

CONOCOPHILLIPS

Maljamar

Lea County, NM

Emerald Federal #7

VH - Job #320213-KW-153

A-17-17s-32e, 990/N & 330/E
API # 30-025-40893

HOBBS OCD

MAR 26 2013

RECEIVED

Survey: Gyro

SDI Standard Survey Report

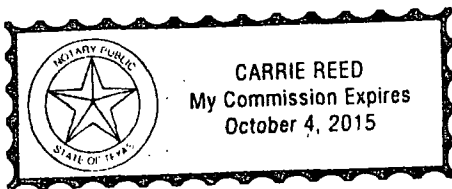
This survey is correct to the best of my knowledge and is supported by actual field data.

[Signature]

Notarized this date 11/12 of February, 2013.

[Signature]

Notary Signature
County of Midland
State of Texas



APR 16 2013

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	CONOCOPHILLIPS	Local Co-ordinate Reference:	Well Emerald Federal #7
Project:	Maljamar	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Well:	Emerald Federal #7	North Reference:	Grid
Wellbore:	VH - Job #320213-KW-153	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #320213-KW-153	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:	0.00 usft	Slot Radius:	0"	Grid Convergence:	0.31 °

Well:	Emerald Federal #7, Vertical				
Well Position	+N/-S	0.00 usft	Northing:	669,451.32 usft	Latitude: 32° 50' 21.080 N
	+E/-W	0.00 usft	Easting:	669,606.22 usft	Longitude: 103° 46' 52.040 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level: 0.00 usft

Wellbore	VH - Job #320213-KW-153				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	02/11/13	7.53	60.68	48,823

Design:	VH - Job #320213-KW-153				
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	204.63	

Survey Program		Date 02/13/13		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	6,960.00	Gyro (VH - Job #320213-KW-153)	Keeper	Keeper Gyro

Survey							
Measured Depth	Inclination	Azimuth	True Vertical	North/South	East/West	Closure Azimuth	Closure Distance
(usft)	(°)	(°)	Depth	(usft)	(usft)	(°)	(usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.28	180.89	100.00	-0.24	0.00	180.89	0.24
200.00	0.15	167.40	200.00	-0.62	0.02	178.05	0.62
300.00	0.19	346.88	300.00	-0.58	0.01	178.83	0.58
400.00	0.24	304.88	400.00	-0.30	-0.20	213.24	0.36
500.00	0.21	228.71	500.00	-0.30	-0.51	239.18	0.59
600.00	0.31	225.49	600.00	-0.61	-0.84	233.80	1.04
700.00	0.40	224.42	699.99	-1.05	-1.27	230.47	1.65
800.00	0.46	227.15	799.99	-1.57	-1.81	229.04	2.40
900.00	0.62	196.83	899.99	-2.37	-2.26	223.75	3.27
1,000.00	0.67	194.58	999.98	-3.45	-2.57	216.67	4.30
1,100.00	0.72	183.12	1,099.97	-4.64	-2.75	210.64	5.40

Scientific Drilling International, Inc.

SDI Standard Survey Report

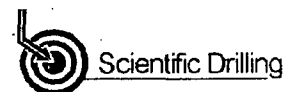


Company:	CONOCOPHILLIPS	Local Co-ordinate Reference:	Well Emerald Federal #7
Project:	Majamar	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Well:	Emerald Federal #7	North Reference:	Grid
Wellbore:	VH - Job #320213-KW-153	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #320213-KW-153	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,200.00	0.61	173.22	1,199.97	-5.80	-2.72	205.14	6.40
1,300.00	0.60	147.38	1,299.96	-6.77	-2.38	199.34	7.17
1,400.00	0.73	117.35	1,399.96	-7.50	-1.53	191.51	7.66
1,500.00	1.00	90.50	1,499.94	-7.80	-0.09	180.66	7.80
1,600.00	1.23	75.08	1,599.93	-7.53	1.82	166.42	7.75
1,700.00	1.75	63.74	1,699.89	-6.58	4.23	147.29	7.82
1,800.00	1.82	62.37	1,799.84	-5.17	7.00	126.43	8.70
1,900.00	1.79	62.99	1,899.79	-3.72	9.80	110.80	10.48
2,000.00	1.76	65.05	1,999.75	-2.37	12.59	100.65	12.81
2,100.00	1.58	71.01	2,099.70	-1.27	15.28	94.75	15.33
2,200.00	1.19	76.00	2,199.67	-0.57	17.59	91.86	17.60
2,300.00	0.98	75.92	2,299.66	-0.11	19.43	90.33	19.43
2,400.00	0.75	90.29	2,399.64	0.09	20.91	89.74	20.91
2,500.00	0.72	91.96	2,499.64	0.07	22.20	89.82	22.20
2,600.00	0.56	89.54	2,599.63	0.05	23.31	89.87	23.31
2,700.00	0.24	99.69	2,699.63	0.02	24.01	89.95	24.01
2,800.00	0.08	86.44	2,799.63	-0.01	24.28	90.03	24.28
2,900.00	0.19	147.20	2,899.63	-0.15	24.44	90.34	24.44
3,000.00	0.04	240.88	2,999.63	-0.30	24.50	90.71	24.50
3,100.00	0.13	169.52	3,099.63	-0.43	24.49	91.01	24.50
3,200.00	0.31	229.57	3,199.63	-0.72	24.31	91.69	24.32
3,300.00	0.58	230.33	3,299.62	-1.22	23.71	92.94	23.74
3,400.00	0.80	227.90	3,399.62	-2.01	22.80	95.03	22.89
3,500.00	0.99	221.14	3,499.60	-3.13	21.72	98.19	21.94
3,600.00	1.14	215.74	3,599.59	-4.58	20.57	102.56	21.07
3,700.00	1.16	218.79	3,699.57	-6.18	19.35	107.71	20.32
3,800.00	1.15	220.54	3,799.55	-7.73	18.07	113.17	19.65
3,900.00	1.00	223.07	3,899.53	-9.13	16.82	118.50	19.14
4,000.00	1.08	219.44	3,999.51	-10.50	15.62	123.90	18.82
4,100.00	1.12	223.87	4,099.49	-11.93	14.35	129.74	18.66
4,200.00	1.13	222.62	4,199.47	-13.36	13.00	135.78	18.64
4,300.00	1.15	222.31	4,299.45	-14.83	11.66	141.82	18.86
4,400.00	1.14	228.27	4,399.43	-16.23	10.24	147.75	19.19
4,500.00	1.17	239.91	4,499.41	-17.41	8.62	153.66	19.42
4,600.00	1.13	233.13	4,599.39	-18.51	6.94	159.44	19.77
4,700.00	1.13	237.42	4,699.37	-19.63	5.32	164.83	20.34
4,800.00	1.04	232.14	4,799.36	-20.72	3.78	169.67	21.06
4,900.00	0.82	220.33	4,899.34	-21.82	2.60	173.21	21.98
5,000.00	0.71	245.91	4,999.33	-22.62	1.57	176.03	22.67
5,100.00	0.73	230.73	5,099.33	-23.28	0.51	178.75	23.28
5,200.00	0.66	228.97	5,199.32	-24.06	-0.42	181.00	24.06
5,300.00	0.60	214.51	5,299.31	-24.87	-1.15	182.65	24.89
5,400.00	0.67	230.68	5,399.31	-25.67	-1.90	184.23	25.74
5,500.00	0.62	234.16	5,499.30	-26.36	-2.79	186.04	26.50

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SDI Standard Survey Report



Company:	CONOCOPHILLIPS	Local/Co-ordinate Reference:	Well Emerald Federal #7
Project:	Maljamar	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Well:	Emerald Federal #7	North Reference:	Grid
Wellbore:	VH - Job #320213-KW-153	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #320213-KW-153	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,600.00	0.54	257.90	5,599.30	-26.77	-3.69	187.84	27.03
5,700.00	0.85	224.59	5,699.29	-27.40	-4.67	189.67	27.79
5,800.00	0.82	231.80	5,799.28	-28.37	-5.75	191.46	28.95
5,900.00	0.90	222.51	5,899.27	-29.39	-6.85	193.11	30.18
6,000.00	0.85	231.55	5,999.26	-30.43	-7.96	194.65	31.45
6,100.00	0.57	253.67	6,099.25	-31.03	-9.02	196.20	32.32
6,200.00	0.60	256.60	6,199.24	-31.29	-10.00	197.73	32.85
6,300.00	0.56	273.60	6,299.24	-31.38	-11.00	199.31	33.26
6,400.00	0.52	275.64	6,399.23	-31.31	-11.94	200.87	33.51
6,500.00	0.39	265.37	6,499.23	-31.29	-12.73	202.14	33.78
6,600.00	0.52	256.46	6,599.23	-31.43	-13.51	203.26	34.21
6,700.00	0.21	209.32	6,699.22	-31.69	-14.04	203.90	34.66
6,800.00	0.25	217.59	6,799.22	-32.02	-14.26	204.01	35.06
6,900.00	0.21	258.38	6,899.22	-32.23	-14.58	204.33	35.38
6,960.00	0.30	242.67	6,959.22	-32.33	-14.82	204.63	35.57

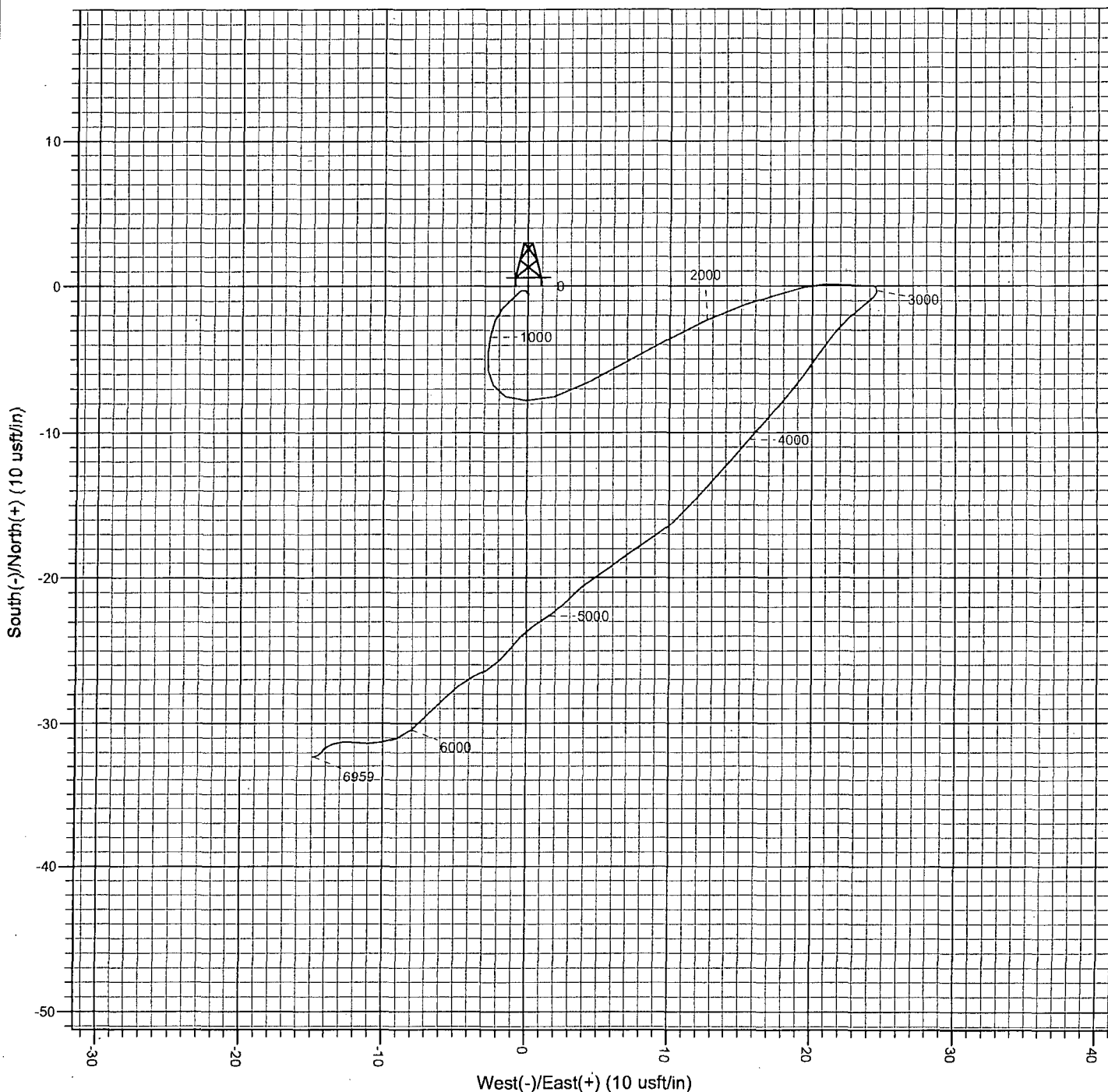


Scientific Drilling

Project: Maljamar
Lea County, NM
Well: Emerald Federal #7
Wellbore: VH - Job #320213-KW-153
Design: VH - Job #320213-KW-153

WELL DETAILS: Emerald Federal #7
WELL @ 0.00usft (Original Well Elev)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	669451.32	669606.22	32° 50' 21.080 N	103° 46' 52.040 W	



PROJECT DETAILS: Maljamar	SITE DETAILS: Lea County, NM
Geodetic System: US State Plane 1927 (Exact solution)	Site Centre Latitude: 32° 47' 35.550 N
Datum: NAD 1927 (NADCON CONUS)	Longitude: 103° 45' 59.640 W
Ellipsoid: Clarke 1866	Positional Uncertainty: 0.00
Zone: New Mexico East 3001	Convergence: 0.31
System Datum: Mean Sea Level	Local North: Grid