

Results of Directional Survey

DD

API number:	30-025-41502		
OGRID:		Operator:	CONOCOPHILLIPS COMPANY
		Property:	RUBY FEDERAL # 29

surface	ULSTR:	E	17	T	17S	R	32E
				1850	FNL	990	FWL

BH Loc	ULSTR:	E	17	T	17S	R	32E
6986	MD	6954.2	TVD	2287	FNL	1010	FWL

Top Perf/OH	ULSTR:	E	17	T	17S	R	32E
5452	MD	5420.3	TVD	2288	FNL	994	FWL

Bot Perf/OH	ULSTR:	E	17	T	17S	R	32E
6625	MD	6593.2	TVD	2286	FNL	1006	FWL

	MD	N/S	E/W	VD
	5370	-437.99	2.42	5338.26
TOP PERFS/OH	5452	-437.60	3.50	5420.25
	5459	-437.57	3.59	5427.25
	6621	-435.73	16.02	6589.17
BOT PERFS/OH	6625	-435.73	16.06	6593.17
	6710	-435.79	16.86	6678.17

NEXT TO LAST	6934	-436.53	19.10	6902.16
LAST READING	6986	-436.81	19.56	6954.15
TD	6986	-436.81	19.56	6954.15

Surface Location	1850	FN	990	FW
Projected BHL	2287	FN	1010	FW
Location of				
Top Perfs/OH	2288	FN	994	FW
Bottom Perfs/OH	2286	FN	1006	FW

SUMMARY of Subsurface Locations

Surface Location	E-17-17S-32E	1850	FN	990	FW	Vert. Depth
Top Perfs/OH	E-17-17S-32E	2288	FN	994	FW	5420.25
Bottom Perfs/OH	E-17-17S-32E	2286	FN	1006	FW	6593.17
Projected TD	E-17-17S-32E	2287	FN	1010	FW	6954.15

JUN 04 2014

HOBBS OCD

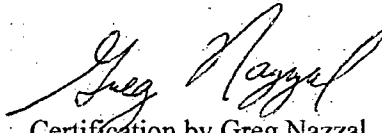
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1407 Northpark Dr.
Kingwood, TX 77339
Cell: (281) 851-8112
Efax: (281) 966-1566

BlueStar MWD, LP performed a MWD survey for ConocoPhillips' Ruby Federal 29, located in Lea County, NM. The API number is: 30-025-41502. The surveys were taken from 130 MD to 6934 MD and ranged over the dates from 17-Jan-14 to 23-Jan-14 and are certified as being true and correct.



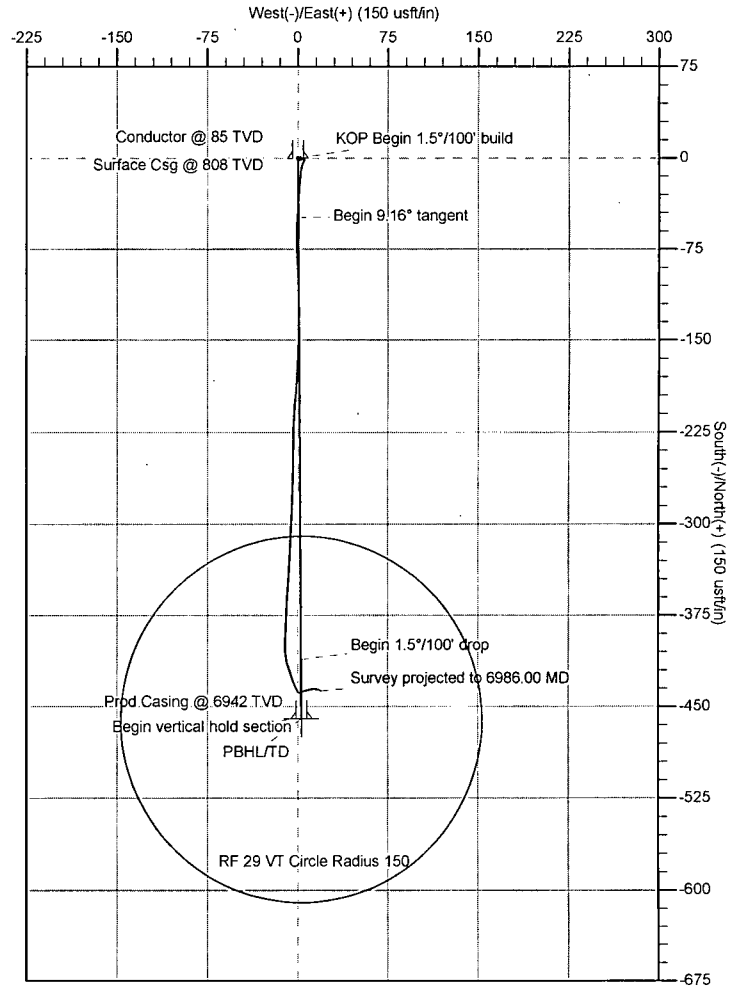
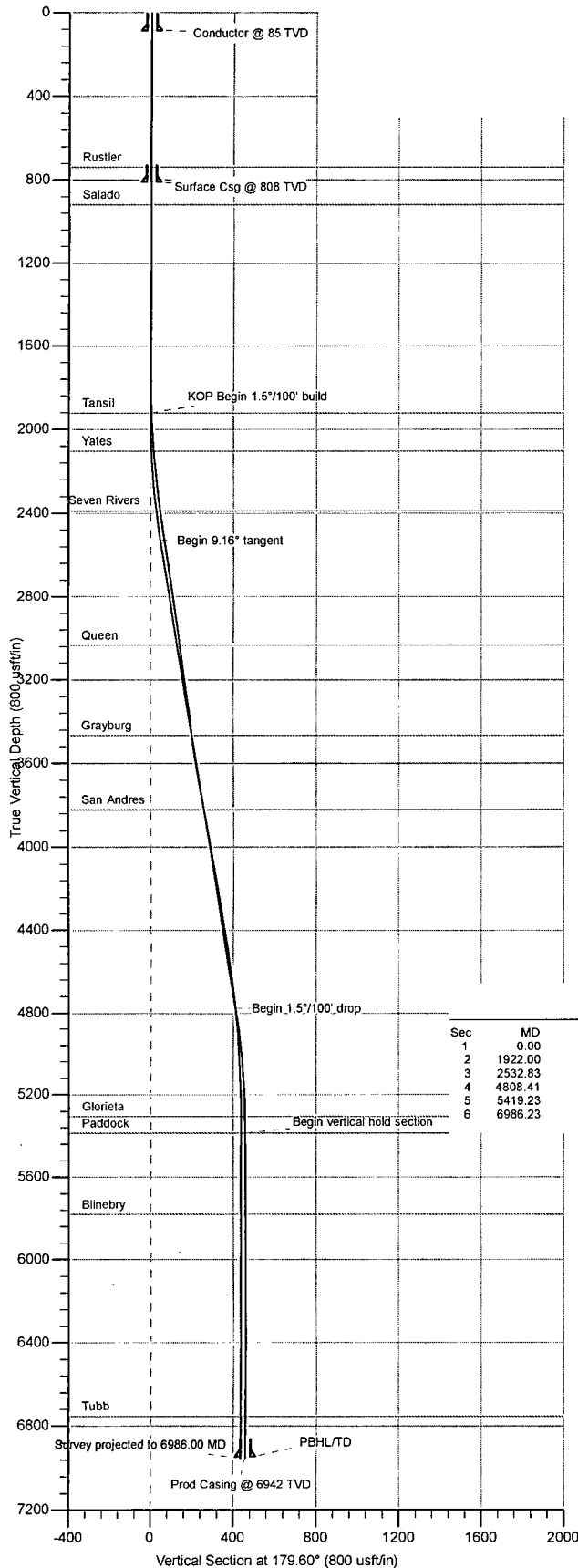
Certification by Greg Nazzal
President

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Well: Ruby Federal 29
Site: Ruby Federal
Project: Lea County, New Mexico
Design: rev0
Rig: PD 822



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	1922.00	0.00	0.00	1922.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 1.5°/100' build
3	2532.83	9.16	179.60	2530.23	-48.73	0.34	1.50	179.60	48.74	Begin 9.16° tangent
4	4808.41	9.16	179.60	4776.77	-411.08	2.87	0.00	0.00	411.09	Begin 1.5°/100' drop
5	5419.23	0.00	179.60	5385.00	-459.81	3.21	1.50	180.00	459.82	Begin vertical hold section
6	6986.23	0.00	179.60	6952.00	-459.81	3.21	0.00	179.60	459.82	PBHL/TD

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation	
130.00	130.00	0.20	54.60	0.13	0.18	-0.13	0.23	MWD surveys	
6954.15	6986.00	0.60	120.90	-436.81	19.56	436.94	473.99	Survey projected to 6986.00 MD	

Surface Location: RKB=4009+13 @ 4022.00usft (PD 822)
US State Plane 1927 (Exact solution)
New Mexico East 3001

Northing 668536.32 Easting 665813.30 Latitude 32° 50' 12.22005384 N Longitude 103° 47' 36.54995498 W
Total Correction (M => G) To convert a Magnetic Direction to a Grid Direction, Add 7.25°



Azimuths to Grid North
True North: -0.29°
Magnetic North: 7.25°

Magnetic Field
Strength: 48744.0nT
Dip Angle: 60.64°
Date: 12/31/2013
Model: USER DEFINED



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ConocoPhillips

Standard_report

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Company:	ConocoPhillips	Local Co-ordinate Reference:	Well Ruby Federal 29
Project:	Lea County, New Mexico	TVD Reference:	RKB=4009+13 @ 4022.00usft (PD 822)
Site:	Ruby Federal	MD Reference:	RKB=4009+13 @ 4022.00usft (PD 822)
Well:	Ruby Federal 29	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
From:	Map	Easting:	666,996.38 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/8 "
		Latitude:	32° 49' 41.50037426 N
		Longitude:	103° 47' 22.87078135 W
		Grid Convergence:	0.29 °

Well	Ruby Federal 29					
Well Position	+N-S	0.00 usft	Northing:	668,536.32 usft	Latitude:	32° 50' 12.22005384 N
	+E-W	0.00 usft	Easting:	665,813.30 usft	Longitude:	103° 47' 36.54995498 W
Position Uncertainty	0.00 usft		Wellhead Elevation:	usft	Ground Level:	4,009.00 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	12/31/2013	7.54	60.64	48,744

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	179.60

Survey Program	Date	1/26/2014		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
130.00	6,986.00	MWD (Original Hole)	MWD	MWD - Standard

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well Ruby Federal 29
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Site:	Ruby Federal	MD Reference:	RKB=4009+13 @ 4022.00usft (PD 822)
Well:	Ruby Federal 29	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec. (usft)	Northing (usft)	Easting (usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	668,536.32	665,813.30	
130.00	0.20	54.60	130.00	0.13	0.18	0.15	-0.13	668,536.45	665,813.48	
MWD surveys										
161.00	0.40	109.50	161.00	0.13	0.33	1.06	-0.12	668,536.45	665,813.63	
189.00	0.70	76.40	189.00	0.13	0.59	1.52	-0.13	668,536.45	665,813.89	
218.00	0.40	29.50	218.00	0.26	0.81	1.78	-0.26	668,536.58	665,814.11	
247.00	0.50	51.70	247.00	0.43	0.96	0.69	-0.42	668,536.75	665,814.26	
306.00	0.40	52.70	305.99	0.71	1.33	0.17	-0.71	668,537.03	665,814.63	
365.00	0.40	53.20	364.99	0.96	1.66	0.01	-0.95	668,537.28	665,814.96	
393.00	0.30	146.60	392.99	0.96	1.77	1.84	-0.95	668,537.28	665,815.07	
422.00	0.40	40.80	421.99	0.97	1.88	1.94	-0.96	668,537.29	665,815.18	
480.00	0.20	37.80	479.99	1.21	2.08	0.35	-1.19	668,537.53	665,815.38	
510.00	0.40	151.80	509.99	1.16	2.16	1.72	-1.14	668,537.48	665,815.46	
539.00	0.30	42.80	538.99	1.12	2.26	1.98	-1.11	668,537.44	665,815.56	
567.00	0.40	131.70	566.99	1.11	2.38	1.77	-1.09	668,537.43	665,815.68	
586.00	0.40	115.70	585.99	1.04	2.49	0.59	-1.02	668,537.36	665,815.79	
616.00	0.00	115.70	615.99	0.99	2.58	1.33	-0.97	668,537.31	665,815.88	
782.00	0.00	115.70	781.99	0.99	2.58	0.00	-0.97	668,537.31	665,815.88	
812.00	0.50	191.30	811.99	0.86	2.56	1.67	-0.85	668,537.18	665,815.86	
901.00	0.30	232.90	900.99	0.34	2.30	0.38	-0.33	668,536.66	665,815.60	
991.00	0.40	216.20	990.99	-0.05	1.92	0.16	0.07	668,536.27	665,815.22	
1,080.00	0.40	223.60	1,079.98	-0.53	1.52	0.06	0.54	668,535.79	665,814.82	
1,169.00	0.40	224.40	1,168.98	-0.98	1.09	0.01	0.98	668,535.34	665,814.39	
1,259.00	0.30	247.10	1,258.98	-1.29	0.66	0.19	1.30	668,535.03	665,813.96	
1,348.00	0.20	26.40	1,347.98	-1.24	0.51	0.53	1.25	668,535.08	665,813.81	
1,437.00	0.50	88.30	1,436.98	-1.09	0.97	0.50	1.10	668,535.23	665,814.27	
1,526.00	0.70	75.30	1,525.97	-0.94	1.88	0.27	0.96	668,535.38	665,815.18	

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well Ruby Federal 29
Project:	Lea County, New Mexico	TVD Reference:	RKB=4009+13 @ 4022.00usft (PD 822)
Site:	Ruby Federal	MD Reference:	RKB=4009+13 @ 4022.00usft (PD 822)
Well:	Ruby Federal 29	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Database

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
1,616.00	1.20	73.70	1,615.96	-0.54	3.32	0.56	0.56	668,535.78	665,816.62	
1,705.00	1.00	83.80	1,704.94	-0.19	4.98	0.31	0.23	668,536.13	665,818.28	
1,794.00	0.60	186.90	1,793.94	-0.57	5.70	1.44	0.61	668,535.75	665,819.00	
1,884.00	1.50	224.40	1,883.92	-1.88	4.82	1.21	1.91	668,534.44	665,818.12	
1,971.00	2.80	195.30	1,970.86	-4.74	3.46	1.91	4.77	668,531.58	665,816.76	
2,062.00	4.60	189.10	2,061.67	-10.49	2.30	2.02	10.51	668,525.83	665,815.60	
2,152.00	5.80	183.60	2,151.30	-18.59	1.44	1.44	18.60	668,517.73	665,814.74	
2,241.00	6.20	182.90	2,239.81	-27.88	0.92	0.46	27.89	668,508.44	665,814.22	
2,330.00	7.10	183.80	2,328.21	-38.17	0.31	1.02	38.17	668,498.15	665,813.61	
2,420.00	8.00	183.90	2,417.43	-49.97	-0.49	1.00	49.96	668,486.35	665,812.81	
2,509.00	9.30	179.20	2,505.42	-63.34	-0.81	1.66	63.33	668,472.98	665,812.49	
2,598.00	8.80	176.80	2,593.31	-77.33	-0.33	0.70	77.32	668,458.99	665,812.97	
2,688.00	9.00	177.10	2,682.22	-91.23	0.41	0.23	91.23	668,445.09	665,813.71	
2,777.00	8.40	177.90	2,770.20	-104.68	1.01	0.69	104.69	668,431.64	665,814.31	
2,867.00	8.40	182.10	2,859.24	-117.82	1.01	0.68	117.82	668,418.50	665,814.31	
2,956.00	8.00	181.30	2,947.33	-130.51	0.63	0.47	130.51	668,405.81	665,813.93	
3,046.00	7.10	180.90	3,036.54	-142.33	0.40	1.00	142.33	668,393.99	665,813.70	
3,135.00	8.00	179.90	3,124.77	-154.02	0.32	1.02	154.02	668,382.30	665,813.62	
3,224.00	8.70	182.90	3,212.83	-166.94	-0.01	0.93	166.94	668,369.38	665,813.29	
3,314.00	8.00	183.50	3,301.87	-179.99	-0.74	0.78	179.98	668,356.33	665,812.56	
3,403.00	6.80	184.00	3,390.13	-191.43	-1.48	1.35	191.41	668,344.89	665,811.82	
3,493.00	6.70	187.70	3,479.51	-201.94	-2.56	0.50	201.92	668,334.38	665,810.74	
3,582.00	8.10	181.40	3,567.77	-213.36	-3.40	1.82	213.33	668,322.96	665,809.90	
3,672.00	10.30	181.10	3,656.60	-227.74	-3.71	2.45	227.71	668,308.58	665,809.59	
3,761.00	10.50	181.10	3,744.14	-243.81	-4.02	0.22	243.77	668,292.51	665,809.28	
3,851.00	10.20	182.00	3,832.68	-259.97	-4.46	0.38	259.93	668,276.35	665,808.84	
3,941.00	10.20	180.40	3,921.25	-275.90	-4.79	0.31	275.86	668,260.42	665,808.51	

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Site:	Ruby Federal	MD Reference:	RKB=4009+13 @ 4022.00usft (PD 822)
Well:	Ruby Federal 29	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
4,030.00	9.80	182.40	4,008.90	-291.35	-5.16	0.60	291.31	668,244.97	665,808.14	
4,120.00	9.90	182.30	4,097.57	-306.73	-5.80	0.11	306.69	668,229.59	665,807.50	
4,209.00	9.80	182.70	4,185.26	-321.94	-6.46	0.14	321.89	668,214.38	665,806.84	
4,299.00	9.50	184.10	4,273.99	-337.00	-7.35	0.42	336.94	668,199.32	665,805.95	
4,388.00	9.90	184.10	4,361.72	-351.96	-8.42	0.45	351.89	668,184.36	665,804.88	
4,477.00	9.60	183.00	4,449.43	-367.00	-9.36	0.40	366.93	668,169.32	665,803.94	
4,567.00	8.50	181.30	4,538.31	-381.15	-9.90	1.26	381.07	668,155.17	665,803.40	
4,656.00	7.20	183.70	4,626.47	-393.29	-10.41	1.51	393.21	668,143.03	665,802.89	
4,745.00	6.30	177.10	4,714.86	-403.73	-10.52	1.33	403.65	668,132.59	665,802.78	
4,835.00	6.80	163.80	4,804.27	-413.78	-8.79	1.77	413.71	668,122.54	665,804.51	
4,924.00	5.10	159.70	4,892.79	-422.55	-5.95	1.97	422.50	668,113.77	665,807.35	
5,013.00	3.40	160.50	4,981.54	-428.75	-3.69	1.91	428.71	668,107.57	665,809.61	
5,102.00	3.50	158.50	5,070.38	-433.77	-1.81	0.18	433.74	668,102.55	665,811.49	
5,191.00	1.90	143.70	5,159.28	-437.48	0.05	1.95	437.47	668,098.84	665,813.35	
5,281.00	0.70	63.70	5,249.26	-438.44	1.43	2.12	438.44	668,097.88	665,814.73	
5,370.00	0.70	67.20	5,338.26	-437.99	2.42	0.05	438.00	668,098.33	665,815.72	
5,459.00	0.90	72.90	5,427.25	-437.57	3.59	0.24	437.59	668,098.75	665,816.89	
5,549.00	0.70	82.10	5,517.24	-437.29	4.81	0.26	437.31	668,099.03	665,818.11	
5,638.00	0.70	74.40	5,606.23	-437.07	5.87	0.11	437.10	668,099.25	665,819.17	
5,728.00	0.80	78.40	5,696.22	-436.80	7.02	0.13	436.83	668,099.52	665,820.32	
5,817.00	0.80	70.10	5,785.22	-436.46	8.21	0.13	436.51	668,099.86	665,821.51	
5,906.00	0.70	68.90	5,874.21	-436.05	9.30	0.11	436.11	668,100.27	665,822.60	
5,995.00	0.50	78.00	5,963.20	-435.78	10.19	0.25	435.84	668,100.54	665,823.49	
6,085.00	0.40	85.30	6,053.20	-435.67	10.88	0.13	435.73	668,100.65	665,824.18	
6,174.00	0.50	76.80	6,142.20	-435.55	11.57	0.13	435.62	668,100.77	665,824.87	
6,264.00	0.60	83.80	6,232.19	-435.41	12.42	0.13	435.49	668,100.91	665,825.72	
6,353.00	0.60	87.20	6,321.19	-435.34	13.35	0.04	435.42	668,100.98	665,826.65	

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Well:	Ruby Federal 29	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Database

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
6,442.00	0.50	108.10	6,410.18	-435.44	14.19	0.25	435.53	668,100.88	665,827.49	
6,531.00	0.60	102.50	6,499.18	-435.66	15.01	0.13	435.75	668,100.66	665,828.31	
6,621.00	0.70	86.40	6,589.17	-435.73	16.02	0.23	435.83	668,100.59	665,829.32	
6,710.00	0.40	107.40	6,678.17	-435.79	16.86	0.40	435.89	668,100.53	665,830.16	
6,800.00	0.70	102.30	6,768.17	-436.00	17.69	0.34	436.11	668,100.32	665,830.99	
6,934.00	0.60	120.90	6,902.16	-436.53	19.10	0.17	436.65	668,099.79	665,832.40	
6,986.00	0.60	120.90	6,954.15	-436.81	19.56	0.00	436.94	668,099.51	665,832.86	
Survey projected to 6986.00 MD										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
130.00	130.00	0.13	0.18	MWD surveys
6,986.00	6,954.15	-436.81	19.56	Survey projected to 6986.00 MD