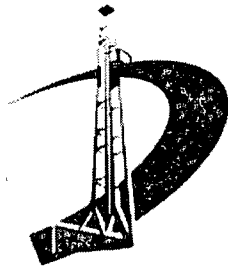


HOBBS OCD

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PRODIRECTIONAL

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


ConocoPhillips

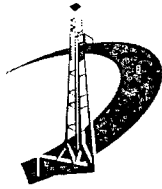
Garnet Federal No. 2
Lea County, NM

July 23, 2014

Job No. LNM 5112114

Survey Completion Report

FEB 24 2015



PRODIRECTIONAL

Professional Directional Ltd.

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

July 23, 2014



ConocoPhillips

Garnet Federal No. 2

Lea County, NM

Job No. LNM 5112114

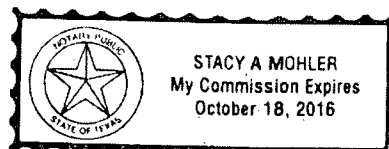
Survey Certification Form:

This is to certify surveys from **1,088'MD** to a depth of **7,076'MD** are true and correct MWD Surveys.
These surveys were taken from **07/16/2014** through **07/20/2014**.

Sincerely,

John Jordan | Well Planning

PRODIRECTIONAL



Stacy A. Mohler



Conoco Phillips

**Lea County, N.M.
Garnet Federal
No. 2
OH**

Survey: ProDirectional

Wellpath Report

23 July, 2014





Professional Directional
Wellpath Report



Company:	Conoco Phillips	Local Co-ordinate Reference:	Well No. 2
Project:	Lea County, N.M.	TVD Reference:	WELL @ 4040.00usft (Original Well Elev)
Site:	Garnet Federal	MD Reference:	WELL @ 4040.00usft (Original Well Elev)
Well:	No. 2	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	Latitude:	32° 49' 44.750 N	
From:	Map	Easting:	680,526.85	usft	Longitude:	103° 44' 44.280 W	
Position Uncertainty:		0.00	usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.32 °

Well	No. 2					
Well Position	+N/-S	0.00 usft	Northing:	666,140.90 usft	Latitude:	32° 49' 47.790 N
	+E/-W	0.00 usft	Easting:	679,629.90 usft	Longitude:	103° 44' 54.772 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,027.00 usft	

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	User Defined	6/5/2014	7.47	60.63	48,696

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	90.00	

Survey Program		Date 7/23/2014		
From	To			
(usft)	(usft)	Survey (Wellbore)	Tool Name	Description
1,088.00	7,076.00	Survey #1 (OH)	MWD	MWD - Standard



Professional Directional
Wellpath Report



Company: Conoco Phillips
Project: Lea County, N.M.
Site: Garnet Federal
Well: No. 2
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well No. 2
TVD Reference: WELL @ 4040.00usft (Original Well Elev)
MD Reference: WELL @ 4040.00usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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 (°)	
960.00	0.00	0.00	960.00	0.00	0.00	0.00	0.00	666,140.90	679,629.90	0.00	
1,088.00	0.20	297.40	1,088.00	0.10	-0.20	-0.20	0.16	666,141.00	679,629.70	297.40	
ProDirectional First Survey:1,088' MD											
1,266.00	0.30	299.00	1,266.00	0.47	-0.88	-0.88	0.06	666,141.37	679,629.02	4.79	
1,445.00	0.30	282.30	1,445.00	0.80	-1.75	-1.75	0.05	666,141.70	679,628.15	-98.35	
1,623.00	1.40	113.40	1,622.98	0.03	-0.21	-0.21	0.95	666,140.93	679,629.69	-170.85	
1,802.00	0.90	72.80	1,801.95	-0.42	3.14	3.14	0.52	666,140.48	679,633.04	-140.74	
1,981.00	0.80	83.90	1,980.93	0.13	5.73	5.73	0.11	666,141.03	679,635.63	126.74	
2,160.00	0.60	98.00	2,159.91	0.13	7.90	7.90	0.15	666,141.03	679,637.80	146.17	
2,338.00	0.30	228.40	2,337.91	-0.31	8.47	8.47	0.46	666,140.59	679,638.37	163.96	
2,517.00	0.20	69.60	2,516.91	-0.51	8.41	8.41	0.27	666,140.39	679,638.31	-171.54	
2,696.00	0.20	39.80	2,695.91	-0.16	8.91	8.91	0.06	666,140.74	679,638.81	-104.90	
2,875.00	0.10	301.00	2,874.91	0.16	8.97	8.97	0.13	666,141.06	679,638.87	-155.34	
3,054.00	0.30	234.80	3,053.91	-0.03	8.46	8.46	0.15	666,140.87	679,638.36	-85.61	
3,232.00	1.30	115.90	3,231.89	-1.18	9.89	9.89	0.83	666,139.72	679,639.79	-129.20	
3,411.00	0.80	142.10	3,410.86	-3.05	12.49	12.49	0.38	666,137.85	679,642.39	148.76	
3,590.00	1.80	84.00	3,589.82	-3.75	16.05	16.05	0.86	666,137.15	679,645.95	-84.34	
3,768.00	2.70	82.90	3,767.68	-2.93	22.99	22.99	0.51	666,137.97	679,652.89	-3.30	
3,947.00	2.10	86.60	3,946.52	-2.22	30.45	30.45	0.35	666,138.68	679,660.35	167.36	
4,126.00	1.90	84.80	4,125.42	-1.76	36.68	36.68	0.12	666,139.14	679,666.58	-163.46	
4,304.00	0.90	93.80	4,303.36	-1.58	41.01	41.01	0.57	666,139.32	679,670.91	172.07	
4,483.00	1.00	84.10	4,482.34	-1.51	43.97	43.97	0.11	666,139.39	679,673.87	-63.04	
4,662.00	1.00	85.00	4,661.31	-1.22	47.08	47.08	0.01	666,139.68	679,676.98	90.45	
4,840.00	1.00	93.00	4,839.28	-1.16	50.18	50.18	0.08	666,139.74	679,680.08	94.00	
5,019.00	1.00	87.90	5,018.25	-1.19	53.30	53.30	0.05	666,139.71	679,683.20	-92.55	
5,198.00	1.10	89.90	5,197.22	-1.13	56.57	56.57	0.06	666,139.77	679,686.47	21.13	
5,377.00	1.00	90.80	5,376.19	-1.15	59.86	59.86	0.06	666,139.75	679,689.76	171.08	



Professional Directional
Wellpath Report



Company: Conoco Phillips
Project: Lea County, N.M.
Site: Garnet Federal
Well: No. 2
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well No. 2
TVD Reference: WELL @ 4040.00usft (Original Well Elev)
MD Reference: WELL @ 4040.00usft (Original Well Elev)
North Reference: Grd
Survey Calculation Method: Minimum Curvature
Database: Well_Planner1

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	TFace (°)
5,556.00	0.80	101.50	5,555.17	-1.42	62.64	62.64	0.15	666,139.48	679,692.54	145.23
5,735.00	1.00	96.50	5,734.15	-1.84	65.42	65.42	0.12	666,139.06	679,695.32	-23.95
5,913.00	1.00	105.60	5,912.12	-2.44	68.46	68.46	0.09	666,138.46	679,698.36	94.55
6,092.00	1.10	97.50	6,091.09	-3.08	71.67	71.67	0.10	666,137.82	679,701.57	-60.13
6,271.00	1.30	90.50	6,270.05	-3.32	75.40	75.40	0.14	666,137.58	679,705.30	-39.77
6,450.00	1.00	95.20	6,449.02	-3.48	78.99	78.99	0.18	666,137.42	679,708.89	164.89
6,628.00	1.00	102.60	6,626.99	-3.96	82.05	82.05	0.07	666,136.94	679,711.95	93.70
6,807.00	1.10	93.70	6,805.96	-4.41	85.29	85.29	0.11	666,136.49	679,715.19	-62.99
6,986.00	1.00	96.40	6,984.93	-4.70	88.55	88.55	0.06	666,136.20	679,718.45	155.02
7,024.00	0.80	101.60	7,022.93	-4.79	89.14	89.14	0.57	666,136.11	679,719.04	160.37
Last Survey: 7,024' MD										
7,076.00	0.80	101.60	7,074.92	-4.93	89.85	89.85	0.00	666,135.97	679,719.75	0.00
PTB: 7,076' MD										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
1,088.00	1,088.00	0.10	-0.20	ProDirectional First Survey: 1,088' MD
7,024.00	7,022.93	-4.79	89.14	Last Survey: 7,024' MD
7,076.00	7,074.92	-4.93	89.85	PTB: 7,076' MD