

15 41138

NM OIL CONSERVATION
ARTESIA DISTRICT

MAY 11 2015

OXY

RECEIVED

Eddy County, NM (NAD 27 NME)

Cypress 28 Fed 6H

Cypress 28 Fed 6H

OH

Design: OH

Standard Survey Report

26 January, 2015

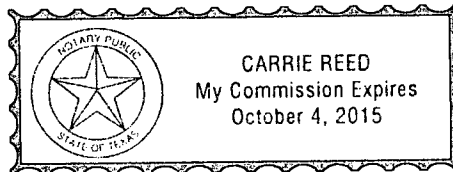
This survey is correct to the best of my knowledge and is supported by actual field data.

Richard

Notarized this date 4th of March, 2015.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling

www.scientificdrilling.com

Survey Report

Company:	OXY	Local Co-ordinate Reference:	Well Cypress 28 Fed 6H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3045.8usft
Site:	Cypress 28 Fed 6H	MD Reference:	KB @ 3045.8usft
Well:	Cypress 28 Fed 6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Project:	Eddy County, NM (NAD 27 NME); 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:	Cypress 28 Fed 6H		
Site Position:		Northing:	461,885.00 usft
From:	Map	Easting:	605,669.20 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 16' 9.754 N
		Longitude:	103° 59' 29.244 W
		Grid Convergence:	0.18 °

Well:	Cypress 28 Fed 6H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 16' 9.754 N
		Longitude:	103° 59' 29.244 W
		Ground Level:	3,020.8 usft

Wellbore:	OH		
Magnetics:	Model Name	Sample Date	Declination
			(°)
	HDGM	1/9/2015	7.45
			Dip Angle
			(°)
			60.15
			Field Strength
			(nT)
			48,362

Design:	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			355.91

Survey Program:	Date: 1/25/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
503.0	11,425.0	SDI MWD (OH)	SDI MWD
			Description
			SDI MWD - Standard ver 1.0.1

Survey:	Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	503.0	0.81	129.34	503.0	-2.3	2.7	-2.4	0.16	0.16	0.00
	596.0	1.01	105.48	596.0	-2.9	4.0	-3.2	0.46	0.22	-25.66
	686.0	0.28	212.89	686.0	-3.3	4.7	-3.6	1.25	-0.81	119.34
	776.0	0.74	177.21	776.0	-4.1	4.6	-4.4	0.60	0.51	-39.64
	867.0	0.61	136.00	867.0	-5.0	5.0	-5.3	0.54	-0.14	-45.29
	958.0	1.02	253.65	958.0	-5.6	4.5	-5.9	1.55	0.45	129.29
	1,049.0	1.31	249.05	1,048.9	-6.2	2.8	-6.3	0.33	0.32	-5.05
	1,144.0	1.16	274.28	1,143.9	-6.5	0.8	-6.5	0.59	-0.16	26.56
	1,238.0	1.13	272.30	1,237.9	-6.4	-1.1	-6.3	0.05	-0.03	-2.11

Survey Report

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Site:	Cypress 28 Fed 6H	MD Reference:	KB @ 3045.8usft
Well:	Cypress 28 Fed 6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,332.0	0.95	239.05	1,331.9	-6.7	-2.7	-6.5	0.66	-0.19	-35.37
1,426.0	1.10	249.76	1,425.9	-7.4	-4.2	-7.1	0.26	0.16	11.39
1,520.0	1.22	252.84	1,519.8	-8.1	-6.0	-7.6	0.14	0.13	3.28
1,615.0	1.38	254.64	1,614.8	-8.7	-8.1	-8.1	0.17	0.17	1.89
1,709.0	1.38	256.62	1,708.8	-9.2	-10.2	-8.5	0.05	0.00	2.11
1,803.0	1.54	256.71	1,802.8	-9.8	-12.6	-8.8	0.17	0.17	0.10
1,897.0	1.63	254.40	1,896.7	-10.4	-15.1	-9.3	0.12	0.10	-2.46
1,992.0	1.52	253.79	1,991.7	-11.1	-17.6	-9.9	0.12	-0.12	-0.64
2,086.0	0.67	277.29	2,085.7	-11.4	-19.3	-10.0	1.00	-0.90	25.00
2,180.0	0.30	233.69	2,179.7	-11.5	-20.1	-10.0	0.53	-0.39	-46.38
2,275.0	0.60	148.38	2,274.7	-12.1	-20.0	-10.6	0.68	0.32	-89.80
2,369.0	0.78	148.35	2,368.7	-13.0	-19.4	-11.6	0.19	0.19	-0.03
2,463.0	1.34	136.35	2,462.6	-14.4	-18.3	-13.0	0.64	0.60	-12.77
2,558.0	2.52	117.01	2,557.6	-16.1	-15.7	-15.0	1.40	1.24	-20.36
2,652.0	2.86	122.40	2,651.5	-18.3	-11.9	-17.4	0.45	0.36	5.73
2,746.0	1.99	138.25	2,745.4	-20.8	-8.8	-20.1	1.16	-0.93	16.86
2,841.0	1.74	141.35	2,840.4	-23.1	-6.8	-22.6	0.28	-0.26	3.26
2,966.0	1.29	138.38	2,965.3	-25.7	-4.7	-25.3	0.37	-0.36	-2.38
3,116.0	1.14	129.73	3,115.3	-27.9	-2.4	-27.6	0.16	-0.10	-5.77
3,211.0	1.28	130.91	3,210.3	-29.2	-0.9	-29.1	0.15	0.15	1.24
3,305.0	0.64	127.91	3,304.2	-30.2	0.3	-30.1	0.68	-0.68	-3.19
3,399.0	0.78	118.32	3,398.2	-30.8	1.3	-30.8	0.19	0.15	-10.20
3,493.0	0.58	107.83	3,492.2	-31.3	2.3	-31.4	0.25	-0.21	-11.16
3,587.0	1.23	152.12	3,586.2	-32.3	3.2	-32.5	0.97	0.69	47.12
3,681.0	2.68	161.77	3,680.2	-35.3	4.4	-35.5	1.58	1.54	10.27
3,776.0	4.21	167.46	3,775.0	-40.8	5.8	-41.1	1.65	1.61	5.99
3,870.0	5.81	173.10	3,868.6	-48.9	7.1	-49.3	1.78	1.70	6.00
3,964.0	7.05	175.65	3,962.0	-59.4	8.2	-59.8	1.35	1.32	2.71
4,058.0	8.54	176.07	4,055.2	-72.1	9.1	-72.6	1.59	1.59	0.45
4,152.0	8.79	175.62	4,148.1	-86.2	10.1	-86.7	0.28	0.27	-0.48
4,247.0	9.86	176.25	4,241.8	-101.6	11.2	-102.1	1.13	1.13	0.66
4,341.0	9.42	176.70	4,334.5	-117.3	12.2	-117.8	0.47	-0.47	0.48
4,435.0	8.81	176.64	4,427.3	-132.1	13.0	-132.7	0.65	-0.65	-0.06
4,529.0	8.22	177.10	4,520.3	-146.0	13.8	-146.7	0.63	-0.63	0.49
4,624.0	8.92	174.58	4,614.2	-160.2	14.8	-160.8	0.84	0.74	-2.65
4,718.0	8.84	174.73	4,707.1	-174.6	16.2	-175.3	0.09	-0.09	0.16
4,812.0	8.99	174.29	4,800.0	-189.1	17.6	-189.9	0.18	0.16	-0.47
4,906.0	8.85	174.21	4,892.8	-203.6	19.0	-204.4	0.15	-0.15	-0.09
5,000.0	8.52	173.08	4,985.7	-217.7	20.6	-218.6	0.40	-0.35	-1.20
5,094.0	7.81	173.27	5,078.8	-231.0	22.2	-232.0	0.76	-0.76	0.20
5,189.0	7.28	174.22	5,173.0	-243.4	23.5	-244.4	0.57	-0.56	1.00
5,283.0	7.01	175.58	5,266.2	-255.0	24.6	-256.1	0.34	-0.29	1.45
5,377.0	5.13	180.88	5,359.7	-264.9	25.0	-266.0	2.08	-2.00	5.64
5,471.0	2.79	178.28	5,453.5	-271.4	25.0	-272.5	2.50	-2.49	-2.77

Survey Report

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Site:	Cypress 28 Fed 6H	MD Reference:	KB @ 3045.8usft
Well:	Cypress 28 Fed 6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,566.0	0.42	200.96	5,548.4	-274.1	24.9	-275.1	2.53	-2.49	23.87	
5,660.0	0.45	281.55	5,642.4	-274.3	24.4	-275.4	0.60	0.03	85.73	
5,754.0	0.45	271.68	5,736.4	-274.2	23.7	-275.2	0.08	0.00	-10.50	
5,849.0	0.28	301.52	5,831.4	-274.1	23.1	-275.0	0.26	-0.18	31.41	
5,933.0	0.31	294.54	5,915.4	-273.9	22.7	-274.8	0.06	0.04	-8.31	
6,047.0	5.83	5.49	6,029.2	-268.0	23.0	-269.0	5.03	4.84	62.24	
6,136.0	16.11	5.13	6,116.5	-251.2	24.6	-252.3	11.55	11.55	-0.40	
6,227.0	25.58	354.09	6,201.5	-219.0	23.7	-220.1	11.22	10.41	-12.13	
6,320.0	33.36	356.63	6,282.4	-173.4	20.1	-174.4	8.47	8.37	2.73	
6,410.0	41.59	355.64	6,353.7	-118.8	16.4	-119.7	9.17	9.14	-1.10	
6,501.0	49.07	354.27	6,417.7	-54.4	10.6	-55.0	8.29	8.22	-1.51	
6,595.0	55.98	356.12	6,474.8	19.9	4.4	19.5	7.51	7.35	1.97	
6,690.0	62.59	359.82	6,523.3	101.5	1.6	101.1	7.72	6.96	3.89	
6,784.0	70.55	359.92	6,560.7	187.6	1.4	187.1	8.47	8.47	0.11	
6,878.0	81.32	356.56	6,583.5	278.6	-1.4	278.0	11.97	11.46	-3.57	
6,972.0	85.57	355.50	6,594.2	371.8	-7.9	371.4	4.66	4.52	-1.13	
7,066.0	90.27	352.98	6,597.6	465.2	-17.3	465.2	5.67	5.00	-2.68	
7,161.0	90.03	352.00	6,597.4	559.4	-29.7	560.1	1.06	-0.25	-1.03	
7,255.0	90.40	352.00	6,597.0	652.5	-42.8	653.9	0.39	0.39	0.00	
7,349.0	89.80	355.14	6,596.9	745.9	-53.3	747.8	3.40	-0.64	3.34	
7,443.0	89.93	355.48	6,597.1	839.5	-61.0	841.8	0.39	0.14	0.36	
7,538.0	89.83	355.05	6,597.3	934.2	-68.9	936.8	0.46	-0.11	-0.45	
7,632.0	88.99	354.16	6,598.3	1,027.8	-77.7	1,030.7	1.30	-0.89	-0.95	
7,726.0	90.71	357.15	6,598.5	1,121.5	-84.8	1,124.7	3.67	1.83	3.18	
7,820.0	91.01	356.67	6,597.1	1,215.4	-89.9	1,218.7	0.60	0.32	-0.51	
7,914.0	92.18	355.39	6,594.5	1,309.1	-96.4	1,312.6	1.84	1.24	-1.36	
8,009.0	90.37	355.43	6,592.4	1,403.8	-104.0	1,407.6	1.91	-1.91	0.04	
8,103.0	89.06	357.05	6,592.8	1,497.6	-110.2	1,501.6	2.22	-1.39	1.72	
8,197.0	89.90	356.73	6,593.7	1,591.4	-115.3	1,595.6	0.96	0.89	-0.34	
8,291.0	92.05	357.49	6,592.1	1,685.3	-120.0	1,689.5	2.43	2.29	0.81	
8,385.0	92.92	357.30	6,588.0	1,779.1	-124.3	1,783.4	0.95	0.93	-0.20	
8,479.0	90.97	356.03	6,584.8	1,872.9	-129.7	1,877.4	2.48	-2.07	-1.35	
8,574.0	89.13	356.40	6,584.7	1,967.7	-136.0	1,972.3	1.98	-1.94	0.39	
8,668.0	90.94	357.06	6,584.7	2,061.5	-141.4	2,066.3	2.05	1.93	0.70	
8,762.0	88.39	355.66	6,585.2	2,155.3	-147.3	2,160.3	3.09	-2.71	-1.49	
8,870.0	89.30	355.88	6,587.4	2,263.0	-155.3	2,268.3	0.87	0.84	0.20	
8,964.0	88.69	352.79	6,589.0	2,356.5	-164.6	2,362.2	3.35	-0.65	-3.29	
9,058.0	91.48	355.94	6,588.9	2,450.0	-173.8	2,456.2	4.48	2.97	3.35	
9,153.0	90.37	352.62	6,587.4	2,544.5	-183.3	2,551.1	3.68	-1.17	-3.49	
9,247.0	91.51	356.10	6,585.8	2,638.0	-192.5	2,645.1	3.90	1.21	3.70	
9,341.0	90.13	354.51	6,584.5	2,731.7	-200.2	2,739.0	2.24	-1.47	-1.69	
9,435.0	89.13	356.32	6,585.1	2,825.4	-207.7	2,833.0	2.20	-1.06	1.93	
9,530.0	88.62	358.42	6,587.0	2,920.3	-212.1	2,928.0	2.27	-0.54	2.21	

Survey Report

Company:	OXY	Local Co-ordinate Reference:	Well Cypress 28 Fed 6H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3045.8usft
Site:	Cypress 28 Fed 6H	MD Reference:	KB @ 3045.8usft
Well:	Cypress 28 Fed 6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,624.0	90.17	358.46	6,588.0	3,014.2	-214.6	3,021.9	1.65	1.65	0.04
9,718.0	92.73	358.63	6,585.6	3,108.2	-217.0	3,115.7	2.73	2.72	0.18
9,813.0	90.10	358.89	6,583.2	3,203.1	-219.1	3,210.6	2.78	-2.77	0.27
9,907.0	89.80	359.13	6,583.3	3,297.1	-220.7	3,304.4	0.41	-0.32	0.26
10,001.0	90.67	358.22	6,582.9	3,391.1	-222.9	3,398.3	1.34	0.93	-0.97
10,095.0	88.39	356.13	6,583.7	3,484.9	-227.5	3,492.3	3.29	-2.43	-2.22
10,190.0	90.47	356.89	6,584.6	3,579.8	-233.3	3,587.3	2.33	2.19	0.80
10,284.0	90.13	356.36	6,584.1	3,673.6	-238.8	3,681.3	0.67	-0.36	-0.56
10,378.0	91.21	357.44	6,583.0	3,767.4	-243.9	3,775.2	1.62	1.15	1.15
10,472.0	90.17	357.34	6,581.9	3,861.3	-248.2	3,869.2	1.11	-1.11	-0.11
10,567.0	90.21	357.01	6,581.6	3,956.2	-252.9	3,964.2	0.35	0.04	-0.35
10,661.0	90.17	354.52	6,581.3	4,050.0	-259.8	4,058.2	2.65	-0.04	-2.65
10,755.0	88.05	353.40	6,582.7	4,143.4	-269.7	4,152.1	2.55	-2.26	-1.19
10,849.0	91.25	354.98	6,583.3	4,236.9	-279.2	4,246.0	3.80	3.40	1.68
10,944.0	89.26	354.17	6,582.9	4,331.5	-288.2	4,341.0	2.26	-2.09	-0.85
11,038.0	91.68	353.92	6,582.1	4,425.0	-297.9	4,434.9	2.59	2.57	-0.27
11,132.0	89.16	353.44	6,581.4	4,518.4	-308.3	4,528.9	2.73	-2.68	-0.51
11,226.0	90.20	353.61	6,582.0	4,611.8	-318.9	4,622.8	1.12	1.11	0.18
11,275.1	91.57	354.10	6,581.2	4,660.6	-324.1	4,671.9	2.97	2.80	1.00
C28 F6H LTP									
11,320.0	92.83	354.55	6,579.5	4,705.2	-328.6	4,716.7	2.97	2.80	1.00
11,374.0	93.00	354.28	6,576.7	4,758.9	-333.8	4,770.6	0.59	0.31	-0.50
MWD Survey									
11,425.0	93.00	354.28	6,574.1	4,809.6	-338.9	4,821.5	0.00	0.00	0.00
Projection to Bit/TD - C28 F6H BHL									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,374.0	6,576.7	4,758.9	-333.8	MWD Survey
11,425.0	6,574.1	4,809.6	-338.9	Projection to Bit/TD

Checked By: _____	Approved By: _____	Date: _____
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Cypress 28 Fed 6H
Eddy County, NM (NAD 27 NME)
Northing: 461885.00
Easting: 605669.20
Plan #1



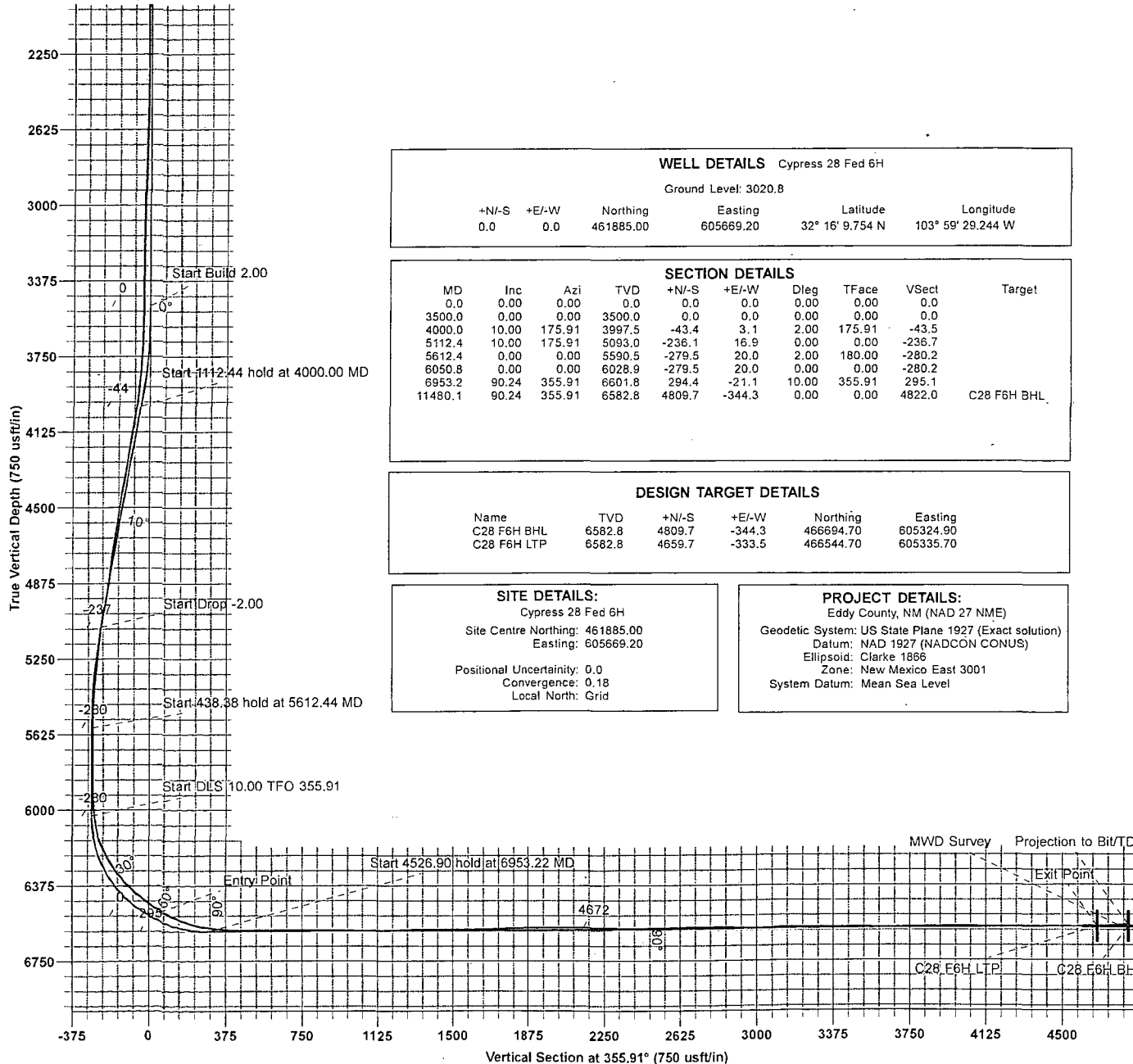
Azimuths to Grid North
True North: -0.18°
Magnetic North: 7.27°

Magnetic Field
Strength: 48362.2snT
Dip Angle: 60.15°
Date: 1/9/2015
Model: HDGM

To convert Magnetic North to Grid, Add 7.27°
To convert True North to Grid, Subtract 0.18°



KB @ 3045.8usft
Gr @ 3020.8



WELL DETAILS Cypress 28 Fed 6H						
Ground Level: 3020.8						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	461885.00	605669.20	32° 16' 9.754 N	103° 59' 29.244 W	

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
3500.0	0.00	0.00	3500.0	0.0	0.0	0.00	0.00	0.0	
4000.0	10.00	175.91	3997.5	-43.4	3.1	2.00	175.91	-43.5	
5112.4	10.00	175.91	5093.0	-236.1	16.9	0.00	0.00	-236.7	
5612.4	0.00	0.00	5590.5	-279.5	20.0	2.00	180.00	-280.2	
6050.8	0.00	0.00	6028.9	-279.5	20.0	0.00	0.00	-280.2	
6953.2	90.24	355.91	6601.8	294.4	-21.1	10.00	355.91	295.1	
11480.1	90.24	355.91	6582.8	4809.7	-344.3	0.00	0.00	4822.0	C28 F6H BHL

DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
C28 F6H BHL	6582.8	4809.7	-344.3	466694.70	605324.90
C28 F6H LTP	6582.8	4659.7	-333.5	466544.70	605335.70

SITE DETAILS:	
Cypress 28 Fed 6H	
Site Centre Northing: 461885.00	
Easting: 605669.20	
Positional Uncertainty: 0.0	
Convergence: 0.18	
Local North: Grid	

PROJECT DETAILS:	
Eddy County, NM (NAD 27 NME)	
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	

