

Results of Directional Survey

API number:	30-025-41651	DD	
OGRID:		Operator:	CONOCOPHILLIPS COMPANY
		Property:	RUBY FEDERAL # 26

surface	ULSTR:	G	17	T	17S	R	32E
				1480	FNL	2250	FEL

BH Loc	ULSTR:	G	17	T	17S	R	32E
6963	MD	6957.3	TVD	1660	FNL	2372	FEL

Top Perf/OH	ULSTR:	G	17	T	17S	R	32E
5488	MD	5482.4	TVD	1650	FNL	2357	FEL

Bot Perf/OH	ULSTR:	G	17	T	17S	R	32E
6642	MD	6636.3	TVD	1658	FNL	2370	FEL

	MD	N/S	E/W	VD
	5457	-169.90	-106.67	5451.45
TOP PERFS/OH	5488	-170.31	-106.98	5482.44
	5546	-171.07	-107.57	5540.43
	6618	-177.52	-119.49	6612.34
BOT PERFS/OH	6642	-177.65	-119.66	6636.34
	6708	-178.00	-120.11	6702.34

NEXT TO LAST	6913	-179.11	-121.30	6907.33
LAST READING	6963	-179.54	-121.74	6957.33
TD	6963	-179.54	-121.74	6957.33

Surface Location	1480	FN	2250	FE
Projected BHL	1660	FN	2372	FE
Location of				
Top Perfs/OH	1650	FN	2357	FE
Bottom Perfs/OH	1658	FN	2370	FE

SUMMARY of Subsurface Locations

Surface Location	G-17-17S-32E	1480	FN	2250	FE	Vert. Depth
Top Perfs/OH	G-17-17S-32E	1650	FN	2357	FE	5482.44
Bottom Perfs/OH	G-17-17S-32E	1658	FN	2370	FE	6636.34
Projected TD	G-17-17S-32E	1660	FN	2372	FE	6957.33

JUL 16 2014



Job Number: 5109014
 Company: Conoco Phillips
 Lease/Well: Ruby Federal 26
 Location: Lea county
 Rig Name: Precision 822
 RKB: ☐
 G.L. or M.S.L.: ☐

State/Country: New Mexico
 Declination: 7.24
 Grid: ☐
 File name: C:\5109614.SVY
 Date/Time: 18-Mar-14 / 18:15
 Curve Name: Ruby

Ruby

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 211.72
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
810.00	.40	244.00	809.99	-1.24	-2.54	2.39	2.83	244.00	.05
989.00	.80	228.60	988.98	-2.34	-4.04	4.11	4.67	239.92	.24
1168.00	.90	239.20	1167.96	-3.89	-6.19	6.56	7.30	237.86	.10
1346.00	.80	241.50	1345.94	-5.19	-8.48	8.88	9.94	238.50	.06
1515.00	.50	232.20	1514.93	-6.21	-10.10	10.59	11.85	238.41	.19
1704.00	.20	333.30	1703.93	-6.42	-10.90	11.19	12.65	239.49	.30
1883.00	.30	15.60	1882.93	-5.69	-10.91	10.58	12.31	242.46	.11
1972.00	1.10	243.10	1971.92	-5.85	-11.61	11.08	13.00	243.25	1.48
2062.00	2.90	220.50	2061.87	-7.97	-13.86	14.07	15.99	240.09	2.15
2151.00	3.60	212.90	2150.72	-12.03	-16.84	19.09	20.70	234.45	.92
2241.00	3.20	212.90	2240.56	-16.51	-19.74	24.43	25.74	230.08	.44
2330.00	2.90	213.00	2329.44	-20.49	-22.31	29.16	30.29	227.44	.34

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
2420.00	2.70	213.20	2419.33	-24.17	-24.72	33.55	34.57	225.64	.22
2509.00	3.00	200.60	2508.22	-28.11	-26.68	37.94	38.75	223.51	.78
2598.00	2.80	195.60	2597.11	-32.38	-28.09	42.31	42.86	220.94	.36
2688.00	2.50	208.50	2687.01	-36.22	-29.61	46.38	46.79	219.27	.74
2777.00	2.20	211.20	2775.94	-39.39	-31.43	50.03	50.39	218.58	.36
2867.00	2.20	207.80	2865.87	-42.39	-33.13	53.48	53.80	218.00	.14
2956.00	2.30	209.70	2954.80	-45.46	-34.81	56.97	57.25	217.44	.14
3045.00	3.90	208.10	3043.67	-49.68	-37.12	61.77	62.01	216.77	1.80
3134.00	3.80	209.10	3132.47	-54.92	-39.98	67.74	67.93	216.05	.14
3223.00	3.40	215.90	3221.29	-59.64	-42.96	73.32	73.50	215.77	.66
3313.00	3.10	216.20	3311.15	-63.76	-45.96	78.41	78.60	215.78	.33
3402.00	3.50	202.50	3400.00	-68.22	-48.42	83.49	83.66	215.37	.99
3492.00	3.50	205.30	3489.83	-73.24	-50.65	88.93	89.05	214.67	.19
3581.00	3.30	203.50	3578.68	-78.04	-52.83	94.16	94.24	214.10	.25
3670.00	3.20	208.10	3667.53	-82.58	-55.02	99.18	99.24	213.67	.31
3759.00	3.10	209.00	3756.40	-86.88	-57.36	104.06	104.11	213.43	.13
3849.00	3.00	210.60	3846.27	-91.04	-59.74	108.85	108.89	213.27	.15
3938.00	3.00	210.80	3935.15	-95.04	-62.12	113.50	113.54	213.17	.01
4027.00	3.10	215.00	4024.02	-99.01	-64.69	118.23	118.27	213.16	.28
4117.00	3.00	215.40	4113.90	-102.93	-67.45	123.01	123.06	213.24	.11
4206.00	2.80	216.60	4202.78	-106.57	-70.09	127.50	127.55	213.33	.23
4295.00	2.50	213.20	4291.69	-109.94	-72.45	131.61	131.67	213.39	.38
4385.00	4.20	211.50	4381.53	-114.39	-75.25	136.87	136.92	213.34	1.89
4474.00	4.50	206.80	4470.27	-120.29	-78.53	143.61	143.65	213.14	.52
4563.00	4.40	208.60	4559.01	-126.40	-81.74	150.49	150.53	212.89	.19
4653.00	4.50	211.80	4648.74	-132.43	-85.25	157.47	157.50	212.77	.30
4742.00	4.40	212.70	4737.47	-138.27	-88.93	164.38	164.40	212.75	.14
4831.00	3.80	206.20	4826.24	-143.79	-92.08	170.73	170.75	212.63	.85
4921.00	3.80	211.20	4916.04	-149.02	-94.94	176.68	176.69	212.50	.37
5010.00	3.60	215.10	5004.86	-153.83	-98.08	182.41	182.43	212.52	.36
5099.00	3.30	202.40	5093.70	-158.48	-100.66	187.73	187.75	212.42	.92
5189.00	2.20	203.90	5183.59	-162.46	-102.35	192.00	192.01	212.21	1.22
5278.00	2.20	206.60	5272.53	-165.55	-103.80	195.39	195.40	212.09	.12
5368.00	1.70	215.50	5362.47	-168.18	-105.35	198.45	198.45	212.06	.65

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
5457.00	1.10	220.60	5451.45	-169.90	-106.67	200.61	200.61	212.12	.69
5546.00	.80	212.80	5540.43	-171.07	-107.57	202.07	202.08	212.16	.37
5636.00	.60	229.10	5630.43	-171.91	-108.26	203.15	203.16	212.20	.31
5725.00	.80	232.40	5719.42	-172.59	-109.11	204.18	204.19	212.30	.23
5814.00	.80	236.70	5808.41	-173.31	-110.12	205.32	205.34	212.43	.07
5904.00	.90	250.00	5898.40	-173.90	-111.31	206.45	206.47	212.62	.24
5993.00	.70	242.70	5987.39	-174.39	-112.45	207.46	207.50	212.81	.25
6038.00	.80	239.40	6032.39	-174.67	-112.96	207.97	208.02	212.89	.24
6172.00	.70	237.40	6166.38	-175.59	-114.46	209.54	209.60	213.10	.08
6261.00	.60	252.10	6255.37	-176.03	-115.36	210.39	210.46	213.24	.22
6350.00	.80	261.00	6344.37	-176.27	-116.42	211.15	211.24	213.44	.26
6440.00	.80	251.30	6434.36	-176.57	-117.63	212.04	212.16	213.67	.15
6529.00	.70	240.10	6523.35	-177.04	-118.69	213.00	213.14	213.84	.20
6618.00	.50	237.50	6612.34	-177.52	-119.49	213.82	213.99	213.95	.23
6708.00	.50	227.00	6702.34	-178.00	-120.11	214.56	214.73	214.01	.10
6797.00	.30	228.60	6791.34	-178.41	-120.57	215.15	215.33	214.05	.23
6913.00	.70	225.70	6907.33	-179.11	-121.30	216.13	216.32	214.11	.35
6963.00	.70	225.70	6957.33	-179.54	-121.74	216.73	216.92	214.14	.00