

Results of Directional Survey

API number:	30-025-41011	DD
OGRID:		Operator: CONOCOPHILLIPS COMPANY
		Property: RUBY FEDERAL # 15

surface	ULSTR:	J	17	T 17S	R 32E
				1770 FSL	2235 FEL

BH Loc	ULSTR:	K	17	T 17S	R 32E
7028	MD	6960.2	TVD	1668 FSL	2433 FWL
					2847 FEL

Top Perf/OH	ULSTR:	K	17	T 17S	R 32E
5462	MD	5394.5	TVD	1641 FSL	2437 FWL
					2843 FEL
Bot Perf/OH	ULSTR:	K	17	T 17S	R 32E
6725	MD	6657.3	TVD	1662 FSL	2434 FWL
					2846 FEL

	MD	N/S	E/W	VD
	5380	-129.11	-607.69	5312.47
TOP PERFS/OH	5462	-128.55	-608.33	5394.46
	5469	-128.50	-608.39	5401.46
	6724	-108.16	-610.99	6656.29
BOT PERFS/OH	6725	-108.14	-610.99	6657.29
	6768	-107.32	-611.12	6700.28

NEXT TO LAST	6974	-103.15	-612.21	6906.24
LAST READING	7028	-102.05	-612.46	6960.22
TD	7028	-102.05	-612.46	6960.22

Surface Location	1770	FS	2235	FE
Projected BHL	1668	FS	2847	FE
Location of				
Top Perfs/OH	1641	FS	2843	FE
Bottom Perfs/OH	1662	FS	2846	FE

SUMMARY of Subsurface Locations

Surface Location	J-17-17S-32E	1770	FS	2235	FE	Vert. Depth
Top Perfs/OH	K-17-17S-32E	1641	FS	2843	FE	5394.46
Bottom Perfs/OH	K-17-17S-32E	1662	FS	2846	FE	6657.29
Projected TD	K-17-17S-32E	1668	FS	2847	FE	6960.22

DEC 02 2013

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OCT 03 2013

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1407 Northpark Dr.
Kingwood, TX 77339
Cell: (281) 851-8112
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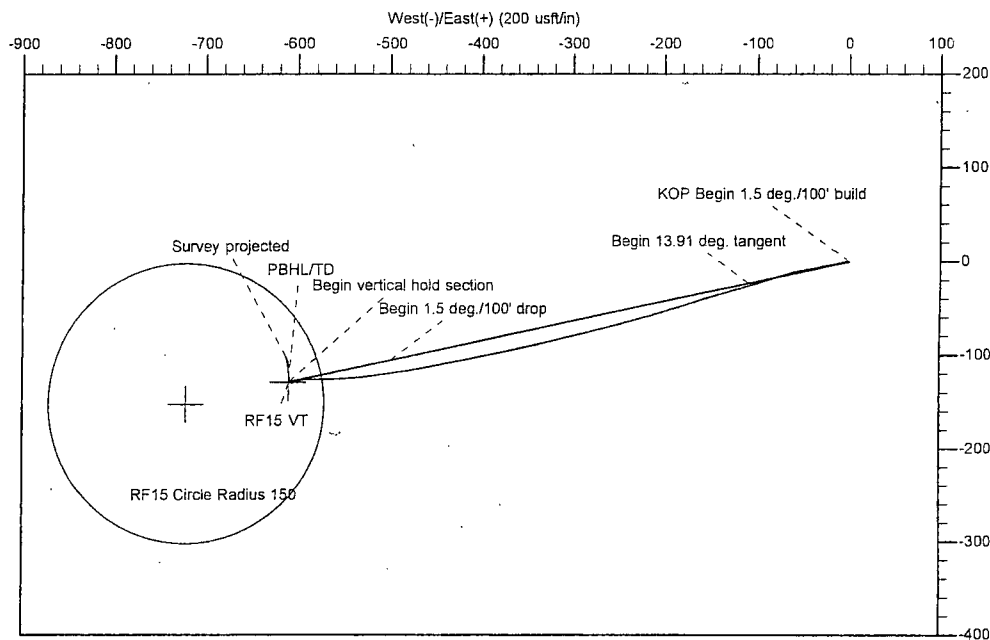
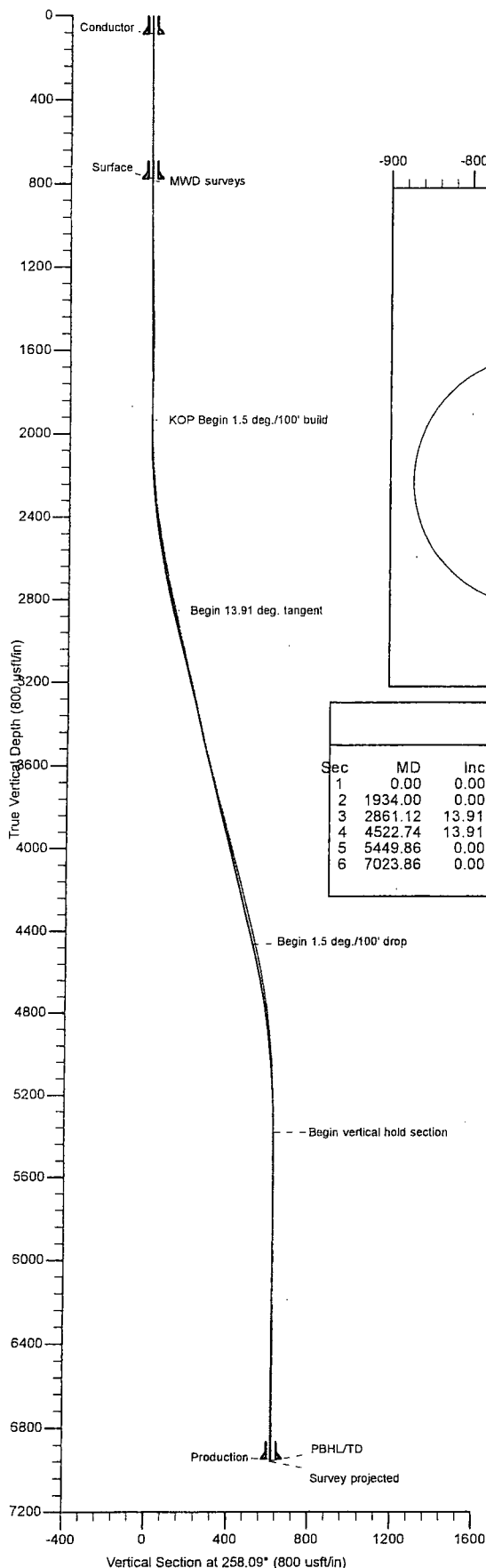
BlueStar MWD, LP performed a MWD survey for ConocoPhillips' Ruby Federal 15, located in Lea County, NM. The API number is: 30-025-41011. The surveys were taken from 787 MD to 6974 MD and ranged over the dates from 23-June-13 to 29-June-13 and are certified as being true and correct.

A handwritten signature in cursive script, appearing to read "Greg Nazzal".

Certification by Greg Nazzal
President



ConocoPhillips
Lea County, New Mexico
Ruby Federal
Ruby Federal 15
Surveys Original Hole
PD822



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1934.00	0.00	0.00	1934.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 1.5 deg./100' build
3	2861.12	13.91	258.09	2852.04	-23.10	-109.55	1.50	258.09	111.96	Begin 13.91 deg. tangent
4	4522.74	13.91	258.09	4464.96	-105.52	-500.32	0.00	0.00	511.32	Begin 1.5 deg./100' drop
5	5449.86	0.00	0.00	5383.00	-128.62	-609.87	1.50	180.00	623.29	Begin vertical hold section
6	7023.86	0.00	0.00	6957.00	-128.62	-609.87	0.00	0.00	623.29	PBHL/TD

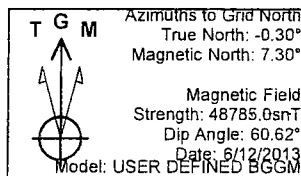
ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
787.00	787.00	0.00	0.00	0.00	0.00	0.00	0.00	MWD surveys
6960.22	7028.00	1.20	347.40	-102.05	-612.46	620.33	664.42	Survey projected

RKB Elevation: RKB=4008+13 @ 4021.00usft (PD822)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	666881.20	667871.49	32° 49' 55.738009 N	103° 47' 12.527775 W

US State Plane 1927 (Exact solution)
NAD 1927 (NADCON CONUS)
Clarke 1866
New Mexico East 3001
Mean Sea Level





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ConocoPhillips

Lea County, New Mexico

Ruby Federal

Ruby Federal 15

Original Hole

Design: Surveys Original Hole

Standard Survey Report

18 July, 2013



Company:	ConocoPhillips	Local Co-ordinate Reference:	Well Ruby Federal 15
Project:	Lea County, New Mexico	TVD Reference:	RKB=4008+13 @ 4021.00usft (PD822)
Site:	Ruby Federal	MD Reference:	RKB=4008+13 @ 4021.00usft (PD822)
Well:	Ruby Federal 15	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

Project:	Lea County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Ruby Federal				
Site Position:		Northing:	665,437.81 usft	Latitude:	32° 49' 41.500374 N
From:	Map	Easting:	666,996.38 usft	Longitude:	103° 47' 22.870781 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.29 °

Well	Ruby Federal 15					
Well Position	+N-S	0.00 usft	Northing:	666,881.20 usft	Latitude:	32° 49' 55.738010 N
	+E-W	0.00 usft	Easting:	667,871.49 usft	Longitude:	103° 47' 12.527775 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,008.00 usft	

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	6/12/2013	7.60	60.62	48,785

Design:		Surveys Original Hole			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.00	0.00	0.00	258.09	

Survey Program		Date	7/18/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
787.00	7,028.00	MWD (Original Hole)	MWD	MWD - Standard	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
787.00	0.00	0.00	787.00	0.00	0.00	0.00	0.00	0.00	0.00
MWD surveys									
918.00	0.50	247.20	918.00	-0.22	-0.53	0.56	0.38	0.38	0.00
1,038.00	0.50	266.30	1,037.99	-0.46	-1.53	1.59	0.14	0.00	15.92
1,127.00	0.70	269.60	1,126.99	-0.49	-2.46	2.51	0.23	0.22	3.71
1,217.00	0.80	274.20	1,216.98	-0.44	-3.64	3.65	0.13	0.11	5.11
1,307.00	0.80	258.90	1,306.97	-0.52	-4.88	4.88	0.24	0.00	-17.00
1,396.00	0.70	261.10	1,395.96	-0.72	-6.03	6.05	0.12	-0.11	2.47
1,486.00	0.60	253.50	1,485.96	-0.94	-7.02	7.07	0.15	-0.11	-8.44
1,576.00	1.10	71.20	1,575.96	-0.80	-6.66	6.68	1.89	0.56	197.44

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well Ruby Federal 15
Project:	Lea County, New Mexico	TVD Reference:	RKB=4008+13 @ 4021.00usft (PD822)
Site:	Ruby Federal	MD Reference:	RKB=4008+13 @ 4021.00usft (PD822)
Well:	Ruby Federal 15	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,665.00	1.60	70.10	1,664.93	-0.10	-4.68	4.60	0.56	0.56	-1.24
1,800.00	0.80	63.50	1,799.90	0.96	-2.07	1.82	0.60	-0.59	-4.89
1,889.00	0.50	237.00	1,888.90	1.03	-1.84	1.58	1.46	-0.34	194.94
1,979.00	1.60	233.60	1,978.88	0.07	-3.18	3.09	1.22	1.22	-3.78
2,069.00	2.50	260.60	2,068.82	-1.00	-6.12	6.20	1.44	1.00	30.00
2,158.00	4.00	261.10	2,157.68	-1.79	-11.11	11.24	1.69	1.69	0.56
2,248.00	5.30	258.90	2,247.38	-3.08	-18.29	18.53	1.46	1.44	-2.44
2,337.00	6.70	258.20	2,335.89	-4.93	-27.40	27.83	1.58	1.57	-0.79
2,427.00	7.90	261.00	2,425.16	-6.98	-38.65	39.26	1.39	1.33	3.11
2,517.00	9.20	259.70	2,514.16	-9.23	-51.84	52.63	1.46	1.44	-1.44
2,606.00	10.80	253.90	2,601.81	-12.81	-66.85	68.06	2.12	1.80	-6.52
2,696.00	12.30	253.00	2,689.98	-17.96	-84.12	86.02	1.68	1.67	-1.00
2,785.00	12.60	253.80	2,776.89	-23.44	-102.51	105.14	0.39	0.34	0.90
2,875.00	13.50	253.30	2,864.56	-29.19	-122.00	125.40	1.01	1.00	-0.56
2,965.00	12.40	254.00	2,952.27	-34.88	-141.35	145.50	1.23	-1.22	0.78
3,054.00	12.50	252.60	3,039.18	-40.39	-159.73	164.62	0.36	0.11	-1.57
3,144.00	13.50	251.50	3,126.87	-46.64	-178.98	184.76	1.14	1.11	-1.22
3,233.00	13.10	254.00	3,213.48	-52.71	-198.53	205.14	0.79	-0.45	2.81
3,323.00	13.60	253.50	3,301.05	-58.53	-218.48	225.86	0.57	0.56	-0.56
3,413.00	13.90	255.40	3,388.47	-64.26	-239.09	247.20	0.60	0.33	2.11
3,498.00	13.10	256.70	3,471.12	-69.05	-258.34	267.03	1.01	-0.94	1.53
3,588.00	14.50	256.40	3,558.52	-74.04	-279.22	288.49	1.56	1.56	-0.33
3,677.00	14.80	256.80	3,644.63	-79.26	-301.12	310.99	0.36	0.34	0.45
3,767.00	15.10	256.60	3,731.58	-84.60	-323.71	334.20	0.34	0.33	-0.22
3,856.00	14.80	257.20	3,817.57	-89.81	-346.07	357.16	0.38	-0.34	0.67
3,946.00	14.80	258.50	3,904.59	-94.65	-368.55	380.15	0.37	0.00	1.44
4,036.00	14.90	258.50	3,991.58	-99.24	-391.15	403.21	0.11	0.11	0.00
4,125.00	14.90	259.30	4,077.59	-103.65	-413.61	426.09	0.23	0.00	0.90
4,215.00	14.70	258.80	4,164.60	-108.02	-436.18	449.08	0.26	-0.22	-0.56
4,260.00	15.00	259.40	4,208.10	-110.20	-447.50	460.61	0.75	0.67	1.33
4,305.00	15.10	258.90	4,251.56	-112.40	-458.98	472.29	0.36	0.22	-1.11
4,394.00	14.20	261.40	4,337.66	-116.26	-481.15	494.78	1.24	-1.01	2.81
4,484.00	12.70	261.90	4,425.19	-119.31	-501.86	515.68	1.67	-1.67	0.56
4,528.00	12.70	262.90	4,468.11	-120.58	-511.45	525.32	0.50	0.00	2.27
4,573.00	12.80	262.40	4,512.00	-121.86	-521.30	535.22	0.33	0.22	-1.11
4,663.00	11.90	265.20	4,599.92	-123.95	-540.43	554.37	1.20	-1.00	3.11
4,752.00	10.00	266.10	4,687.30	-125.24	-557.28	571.13	2.14	-2.13	1.01
4,842.00	8.00	270.40	4,776.19	-125.73	-571.34	584.99	2.34	-2.22	4.78
4,932.00	7.10	270.70	4,865.41	-125.62	-583.17	596.54	1.00	-1.00	0.33
5,021.00	5.10	263.90	4,953.90	-125.97	-592.60	605.84	2.39	-2.25	-7.64
5,111.00	3.10	256.60	5,043.66	-126.96	-598.95	612.25	2.29	-2.22	-8.11
5,156.00	3.00	251.60	5,088.60	-127.62	-601.25	614.64	0.63	-0.22	-11.11
5,200.00	3.00	253.70	5,132.54	-128.30	-603.44	616.93	0.25	0.00	4.77

Company: ConocoPhillips
 Project: Lea County, New Mexico
 Site: Ruby Federal
 Well: Ruby Federal 15
 Wellbore: Original Hole
 Design: Surveys Original Hole

Local Co-ordinate Reference: Well Ruby Federal 15
 TVD Reference: RKB=4008+13 @ 4021.00usft (PD822)
 MD Reference: RKB=4008+13 @ 4021.00usft (PD822)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 Ddatabase

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,290.00	1.10	253.70	5,222.48	-129.21	-606.53	620.14	2.11	-2.11	0.00
5,380.00	0.60	316.50	5,312.47	-129.11	-607.69	621.25	1.09	-0.56	69.78
5,469.00	0.60	305.30	5,401.46	-128.50	-608.39	621.81	0.13	0.00	-12.58
5,559.00	0.70	331.50	5,491.46	-127.74	-609.04	622.29	0.34	0.11	29.11
5,648.00	0.80	353.10	5,580.45	-126.65	-609.37	622.39	0.33	0.11	24.27
5,738.00	0.80	359.60	5,670.44	-125.40	-609.45	622.21	0.10	0.00	7.22
5,828.00	1.10	356.60	5,760.43	-123.91	-609.50	621.96	0.34	0.33	-3.33
5,917.00	1.00	0.60	5,849.42	-122.28	-609.55	621.66	0.14	-0.11	4.49
6,007.00	1.00	0.40	5,939.40	-120.71	-609.53	621.32	0.00	0.00	-0.22
6,096.00	1.00	356.40	6,028.39	-119.15	-609.58	621.05	0.08	0.00	-4.49
6,186.00	1.00	344.20	6,118.37	-117.62	-609.84	620.98	0.24	0.00	-13.56
6,276.00	0.90	351.10	6,208.36	-116.16	-610.16	621.00	0.17	-0.11	7.67
6,365.00	1.00	355.40	6,297.35	-114.70	-610.33	620.87	0.14	0.11	4.83
6,455.00	1.00	357.00	6,387.34	-113.13	-610.44	620.64	0.03	0.00	1.78
6,544.00	1.20	351.90	6,476.32	-111.43	-610.61	620.46	0.25	0.22	-5.73
6,634.00	1.00	353.90	6,566.30	-109.72	-610.83	620.32	0.23	-0.22	2.22
6,724.00	1.00	353.90	6,656.29	-108.16	-610.99	620.16	0.00	0.00	0.00
6,768.00	1.20	349.30	6,700.28	-107.32	-611.12	620.11	0.50	0.45	-10.45
6,858.00	1.20	342.40	6,790.26	-105.50	-611.58	620.19	0.16	0.00	-7.67
6,974.00	1.20	347.40	6,906.24	-103.15	-612.21	620.32	0.09	0.00	4.31
7,028.00	1.20	347.40	6,960.22	-102.05	-612.46	620.33	0.00	0.00	0.00
Survey projected									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
787.00	787.00	0.00	0.00	MWD surveys
7,028.00	6,960.22	-102.05	-612.46	Survey projected

Checked By: _____ Approved By: _____ Date: _____