

Results of Directional Survey

DD

API number:	30-025-41925		
OGRID:		Operator:	CONOCOPHILLIPS COMPANY
		Property:	GARNET FEDERAL # 6

surface	ULSTR:	P	15	T	17S	R	32E
				685	FSL	270	FEL

BH Loc	ULSTR:	P	15	T	17S	R	32E
7095	MD	7086.4	TVD	964	FSL	365	FEL

Top Perf/OH	ULSTR:	P	15	T	17S	R	32E
5595	MD	5588.8	TVD	886	FSL	336	FEL

Bot Perf/OH	ULSTR:	P	15	T	17S	R	32E
6762	MD	6753.8	TVD	949	FSL	359	FEL

	MD	N/S	E/W	VD
	5465.00	193.82	-62.69	5459.02
TOP PERFS/OH	5595.00	201.48	-65.52	5588.77
	5644.00	204.37	-66.58	5637.67
	6716.00	262.01	-87.69	6707.91
BOT PERFS/OH	6762.00	264.28	-88.59	6753.84
	6895.00	270.86	-91.19	6886.65

NEXT TO LAST	7047.00	277.37	-94.18	7038.49
LAST READING	7095.00	279.24	-95.11	7086.44
TD	7095.00	279.24	-95.11	7086.44

Surface Location	685	FS	270	FE
Projected BHL	964	FS	365	FE
Location of				
Top Perfs/OH	886	FS	336	FE
Bottom Perfs/OH	949	FS	359	FE

SUMMARY of Subsurface Locations

Surface Location	P-15-17S-32E	685	FS	270	FE	Vert. Depth
Top Perfs/OH	P-15-17S-32E	886	FS	336	FE	5588.77
Bottom Perfs/OH	P-15-17S-32E	949	FS	359	FE	6753.84
Projected TD	P-15-17S-32E	964	FS	365	FE	7086.44

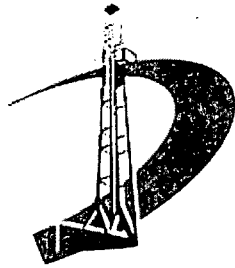
JAN 29 2015

30-025-41925

HOBBSOCD

JAN 20 2015

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PRODIRECTIONAL

P.O. Box 750 | Conroe, TX 77305 | Phone: 936-441-7266
www.prodirectional.com


ConocoPhillips

Garnet Federal No. 6
Lea County, NM

August 05, 2014

Job No. LNM 5112314

Survey Completion Report

fm



PRODIRECTIONAL

Professional Directional Ltd.

P.O. Box 750 | Conroe, TX 77305 | (936) 441-7266

August 05, 2014


ConocoPhillips

ConocoPhillips

Garnet Federal No. 6

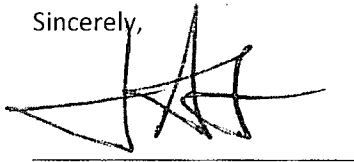
Lea County, NM

Job No. LNM 5112314

Survey Certification Form:

This is to certify surveys from **997'MD** to a depth of **7,095'MD** are true and correct MWD Surveys. These surveys were taken from **07/24/2014** through **07/27/2014**.

Sincerely,



John Jordan | Well Planning

PRODIRECTIONAL



ConocoPhillips

Lea County, NM

Garnet Federal No. 6

OH

Survey: ProDirectional

Wellpath Report

05 August, 2014





Professional Directional
Wellpath Report



Company:	Conoco Phillips	Local Co-ordinate Reference:	Well No. 6
Project:	Lea County, N.M.	TVD Reference:	WELL @ 4044.00usft (Original Well Elev)
Site:	Garnet Federal	MD Reference:	WELL @ 4044.00usft (Original Well Elev)
Well:	No. 6	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Well_Planner1

Project	Lea County, N.M.		
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	Garnet Federal		
Site Position:		Northing:	665,838.65 usft
From:	Map	Easting:	680,526.85 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 49' 44.750 N
		Longitude:	103° 44' 44.280 W
		Grid Convergence:	0.32 °

Well	No. 6		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 49' 44.759 N
		Longitude:	103° 44' 45.805 W
		Ground Level:	4,031.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	8/5/2014	7.32
			Dip Angle
			(°)
			60.64
			Field Strength
			(nT)
			48,642

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			345.03

Survey Program	Date	8/5/2014		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
997.00	7,095.00	Survey #1 (OH)	MWD	MWD - Standard



Professional Directional
Wellpath Report



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Site:	Garnet Federal	MD Reference:	WELL @ 4044.00usft (Original Well Elev)
Well:	No. 6	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Well_Planner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	TFace (°)	
941.00	0.00	0.00	941.00	0.00	0.00	0.00	0.00	665,838.80	680,396.70	0.00	
997.00	0.30	5.60	997.00	0.15	0.01	0.14	0.54	665,838.95	680,396.71	5.60	
ProDirectional First Survey: 997' MD											
1,176.00	0.40	329.30	1,176.00	1.15	-0.26	1.18	0.13	665,839.95	680,396.44	-84.60	
1,354.00	0.20	292.00	1,353.99	1.80	-0.86	1.96	0.15	665,840.60	680,395.84	-153.29	
1,533.00	0.50	273.60	1,532.99	1.97	-1.93	2.40	0.18	665,840.77	680,394.77	-29.90	
1,711.00	0.50	38.10	1,710.99	2.63	-2.23	3.11	0.50	665,841.43	680,394.47	152.25	
1,890.00	1.50	52.20	1,889.96	4.68	0.10	4.49	0.57	665,843.48	680,396.80	20.94	
2,069.00	4.40	7.40	2,068.72	12.92	2.84	11.75	1.95	665,851.72	680,399.54	-62.35	
2,248.00	3.60	347.90	2,247.29	25.23	2.55	23.72	0.88	665,864.03	680,399.25	-129.94	
2,426.00	4.00	328.70	2,424.91	36.00	-1.85	35.25	0.75	665,874.80	680,394.85	-82.28	
2,605.00	3.40	327.10	2,603.53	45.79	-7.98	46.30	0.34	665,884.59	680,388.72	-171.03	
2,784.00	3.30	338.90	2,782.23	55.05	-12.71	56.47	0.39	665,893.85	680,383.99	104.11	
2,963.00	2.60	336.60	2,960.99	63.59	-16.18	65.61	0.40	665,902.39	680,380.52	-171.55	
3,141.00	2.10	321.60	3,138.84	69.85	-19.81	72.59	0.44	665,908.65	680,376.89	-136.44	
3,320.00	2.20	336.30	3,317.72	75.56	-23.23	79.00	0.31	665,914.36	680,373.47	87.12	
3,499.00	2.60	349.00	3,496.56	82.69	-25.39	86.45	0.37	665,921.49	680,371.31	59.51	
3,677.00	3.10	335.30	3,674.34	91.03	-28.17	95.22	0.47	665,929.83	680,368.53	-60.69	
3,856.00	2.90	334.00	3,853.10	99.50	-32.17	104.43	0.12	665,938.30	680,364.53	-161.86	
4,035.00	3.40	345.50	4,031.83	108.71	-35.49	114.18	0.45	665,947.51	680,361.21	57.48	
4,214.00	3.40	341.50	4,210.51	118.88	-38.50	124.79	0.13	665,957.68	680,358.20	-92.00	
4,393.00	3.40	342.60	4,389.20	128.98	-41.77	135.39	0.04	665,967.78	680,354.93	90.55	
4,572.00	3.50	349.10	4,567.87	139.41	-44.39	146.14	0.23	665,978.21	680,352.31	78.92	
4,750.00	3.70	340.80	4,745.52	150.17	-47.31	157.29	0.31	665,988.97	680,349.39	-73.18	
4,929.00	3.80	342.50	4,924.14	161.28	-50.99	168.98	0.08	666,000.08	680,345.71	48.88	
5,108.00	3.70	339.60	5,102.76	172.35	-54.79	180.65	0.12	666,011.15	680,341.91	-119.24	
5,286.00	3.70	339.50	5,280.39	183.11	-58.80	192.09	0.00	666,021.91	680,337.90	-90.05	

Company:	Conoco Phillips	Local Co-ordinate Reference:	Well No. 6
Project:	Lea County, N.M.	TVD Reference:	WELL @ 4044.00usft (Original Well Elev)
Site:	Garnet Federal	MD Reference:	WELL @ 4044.00usft (Original Well Elev)
Well:	No. 6	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Well_Planner1

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	TFace (°)
5,465.00	3.60	340.60	5,459.02	193.82	-62.69	203.44	0.07	666,032.62	680,334.01	145.55
5,644.00	3.60	338.90	5,637.67	204.37	-66.58	214.63	0.06	666,043.17	680,330.12	-90.85
5,822.00	3.40	341.00	5,815.34	214.57	-70.31	225.45	0.13	666,053.37	680,326.39	148.38
6,001.00	3.20	340.90	5,994.04	224.31	-73.68	235.73	0.11	666,063.11	680,323.02	-178.40
6,180.00	3.40	338.50	6,172.74	233.97	-77.26	245.99	0.14	666,072.77	680,319.44	-35.84
6,359.00	3.20	340.90	6,351.45	243.63	-80.84	256.24	0.14	666,082.43	680,315.86	146.56
6,537.00	3.10	338.90	6,529.18	252.81	-84.19	265.98	0.08	666,091.61	680,312.51	-133.30
6,716.00	3.20	339.40	6,707.91	262.01	-87.69	275.77	0.06	666,100.81	680,309.01	15.61
6,895.00	2.90	337.40	6,886.65	270.86	-91.19	285.23	0.18	666,109.66	680,305.51	-161.47
7,047.00	2.50	333.20	7,038.49	277.37	-94.16	292.28	0.29	666,116.17	680,302.54	-155.77
Last Survey: 7,047' MD, 7,038.49' TVD										
7,095.00	2.50	333.20	7,086.44	279.24	-95.11	294.33	0.00	666,118.04	680,301.59	0.00
PTB: 7,095' MD										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
997.00	997.00	0.15	0.01	ProDirectional First Survey: 997' MD
7,047.00	7,038.49	277.37	-94.16	Last Survey: 7,047' MD, 7,038.49' TVD
7,095.00	7,086.44	279.24	-95.11	PTB: 7,095' MD