0.86	31.57	1,188.4	9.6	1.4	8.05	9.7	
1,283.0	0.89	23.00	1,282.9	10.9	2.0	10.50	11.0	
1,377.5	0.90	352.48	1,377.4	12.3	2.2	10.17	12.5	
1,472.0	0.94	1.61	1,471.9	13.8	2.1	8.77	13.9	
1,566.5	0.98	17.01	1,566.4	15.3	2.4	8.84	15.5	
1,661.0	0.97	33.93	1,660.9	16.8	3.1	10.37	17.0	
1,755.5	1.11	8.57	1,755.4	18.3	3.7	11.26	18.7	
1,850.0	0.92	10.60	1,849.8	20.0	3.9	11.11	20.4	
1,944.0	1.15	11.04	1,943.8	21.7	4.2	11.09	22.1	
2,037.0	1.18	6.72	2,036.8	23.5	4.5	10.92	24.0	
2,131.5	1.16	30.68	2,131.3	25.3	5.1	11.48	25.8	
2,226.0	1.23	355.97	2,225.8	27.1	5.6	11.57	27.7	
2,320.5	1.37	16.94	2,320.2	29.2	5.8	11.25	29.8	
2,415.0	1.36	27.54	2,414.7	31.3	6.7	12.01	32.0	
2,509.5	1.39	351.63	2,509.2	33.4	7.0	11.84	34.2	
2,604.0	1.49	6.96	2,603.7	35.8	7.0	11.06	36.5	
2,697.0	1.53	12.29	2,696.6	38.2	7.4	10.97	38.9	
2,791.5	1.61	7.76	2,791.1	40.8	7.9	10.91	41.5	
2,886.0	1.59	10.31	2,885.6	43.4	8.3	10.79	44.1	
2,980.0	1.59	32.82	2,979.5	45.7	9.2	11.38	46.7	
3,070.0	1.54	3.96	3,069.5	48.0	10.0	11.73	49.0	
3,164.5	1.50	12.20	3,163.9	50.5	10.3	11.55	51.5	
3,259.0	1.57	15.43	3,258.4	52.9	10.9	11.66	54.0	
3,353.5	1.59	16.39	3,352.9	55.4	11.6	11.86	56.6	
3,448.0	1.55	17.80	3,447.3	57.9	12.4	12.08	59.2	
3,542.5	1.39	13.74	3,541.8	60.2	13.1	12.23	61.6	
3,637.0	1.38	311.40	3,636.3	62.1	12.5	11.36	63.3	
3,731.5	1.33	119.02	3,730.8	62.3	12.6	11.42	63.6	
3,826.0	1.33	358.34	3,825.3	62.9	13.5	12.13	64.3	
3,915.0	1.31	28.84	3,914.2	64.8	14.0	12.17	66.3	
4,009.5	1.24	43.24	4,008.7	66.5	15.2	12.87	68.2	
4,104.0	1.18	36.49	4,103.2	68.0	16.5	13.61	70.0	
4,198.5	1.08	125.02	4,197.7	68.3	17.8	14.59	70.6	
4,293.0	1.01	48.14	4,292.2	68.4	19.1	15.64	71.0	
4,387.5	0.99	83.31	4,386.7	69.0	20.6	16.59	72.0	
4,482.0	0.89	50.79	4,481.1	69.6	21.9	17.51	72.9	
4,576.5	0.91	339.97	4,575.6	70.7	22.3	17.47	74.1	
4,671.0	0.89	57.37	4,670.1	71.8	22.6	17.48	75.3	
4,765.5	0.89	37.38	4,764.6	72.8	23.7	18.02	76.6	
4,860.0	0.89	40.39	4,859.1	74.0	24.6	18.40	77.9	
4,954.0	0.86	34.68	4,953.1	75.1	25.5	18.74	79.3	
5,047.0	0.89	52.94	5,046.1	76.1	26.4	19.17	80.6	
5,141.5	0.81	20.45	5,140.6	77.2	27.3	19.46	81.8	

Regulatory Report (Grid North)

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Project:	Carlsbad (NAD83)	TVD Reference:	RKB @ 3196.6usft
Site:	Eddy County, NM (Grid North)	MD Reference:	RKB @ 3196.6usft
Well:	Lone Tree Draw "13" Staet Com #8H	North Reference:	Grid
Wellbore:	VH - Job #320215-K-0165	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #320215-K-0165	Database:	MID_Regulatory

Survey								
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
5,236.0	0.60	57.65	5,235.1	78.1	27.9	19.68	82.9	
5,330.0	0.49	6.41	5,329.1	78.7	28.4	19.82	83.7	
5,421.5	0.37	359.34	5,420.6	79.4	28.4	19.69	84.3	
5,516.0	0.34	339.02	5,515.1	80.0	28.3	19.50	84.8	
5,610.5	0.31	348.32	5,609.6	80.5	28.2	19.29	85.3	
5,705.0	0.45	358.05	5,704.1	81.1	28.1	19.11	85.8	
5,799.5	0.76	314.53	5,798.6	81.9	27.6	18.65	86.5	
5,894.0	1.05	288.04	5,893.0	82.6	26.4	17.70	86.7	
5,988.0	1.77	282.18	5,987.0	83.2	24.1	16.18	86.6	
6,082.5	2.23	268.27	6,081.5	83.4	20.9	14.04	86.0	
6,177.0	1.77	269.04	6,175.9	83.4	17.6	11.90	85.2	
6,271.0	1.56	261.09	6,269.9	83.1	14.9	10.13	84.5	
6,359.0	1.33	67.46	6,357.8	83.4	14.6	9.94	84.6	
6,458.5	1.44	239.83	6,457.3	83.2	14.6	9.96	84.4	
6,553.0	1.63	210.38	6,551.8	81.4	12.9	9.00	82.4	
6,647.5	1.69	211.67	6,646.3	79.1	11.5	8.26	79.9	
6,742.0	1.63	202.33	6,740.7	76.6	10.2	7.61	77.3	
6,836.5	1.64	202.56	6,835.2	74.1	9.2	7.08	74.7	
6,931.0	1.85	213.34	6,929.6	71.6	7.9	6.26	72.0	
7,022.0	1.98	195.89	7,020.6	68.9	6.6	5.49	69.2	
7,079.0	1.83	214.55	7,077.6	67.2	5.8	4.96	67.4	

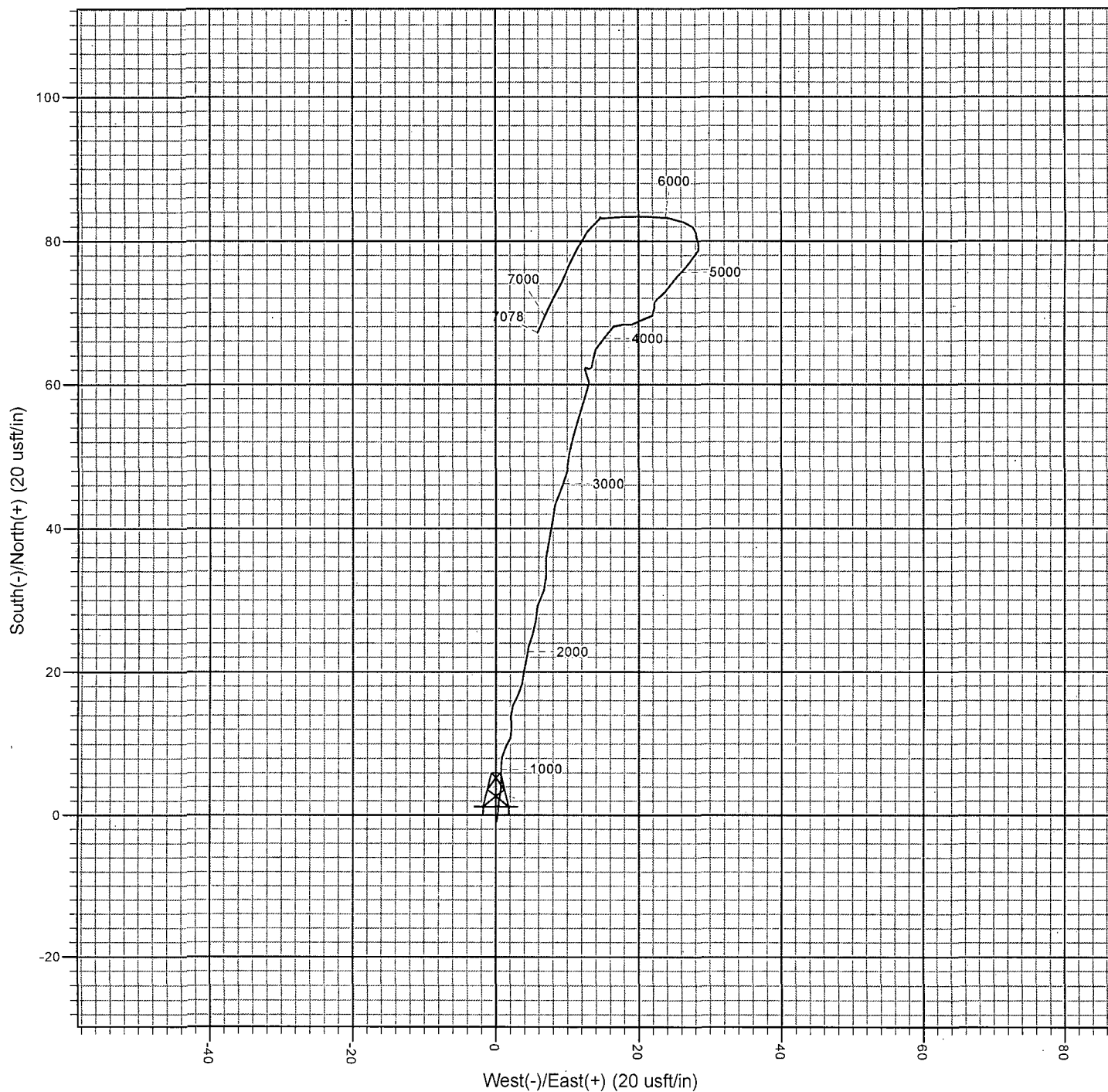
Checked By: _____ Approved By: _____ Date: _____



Project: Carlsbad (NAD83)
Eddy County, NM (Grid North)
Well: Lone Tree Draw "13" Staet Com #8H
Wellbore: VH - Job #320215-K-0165
Design: VH - Job #320215-K-0165

WELL DETAILS: Lone Tree Draw "13" Staet Com #8H
RKB @ 3196.6usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	541021.74	600685.09	32° 29' 13.861 N	104° 8' 27.087 W	



PROJECT DETAILS: Carlsbad (NAD83)	SITE DETAILS: Eddy County, NM (Grid North)
Geodetic System: US State Plane 1983	Site Centre Latitude: 32° 29' 13.861 N
Datum: North American Datum 1983	Longitude: 104° 8' 27.087 W
Ellipsoid: GRS 1980	Positional Uncertainty: 0.0
Zone: New Mexico Eastern Zone	Convergence: 0.10
System Datum: Ground Level	Local North: Grid



Directional Survey

Sub-Division DELAWARE BASIN	County EDDY	Field Name BURTON FLAT	Region DELAWARE SLOPE WEST	State/Province NM
Surface Legal Location Sec. 13 T21S R27E	API/UWI 3001541738	Latitude (°) 32° 29' 13.434" N	Longitude (°) 104° 8' 25.275" W	Ground Elev M... 3,171.60
				Orig KB Elev (ft) 3,196.60
				Tubing Head Elevation (ft)

Wellbores			
Wellbore Name OH	Parent Wellbore OH	SAP Well ID 38025	Vertical Section Direction (°) 179.82

Kick Offs & Key Depths

Date 3/1/2015	Type Kick Off	Top Depth (ftKB) 7,200.0
Actual Deviation Survey GYRO / MWD, Proposed? No	Definitive? Yes	Proposed? No
	Proposed Deviation Survey	

Deviation Survey

Date 2/28/2015		Description GYRO / MWD			
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

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
2/28/2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	GYRO	SCIENTIFIC DRILLING
2/28/2015	81.00	0.40	173.94	81.00	0.28	-0.28	0.03	0.49	GYRO	SCIENTIFIC DRILLING
2/28/2015	175.00	0.28	176.09	175.00	0.84	-0.84	0.08	0.13	GYRO	SCIENTIFIC DRILLING
2/28/2015	267.00	0.25	8.69	267.00	0.86	-0.86	0.13	0.57	GYRO	SCIENTIFIC DRILLING
2/28/2015	360.00	0.41	7.76	360.00	0.33	-0.33	0.20	0.17	GYRO	SCIENTIFIC DRILLING
2/28/2015	455.00	0.44	3.64	454.99	-0.37	0.37	0.27	0.05	GYRO	SCIENTIFIC DRILLING
2/28/2015	546.00	0.48	5.28	545.99	-1.10	1.10	0.33	0.05	GYRO	SCIENTIFIC DRILLING
2/28/2015	638.00	0.56	8.35	637.99	-1.92	1.93	0.43	0.09	GYRO	SCIENTIFIC DRILLING
2/28/2015	726.50	0.63	9.69	726.48	-2.83	2.83	0.57	0.08	GYRO	SCIENTIFIC DRILLING
2/28/2015	821.00	0.78	2.96	820.97	-3.99	3.99	0.69	0.18	GYRO	SCIENTIFIC DRILLING
2/28/2015	918.50	0.78	357.14	918.47	-5.31	5.31	0.69	0.08	GYRO	SCIENTIFIC DRILLING
2/28/2015	1,013.00	1.03	2.62	1,012.95	-6.80	6.80	0.70	0.28	GYRO	SCIENTIFIC DRILLING
2/28/2015	1,094.00	0.96	9.73	1,093.94	-8.20	8.20	0.85	0.18	GYRO	SCIENTIFIC DRILLING
2/28/2015	1,188.50	0.86	31.57	1,188.43	-9.58	9.58	1.35	0.38	GYRO	SCIENTIFIC DRILLING
2/28/2015	1,283.00	0.89	23.00	1,282.92	-10.86	10.86	2.01	0.14	GYRO	SCIENTIFIC DRILLING
2/28/2015	1,377.50	0.90	352.48	1,377.41	-12.27	12.28	2.20	0.50	GYRO	SCIENTIFIC DRILLING
2/28/2015	1,472.00	0.94	1.61	1,471.90	-13.78	13.79	2.13	0.16	GYRO	SCIENTIFIC DRILLING
2/28/2015	1,566.50	0.98	17.01	1,566.38	-15.33	15.33	2.39	0.28	GYRO	SCIENTIFIC DRILLING
2/28/2015	1,661.00	0.97	33.93	1,660.87	-16.76	16.77	3.07	0.30	GYRO	SCIENTIFIC DRILLING
2/28/2015	1,755.50	1.11	8.57	1,755.35	-18.33	18.34	3.65	0.50	GYRO	SCIENTIFIC DRILLING
2/28/2015	1,850.00	0.92	10.60	1,849.84	-19.98	19.99	3.93	0.20	GYRO	SCIENTIFIC DRILLING
2/28/2015	1,944.00	1.15	11.04	1,943.82	-21.64	21.66	4.25	0.24	GYRO	SCIENTIFIC DRILLING
2/28/2015	2,037.00	1.18	6.72	2,036.80	-23.51	23.52	4.54	0.10	GYRO	SCIENTIFIC DRILLING
2/28/2015	2,131.50	1.16	30.68	2,131.29	-25.30	25.31	5.14	0.51	GYRO	SCIENTIFIC DRILLING
2/28/2015	2,226.00	1.23	355.97	2,225.77	-27.13	27.15	5.56	0.76	GYRO	SCIENTIFIC DRILLING
2/28/2015	2,320.50	1.37	16.94	2,320.24	-29.22	29.24	5.81	0.52	GYRO	SCIENTIFIC DRILLING
2/28/2015	2,415.00	1.36	27.54	2,414.72	-31.29	31.32	6.66	0.27	GYRO	SCIENTIFIC DRILLING
2/28/2015	2,509.50	1.39	351.63	2,509.19	-33.42	33.44	7.01	0.90	GYRO	SCIENTIFIC DRILLING
2/28/2015	2,604.00	1.49	6.96	2,603.66	-35.78	35.80	7.00	0.42	GYRO	SCIENTIFIC DRILLING
2/28/2015	2,697.00	1.53	12.29	2,696.63	-38.19	38.21	7.41	0.16	GYRO	SCIENTIFIC DRILLING
2/28/2015	2,791.50	1.61	7.76	2,791.09	-40.73	40.76	7.85	0.16	GYRO	SCIENTIFIC DRILLING
2/28/2015	2,886.00	1.59	10.31	2,885.56	-43.34	43.36	8.27	0.08	GYRO	SCIENTIFIC DRILLING
2/28/2015	2,980.00	1.59	32.82	2,979.52	-45.71	45.74	9.21	0.66	GYRO	SCIENTIFIC DRILLING
2/28/2015	3,070.00	1.54	3.96	3,069.49	-47.97	48.00	9.97	0.87	GYRO	SCIENTIFIC DRILLING
2/28/2015	3,164.50	1.50	12.20	3,163.96	-50.44	50.47	10.32	0.23	GYRO	SCIENTIFIC DRILLING
2/28/2015	3,259.00	1.57	15.43	3,258.42	-52.90	52.93	10.92	0.12	GYRO	SCIENTIFIC DRILLING
2/28/2015	3,353.50	1.59	16.39	3,352.89	-55.40	55.44	11.64	0.04	GYRO	SCIENTIFIC DRILLING
2/28/2015	3,448.00	1.55	17.80	3,447.35	-57.87	57.91	12.40	0.06	GYRO	SCIENTIFIC DRILLING
2/28/2015	3,542.50	1.39	13.74	3,541.82	-60.20	60.24	13.06	0.20	GYRO	SCIENTIFIC DRILLING
2/28/2015	3,637.00	1.38	311.40	3,636.30	-62.07	62.11	12.48	1.52	GYRO	SCIENTIFIC DRILLING
2/28/2015	3,731.50	1.33	119.02	3,730.79	-62.29	62.33	12.59	2.85	GYRO	SCIENTIFIC DRILLING
2/28/2015	3,826.00	1.33	358.34	3,825.27	-62.85	62.89	13.51	2.45	GYRO	SCIENTIFIC DRILLING
2/28/2015	3,915.00	1.31	28.84	3,914.25	-64.77	64.82	13.97	0.78	GYRO	SCIENTIFIC DRILLING
2/28/2015	4,009.50	1.24	43.24	4,008.73	-66.46	66.51	15.19	0.35	GYRO	SCIENTIFIC DRILLING
2/28/2015	4,104.00	1.18	36.49	4,103.21	-67.98	68.03	16.47	0.16	GYRO	SCIENTIFIC DRILLING
2/28/2015	4,198.50	1.08	125.02	4,197.70	-68.25	68.31	17.78	1.67	GYRO	SCIENTIFIC DRILLING
2/28/2015	4,293.00	1.01	48.14	4,292.18	-68.29	68.35	19.13	1.38	GYRO	SCIENTIFIC DRILLING



Directional Survey

Sub-Division DELAWARE BASIN	County EDDY	Field Name BURTON FLAT	Region DELAWARE SLOPE WEST	State/Province NM
Surface Legal Location Sec. 13 T21S R27E	API/UWI 3001541738	Latitude (°) 32° 29' 13.434" N	Longitude (°) 104° 8' 25.275" W	Ground Elev M... 3,171.60
				Orig KB Elev (ft) 3,196.60
				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
2/28/2015	4,387.50	0.99	83.31	4,386.67	-68.94	69.00	20.56	0.64	GYRO	SCIENTIFIC DRILLING
2/28/2015	4,482.00	0.89	50.79	4,481.16	-69.49	69.56	21.94	0.57	GYRO	SCIENTIFIC DRILLING
2/28/2015	4,576.50	0.91	339.97	4,575.65	-70.66	70.73	22.25	1.10	GYRO	SCIENTIFIC DRILLING
2/28/2015	4,671.00	0.89	57.37	4,670.14	-71.76	71.83	22.62	1.19	GYRO	SCIENTIFIC DRILLING
2/28/2015	4,765.50	0.89	37.38	4,764.63	-72.73	72.81	23.68	0.33	GYRO	SCIENTIFIC DRILLING
2/28/2015	4,860.00	0.89	40.39	4,859.12	-73.87	73.95	24.60	0.05	GYRO	SCIENTIFIC DRILLING
2/28/2015	4,954.00	0.86	34.68	4,953.11	-75.01	75.09	25.47	0.10	GYRO	SCIENTIFIC DRILLING
2/28/2015	5,047.00	0.89	52.94	5,046.10	-76.01	76.10	26.45	0.30	GYRO	SCIENTIFIC DRILLING
2/28/2015	5,141.50	0.81	20.45	5,140.59	-77.08	77.17	27.27	0.51	GYRO	SCIENTIFIC DRILLING
2/28/2015	5,236.00	0.60	57.65	5,235.08	-77.97	78.06	27.92	0.52	GYRO	SCIENTIFIC DRILLING
2/28/2015	5,330.00	0.49	6.41	5,329.08	-78.63	78.72	28.38	0.51	GYRO	SCIENTIFIC DRILLING
2/28/2015	5,421.50	0.37	359.34	5,420.57	-79.31	79.40	28.42	0.14	GYRO	SCIENTIFIC DRILLING
2/28/2015	5,516.00	0.34	339.02	5,515.07	-79.88	79.97	28.32	0.14	GYRO	SCIENTIFIC DRILLING
2/28/2015	5,610.50	0.31	348.32	5,609.57	-80.39	80.48	28.16	0.06	GYRO	SCIENTIFIC DRILLING
2/28/2015	5,705.00	0.45	358.05	5,704.07	-81.01	81.10	28.10	0.16	GYRO	SCIENTIFIC DRILLING
2/28/2015	5,799.50	0.76	314.53	5,798.56	-81.83	81.91	27.64	0.56	GYRO	SCIENTIFIC DRILLING
2/28/2015	5,894.00	1.05	288.04	5,893.05	-82.54	82.62	26.37	0.53	GYRO	SCIENTIFIC DRILLING
2/28/2015	5,988.00	1.77	282.18	5,987.02	-83.12	83.19	24.13	0.78	GYRO	SCIENTIFIC DRILLING
2/28/2015	6,082.00	2.23	268.27	6,080.97	-83.38	83.45	20.88	0.71	GYRO	SCIENTIFIC DRILLING
2/28/2015	6,177.00	1.77	269.04	6,175.91	-83.31	83.37	17.57	0.49	GYRO	SCIENTIFIC DRILLING
2/28/2015	6,271.00	1.56	261.09	6,269.87	-83.10	83.14	14.85	0.33	GYRO	SCIENTIFIC DRILLING
2/28/2015	6,359.00	1.33	67.46	6,357.86	-83.30	83.35	14.61	3.26	GYRO	SCIENTIFIC DRILLING
2/28/2015	6,458.50	1.44	239.83	6,457.35	-83.12	83.16	14.60	2.78	GYRO	SCIENTIFIC DRILLING
2/28/2015	6,553.00	1.63	210.38	6,551.82	-81.37	81.41	12.89	0.85	GYRO	SCIENTIFIC DRILLING
2/28/2015	6,647.50	1.69	211.67	6,646.28	-79.02	79.06	11.48	0.07	GYRO	SCIENTIFIC DRILLING
2/28/2015	6,742.00	1.63	202.33	6,740.74	-76.60	76.63	10.24	0.29	GYRO	SCIENTIFIC DRILLING
2/28/2015	6,836.50	1.64	202.56	6,835.20	-74.11	74.14	9.21	0.01	GYRO	SCIENTIFIC DRILLING
2/28/2015	6,931.00	1.85	213.34	6,929.65	-71.59	71.62	7.85	0.41	GYRO	SCIENTIFIC DRILLING
2/28/2015	7,022.00	1.98	195.89	7,020.60	-68.86	68.88	6.62	0.65	GYRO	SCIENTIFIC DRILLING
2/28/2015	7,079.00	1.83	214.55	7,077.57	-67.16	67.18	5.83	1.11	GYRO	SCIENTIFIC DRILLING
3/1/2015	7,138.00	1.78	191.14	7,136.55	-65.49	65.51	5.12	1.24	MWD	WEATHERFORD
3/1/2015	7,203.00	3.64	188.87	7,201.47	-62.46	62.48	4.61	2.87	MWD	WEATHERFORD
3/2/2015	7,234.00	7.05	188.78	7,232.33	-59.61	59.62	4.16	11.00	MWD	WEATHERFORD
3/2/2015	7,266.00	11.01	188.61	7,263.93	-54.65	54.66	3.41	12.38	MWD	WEATHERFORD
3/2/2015	7,297.00	15.52	188.66	7,294.09	-47.62	47.63	2.34	14.55	MWD	WEATHERFORD
3/2/2015	7,329.00	19.05	186.17	7,324.64	-38.20	38.20	1.13	11.27	MWD	WEATHERFORD
3/2/2015	7,360.00	22.53	182.98	7,353.62	-27.24	27.24	0.28	11.80	MWD	WEATHERFORD
3/2/2015	7,392.00	25.98	182.22	7,382.79	-14.11	14.11	-0.31	10.83	MWD	WEATHERFORD
3/2/2015	7,423.00	29.43	182.50	7,410.23	0.29	-0.29	-0.91	11.14	MWD	WEATHERFORD
3/2/2015	7,455.00	32.33	182.92	7,437.69	16.69	-16.69	-1.69	9.09	MWD	WEATHERFORD
3/2/2015	7,486.00	35.08	183.37	7,463.48	33.86	-33.87	-2.63	8.91	MWD	WEATHERFORD
3/2/2015	7,517.00	37.60	183.70	7,488.45	52.19	-52.20	-3.77	8.15	MWD	WEATHERFORD
3/2/2015	7,549.00	40.04	184.74	7,513.38	72.19	-72.21	-5.25	7.89	MWD	WEATHERFORD
3/2/2015	7,581.00	42.42	184.32	7,537.44	93.21	-93.23	-6.91	7.49	MWD	WEATHERFORD
3/2/2015	7,612.00	45.20	182.72	7,559.81	114.62	-114.65	-8.22	9.65	MWD	WEATHERFORD
3/2/2015	7,644.00	47.98	181.93	7,581.80	137.84	-137.87	-9.16	8.87	MWD	WEATHERFORD
3/2/2015	7,675.00	50.78	181.35	7,601.98	161.36	-161.39	-9.83	9.14	MWD	WEATHERFORD
3/2/2015	7,706.00	53.20	180.56	7,621.07	185.78	-185.81	-10.24	8.06	MWD	WEATHERFORD
3/2/2015	7,738.00	55.42	180.13	7,639.74	211.76	-211.80	-10.39	7.02	MWD	WEATHERFORD
3/2/2015	7,769.00	58.03	179.63	7,656.75	237.68	-237.71	-10.33	8.53	MWD	WEATHERFORD
3/2/2015	7,801.00	60.61	179.40	7,673.07	265.20	-265.23	-10.10	8.09	MWD	WEATHERFORD
3/2/2015	7,832.00	63.16	179.41	7,687.68	292.54	-292.57	-9.82	8.23	MWD	WEATHERFORD
3/2/2015	7,863.00	65.79	179.65	7,701.04	320.51	-320.54	-9.59	8.51	MWD	WEATHERFORD
3/2/2015	7,895.00	68.34	179.43	7,713.51	349.97	-350.01	-9.35	7.99	MWD	WEATHERFORD
3/3/2015	7,926.00	70.75	179.05	7,724.34	379.02	-379.05	-8.97	7.86	MWD	WEATHERFORD
3/3/2015	7,957.00	73.03	179.74	7,733.97	408.48	-408.51	-8.66	7.65	MWD	WEATHERFORD
3/3/2015	7,989.00	75.36	179.98	7,742.69	439.27	-439.29	-8.58	7.32	MWD	WEATHERFORD
3/3/2015	8,020.00	78.47	179.71	7,749.71	469.46	-469.49	-8.50	10.07	MWD	WEATHERFORD



Directional Survey

Sub-Division DELAWARE BASIN	County EDDY	Field Name BURTON FLAT	Region DELAWARE SLOPE WEST	State/Province NM
Surface Legal Location Sec. 13 T21S R27E	API/UWI 3001541738	Latitude (°) 32° 29' 13.434" N	Longitude (°) 104° 8' 25.275" W	Ground Elev M... 3,171.60
				Orig KB Elev (ft) 3,196.60
				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
3/3/2015	8,047.00	80.87	179.42	7,754.55	496.02	-496.05	-8.30	8.95	MWD	WEATHERFORD
3/3/2015	8,078.00	83.84	178.79	7,758.67	526.74	-526.76	-7.82	9.79	MWD	WEATHERFORD
3/3/2015	8,110.00	85.38	178.37	7,761.68	558.59	-558.61	-7.03	4.99	MWD	WEATHERFORD
3/3/2015	8,141.00	87.27	177.85	7,763.66	589.51	-589.53	-6.01	6.32	MWD	WEATHERFORD
3/3/2015	8,172.00	88.88	177.75	7,764.71	620.47	-620.49	-4.82	5.20	MWD	WEATHERFORD
3/3/2015	8,204.00	89.65	178.07	7,765.12	652.45	-652.46	-3.65	2.61	MWD	WEATHERFORD
3/3/2015	8,266.00	90.14	178.08	7,765.23	714.42	-714.43	-1.57	0.79	MWD	WEATHERFORD
3/3/2015	8,360.00	90.91	178.34	7,764.37	808.38	-808.38	1.37	0.86	MWD	WEATHERFORD
3/3/2015	8,454.00	91.26	178.86	7,762.59	902.34	-902.33	3.67	0.67	MWD	WEATHERFORD
3/3/2015	8,548.00	90.28	179.23	7,761.33	996.32	-996.31	5.23	1.11	MWD	WEATHERFORD
3/4/2015	8,642.00	89.86	179.15	7,761.21	1,090.31	-1,090.30	6.56	0.45	MWD	WEATHERFORD
3/4/2015	8,736.00	90.00	179.96	7,761.33	1,184.31	-1,184.29	7.29	0.87	MWD	WEATHERFORD
3/4/2015	8,830.00	90.14	180.25	7,761.21	1,278.31	-1,278.29	7.12	0.34	MWD	WEATHERFORD
3/4/2015	8,924.00	90.00	180.32	7,761.10	1,372.31	-1,372.29	6.65	0.17	MWD	WEATHERFORD
3/4/2015	9,018.00	90.35	180.95	7,760.81	1,466.30	-1,466.29	5.61	0.77	MWD	WEATHERFORD
3/4/2015	9,112.00	90.42	180.86	7,760.18	1,560.28	-1,560.27	4.12	0.12	MWD	WEATHERFORD
3/4/2015	9,206.00	89.09	179.74	7,760.58	1,654.27	-1,654.27	3.63	1.85	MWD	WEATHERFORD
3/4/2015	9,300.00	89.30	179.70	7,761.90	1,748.26	-1,748.26	4.09	0.23	MWD	WEATHERFORD
3/4/2015	9,394.00	90.21	180.38	7,762.30	1,842.26	-1,842.25	4.03	1.21	MWD	WEATHERFORD
3/4/2015	9,488.00	89.79	179.84	7,762.30	1,936.26	-1,936.25	3.85	0.73	MWD	WEATHERFORD
3/4/2015	9,582.00	88.53	179.43	7,763.68	2,030.24	-2,030.24	4.44	1.41	MWD	WEATHERFORD
3/4/2015	9,677.00	88.53	179.51	7,766.12	2,125.21	-2,125.20	5.32	0.08	MWD	WEATHERFORD
3/4/2015	9,771.00	88.39	179.79	7,768.64	2,219.18	-2,219.17	5.90	0.33	MWD	WEATHERFORD
3/4/2015	9,865.00	88.32	179.91	7,771.34	2,313.14	-2,313.13	6.14	0.15	MWD	WEATHERFORD
3/4/2015	9,959.00	88.60	180.05	7,773.87	2,407.10	-2,407.09	6.18	0.33	MWD	WEATHERFORD
3/4/2015	10,053.00	89.16	180.95	7,775.71	2,501.08	-2,501.07	5.36	1.13	MWD	WEATHERFORD
3/4/2015	10,147.00	90.07	181.78	7,776.34	2,595.04	-2,595.04	3.12	1.31	MWD	WEATHERFORD
3/4/2015	10,242.00	89.02	181.53	7,777.09	2,689.99	-2,690.00	0.37	1.14	MWD	WEATHERFORD
3/4/2015	10,336.00	87.76	181.51	7,779.73	2,783.90	-2,783.93	-2.12	1.34	MWD	WEATHERFORD
3/4/2015	10,430.00	87.41	180.72	7,783.69	2,877.80	-2,877.82	-3.95	0.92	MWD	WEATHERFORD
3/4/2015	10,525.00	87.34	179.99	7,788.04	2,972.69	-2,972.72	-4.54	0.77	MWD	WEATHERFORD
3/5/2015	10,619.00	87.27	179.49	7,792.46	3,066.59	-3,066.62	-4.11	0.54	MWD	WEATHERFORD
3/5/2015	10,714.00	88.32	179.75	7,796.12	3,161.52	-3,161.54	-3.48	1.14	MWD	WEATHERFORD
3/5/2015	10,808.00	88.95	180.12	7,798.36	3,255.49	-3,255.51	-3.37	0.78	MWD	WEATHERFORD
3/5/2015	10,902.00	88.18	179.61	7,800.71	3,349.46	-3,349.48	-3.15	0.98	MWD	WEATHERFORD
3/5/2015	10,996.00	87.76	179.65	7,804.04	3,443.40	-3,443.42	-2.55	0.45	MWD	WEATHERFORD
3/5/2015	11,090.00	88.04	180.32	7,807.49	3,537.33	-3,537.36	-2.52	0.77	MWD	WEATHERFORD
3/5/2015	11,185.00	87.90	180.75	7,810.85	3,632.27	-3,632.29	-3.41	0.48	MWD	WEATHERFORD
3/5/2015	11,279.00	86.99	180.28	7,815.04	3,726.16	-3,726.20	-4.25	1.09	MWD	WEATHERFORD
3/5/2015	11,373.00	87.41	180.07	7,819.63	3,820.05	-3,820.08	-4.54	0.50	MWD	WEATHERFORD
3/5/2015	11,467.00	88.67	179.63	7,822.85	3,913.99	-3,914.03	-4.29	1.42	MWD	WEATHERFORD
3/5/2015	11,561.00	91.61	178.61	7,822.62	4,007.97	-4,008.00	-2.85	3.31	MWD	WEATHERFORD
3/5/2015	11,655.00	93.92	178.52	7,818.09	4,101.84	-4,101.86	-0.50	2.46	MWD	WEATHERFORD
3/6/2015	11,749.00	95.04	179.11	7,810.74	4,195.53	-4,195.55	1.44	1.35	MWD	WEATHERFORD
3/6/2015	11,843.00	94.83	179.24	7,802.66	4,289.18	-4,289.19	2.79	0.26	MWD	WEATHERFORD
3/6/2015	11,937.00	94.76	179.46	7,794.80	4,382.85	-4,382.86	3.85	0.24	MWD	WEATHERFORD
3/6/2015	12,031.00	94.29	178.64	7,787.38	4,476.54	-4,476.55	5.41	1.00	MWD	WEATHERFORD
3/6/2015	12,125.00	94.55	179.99	7,780.14	4,570.26	-4,570.26	6.53	1.46	MWD	WEATHERFORD
3/6/2015	12,219.00	94.90	180.25	7,772.39	4,663.94	-4,663.94	6.33	0.46	MWD	WEATHERFORD
3/6/2015	12,313.00	94.13	179.48	7,765.00	4,757.64	-4,757.65	6.55	1.16	MWD	WEATHERFORD
3/6/2015	12,326.00	94.06	179.30	7,764.07	4,770.61	-4,770.61	6.69	1.48	MWD	WEATHERFORD