

CONOCOPHILLIPS

Maljamar
Lea County, NM
MCA #471
VH - Job #32K1010782

RECEIVED

DEC 13 2010
HOBBSOCD

Survey: Actual

SDI Standard Survey Report

21 October, 2010

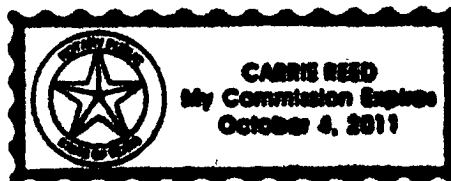
This survey is correct to the best of my knowledge and is supported by actual field data.

Richard

Notorized this date 11th of November, 2010.

Carris Reed

Notary Signature
County of Midland
State of Texas



AUG 18 2011

Scientific Drilling International, Inc.
SDI Standard Survey Report

Company:	CONOCOPHILLIPS	Local Co-ordinate Reference:	Well MCA #471
Project:	Maljamar	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	MCA #471	North Reference:	Grid
Wellbore:	VH - Job #32K1010782	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K1010782	Database:	EDM-Regulatory

Project	Maljamar		
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	Lea County, NM				
Site Position:		Northing:	652,746.75 usft	Latitude:	32° 47' 35.550 N
From:	Lat/Long	Easting:	674,166.55 usft	Longitude:	103° 45' 59.640 W
Position Uncertainty:	0 0 usft	Slot Radius:	0"	Grid Convergence:	0 31 °

Well	MCA #471, Vertical					
Well Position	+N/-S	0 0 usft	Northing:	657,891.43 usft	Latitude:	32° 48' 26 180 N
	+E/-W	0.0 usft	Easting:	679,304 42 usft	Longitude:	103° 44' 59 120 W
Position Uncertainty		0 0 usft	Wellhead Elevation:	usft	Ground Level:	0.0 usft

Wellbore	VH - Job #32K1010782				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2010	10/13/2010	7 86	60 72	49,082

Design		VH - Job #32K1010782			
Audit Notes:					
Version:		1 0	Phase:	ACTUAL	Tie On Depth: 0 0
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
		0 0	0.0	0 0	1.74

Survey Program		Date	10/21/2010		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100 0	4,186 0	Actual (VH - Job #32K1010782)	Keeper	Keeper Gyro	

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
0 0	0 00	0 31	0 0	0 0	0.0	0 00	0.0
100 0	0 40	237 76	100.0	-0.2	-0 3	237.76	0.3
200.0	0.49	275 90	200 0	-0.3	-1 0	252 08	1.1
300 0	0.41	284 99	300 0	-0.2	-1 8	263 87	1 8
400.0	0.54	292.37	400 0	0 1	-2 6	271 78	2 6
500 0	0 35	295.77	500 0	0.4	-3.3	276 82	3 3
600.0	0 17	341.10	600 0	0 7	-3.6	280 46	3 7
700 0	0 16	349.69	700.0	0.9	-3.7	284 39	3 8
800 0	0.26	334 60	800.0	1.3	-3 8	288.70	4 0
900 0	0.38	333.70	900.0	1 8	-4 0	293 86	4 4
1,000 0	0 61	349 50	1,000.0	2 6	-4 3	301.32	5 0
1,100 0	0.70	350 96	1,100.0	3.7	-4 5	309.83	5 8

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Project:	Maljamar	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	MCA #471	North Reference:	Grid
Wellbore:	VH - Job #32K1010782	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K1010782	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,200.0	0.71	355.93	1,200.0	5.0	-4.6	317.02	6.8
1,300.0	0.75	4.74	1,300.0	6.2	-4.6	323.49	7.7
1,400.0	0.84	17.66	1,399.9	7.6	-4.3	330.24	8.7
1,500.0	0.87	24.06	1,499.9	9.0	-3.8	337.04	9.7
1,600.0	0.88	29.59	1,599.9	10.3	-3.1	343.24	10.8
1,700.0	0.96	29.38	1,699.9	11.7	-2.3	348.80	12.0
1,800.0	1.32	39.04	1,799.9	13.4	-1.2	354.93	13.4
1,900.0	1.92	51.77	1,899.9	15.3	0.9	3.21	15.3
2,000.0	2.33	56.34	1,999.8	17.4	3.9	12.49	17.9
2,100.0	2.50	51.22	2,099.7	19.9	7.3	20.00	21.2
2,200.0	2.52	49.49	2,199.6	22.7	10.6	25.06	25.1
2,300.0	2.34	43.87	2,299.5	25.6	13.7	28.15	29.1
2,400.0	2.00	42.58	2,399.4	28.4	16.3	29.88	32.7
2,500.0	1.93	35.29	2,499.4	31.0	18.5	30.74	36.1
2,600.0	1.93	30.79	2,599.3	33.9	20.3	30.93	39.5
2,700.0	1.70	21.51	2,699.3	36.7	21.7	30.60	42.6
2,800.0	1.77	7.31	2,799.2	39.6	22.4	29.54	45.5
2,900.0	1.75	353.04	2,899.2	42.7	22.5	27.76	48.2
3,000.0	1.97	344.04	2,999.1	45.8	21.8	25.44	50.7
3,100.0	2.21	339.24	3,099.1	49.3	20.6	22.73	53.4
3,200.0	2.51	334.74	3,199.0	53.1	19.0	19.72	56.4
3,300.0	2.44	335.46	3,298.9	57.0	17.2	16.80	59.5
3,400.0	2.62	330.02	3,398.8	60.9	15.2	14.00	62.8
3,500.0	2.57	330.32	3,498.7	64.8	12.9	11.28	66.1
3,600.0	2.51	331.61	3,598.6	68.7	10.8	8.92	69.5
3,700.0	2.12	331.07	3,698.5	72.2	8.8	6.98	72.8
3,800.0	1.82	329.00	3,798.4	75.2	7.1	5.41	75.6
3,900.0	1.55	330.59	3,898.4	77.8	5.6	4.15	78.0
4,000.0	1.27	326.26	3,998.4	79.9	4.4	3.13	80.0
4,100.0	0.79	324.07	4,098.4	81.3	3.3	2.36	81.4
4,186.0	0.67	353.97	4,184.3	82.3	2.9	2.05	82.4



Project: Maljamar
Lea County, NM
Well: MCA #471
Wellbore: VH - Job #32K1010782
Design: VH - Job #32K1010782

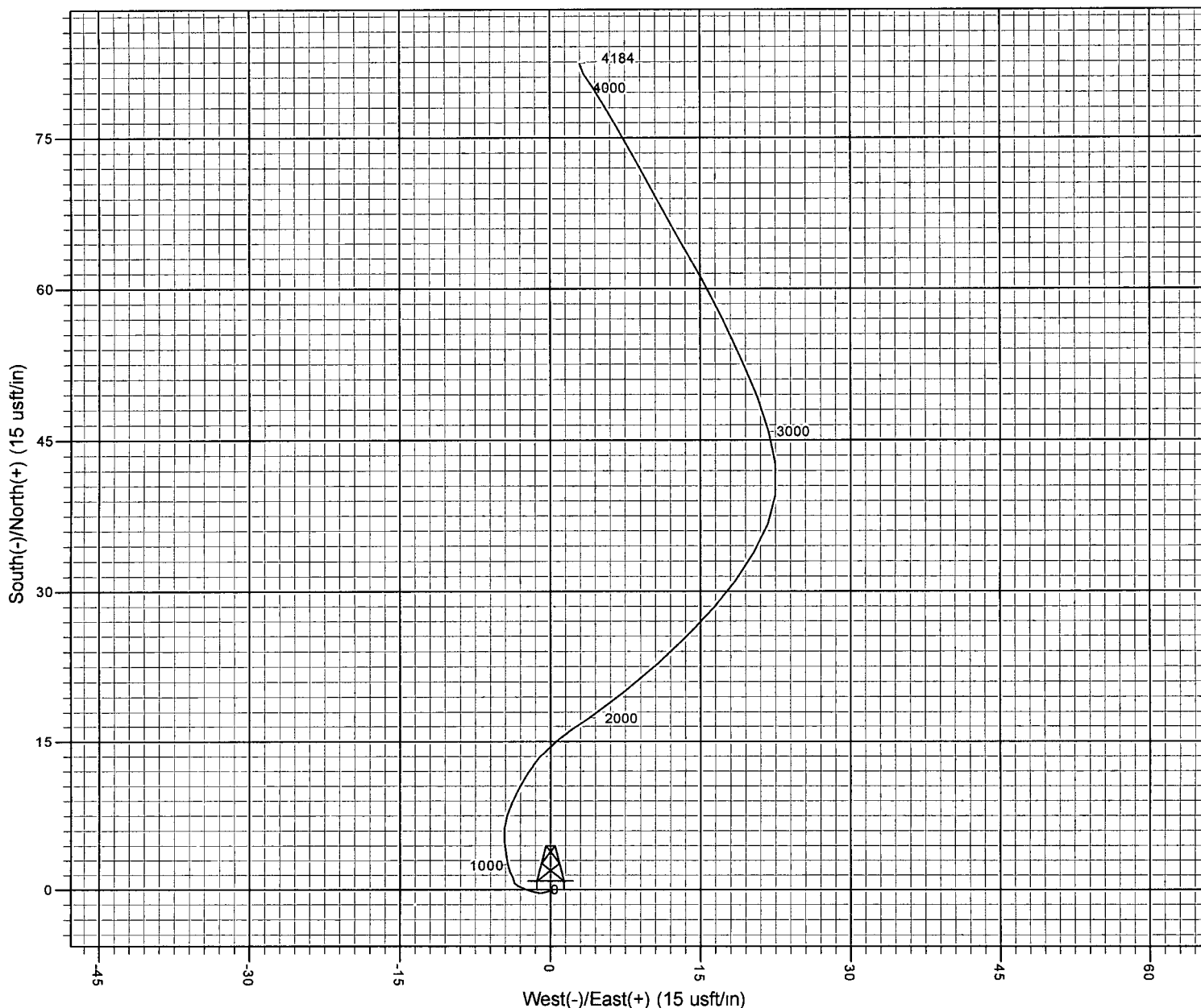


Azimuths to Grid North
True North: -0 32°
Magnetic North: 7 54°

Magnetic Field
Strength: 49081 GsnT
Dip Angle: 60.72°
Date: 10/13/2010
Model: BGGM2010

WELL DETAILS: MCA #471
WELL @ 0.0usft (Original Well Elev)
Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	657891.43	679304.42	32° 48' 26.180 N	103° 44' 59.120 W	



PROJECT DETAILS: Maljamar
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

SITE DETAILS: Lea County, NM
Site Centre Latitude: 32° 47' 35.550 N
Longitude: 103° 45' 59.640 W
Positional Uncertainty: 0 0
Convergence: 0.31
Local North: Grid