CONOCOPHILLIPS

Maljamar
Lea County, NM
MCA #472
VH - Job #32K0910724

30-025-39409
E-27-17s-32e
1980/N & 160/W

Survey: Actual

SDI Standard Survey Report

13 October, 2010

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

Notorized this date 13th of October, 2010.

Notary Signature
County of Midland
State of Texas

CASSIE REED
My Commission Expires
October 4, 2011

Scientific Drilling International, Inc.

SDI Standard Survey Report

Company:	CONOCOPHILLIPS	Local Co-ordinate Reference:	Well MCA #472
Project:	Maljamar	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	MCA #472	North Reference:	Grid
Wellbore:	VH - Job #32K0910724	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0910724	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		

Well	MCA #472, Vertical					
Well Position	+N/-S	0.0 usft	Northing:	657,879.30 usft	Latitude:	32° 48' 26.260 N
	+E/-W	0.0 usft	Easting:	675,602.82 usft	Longitude:	103° 45' 42.490 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	0.0 usft

Wellbore	VH - Job #32K0910724				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2010	9/29/2010	7.87	60.72	49,084

Design	VH - Job #32K0910724				
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	356.25	

Survey Program	Date 10/13/2010			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	4,095.0	Actual (VH - Job #32K0910724)	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	0.00	0.0	0.0	0.0	0.00	0.0
100.0	0.41	340.57	100.0	0.3	-0.1	340.57	0.4
200.0	0.29	325.52	200.0	0.9	-0.4	336.65	1.0
300.0	0.12	319.80	300.0	1.2	-0.6	333.19	1.3
400.0	0.13	330.03	400.0	1.4	-0.7	332.05	1.5
500.0	0.21	316.11	500.0	1.6	-0.9	330.34	1.8
600.0	0.14	343.86	600.0	1.8	-1.1	329.89	2.1
700.0	0.10	115.88	700.0	1.9	-1.0	331.97	2.2
800.0	0.17	184.92	800.0	1.7	-1.0	331.11	2.0
900.0	0.38	242.73	900.0	1.4	-1.3	316.53	1.9
1,000.0	0.50	271.49	1,000.0	1.3	-2.0	302.82	2.4
1,100.0	0.66	316.20	1,100.0	1.7	-2.8	301.20	3.3
1,200.0	0.73	357.30	1,200.0	2.8	-3.3	310.34	4.3
1,300.0	0.60	0.27	1,300.0	3.9	-3.3	320.09	5.1
1,400.0	0.58	357.50	1,400.0	5.0	-3.3	326.32	6.0
1,500.0	0.53	4.39	1,500.0	5.9	-3.3	330.96	6.8
1,600.0	0.83	7.52	1,600.0	7.1	-3.2	336.02	7.8

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Site:	Lea County, NM	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Well:	MCA #472	**North Reference:**	Grid
Wellbore:	VH - Job #32K0910724	**Survey Calculation Method:**	Minimum Curvature
Design:	VH - Job #32K0910724	**Database:**	EDM-Regulatory

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,700 0	1.21	44 82	1,699 9	8.6	-2.3	344 86	8.9
1,800 0	1 49	57 20	1,799 9	10 0	-0.5	357 26	10 0
1,900 0	1 90	57.95	1,899 9	11.6	2 0	9.87	11 8
2,000 0	1 85	64.75	1,999.8	13.2	4 9	20 34	14.0
2,100 0	1.61	56.11	2,099 8	14.6	7.5	27 15	16.5
2,200 0	1 27	39 44	2,199 7	16 3	9.4	29.95	18.8
2,300.0	1 35	33 63	2,299.7	18 1	10 7	30 65	21.1
2,400 0	1 11	21.45	2,399.7	20.0	11 7	30 42	23.2
2,500 0	1.05	5 93	2,499 7	21 8	12 2	29 20	25 0
2,600 0	0 98	0 17	2,599.7	23 6	12 3	27.53	26 6
2,700.0	0 91	343 43	2,699 6	25 2	12 1	25 59	27 9
2,800.0	1 04	332 41	2,799 6	26 8	11 4	23 11	29.1
2,900.0	1 02	333 27	2,899 6	28.4	10.6	20 49	30 3
3,000.0	1 12	328.63	2,999 6	30.0	9.7	17.90	31 5
3,100 0	1 27	330 22	3,099 6	31.8	8 6	15.19	32.9
3,200 0	1.38	329 25	3,199 5	33.8	7.5	12 46	34.6
3,300 0	1 48	323 33	3,299 5	35.9	6.1	9 62	36.4
3,400.0	1 65	320 99	3,399 5	38 0	4 4	6.60	38 3
3,500 0	1 72	328.19	3,499 4	40 4	2 7	3.82	40.5
3,600 0	1.67	330.58	3,599.4	42 9	1 2	1 59	43.0
3,700 0	1.48	330.11	3,699 4	45 3	-0 2	359.79	45 3
3,800.0	1 24	326 63	3,799 3	47 4	-1.4	358.30	47 4
3,900.0	0.99	322 37	3,899 3	48 9	-2.5	357 04	49 0
4,000.0	0.35	327 55	3,999 3	49.9	-3.2	356 31	50.0
4,095 0	0 65	6.09	4,094 3	50 7	-3.3	356 25	50 8

Scientific Drilling
Directional Drilling Operations

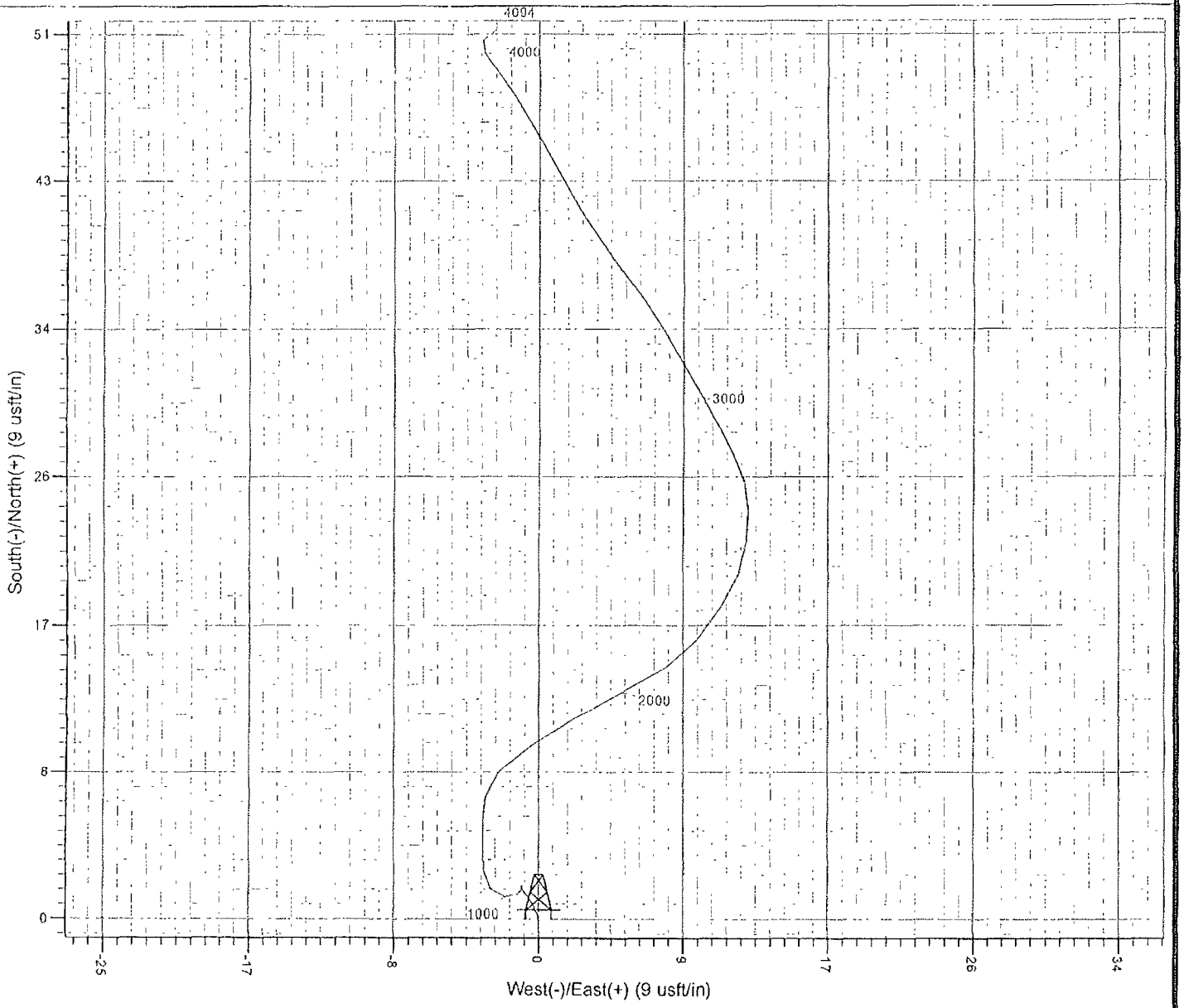
Project: Maljamar
Lea County, NM
Well: MCA #472
Wellbore: VH - Job #32K0910724
Design: VH - Job #32K0910724

Azimuths to Grid North
True North -0 31°
Magnetic North 7 56°

Magnetic Field
Strength 49084 3snT
Dip Angle 60 72°
Date 9/29/2010
Model BGGM2010

WELL DETAILS: MCA #472
WELL @ 0.0usft (Original Well Elev)
Ground Level 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	657879.30	675602.82	32° 48' 26.260 N	103° 45' 42.490 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 Uncertainity: 0 0
Convergence: 0 31
Local North: Grid