



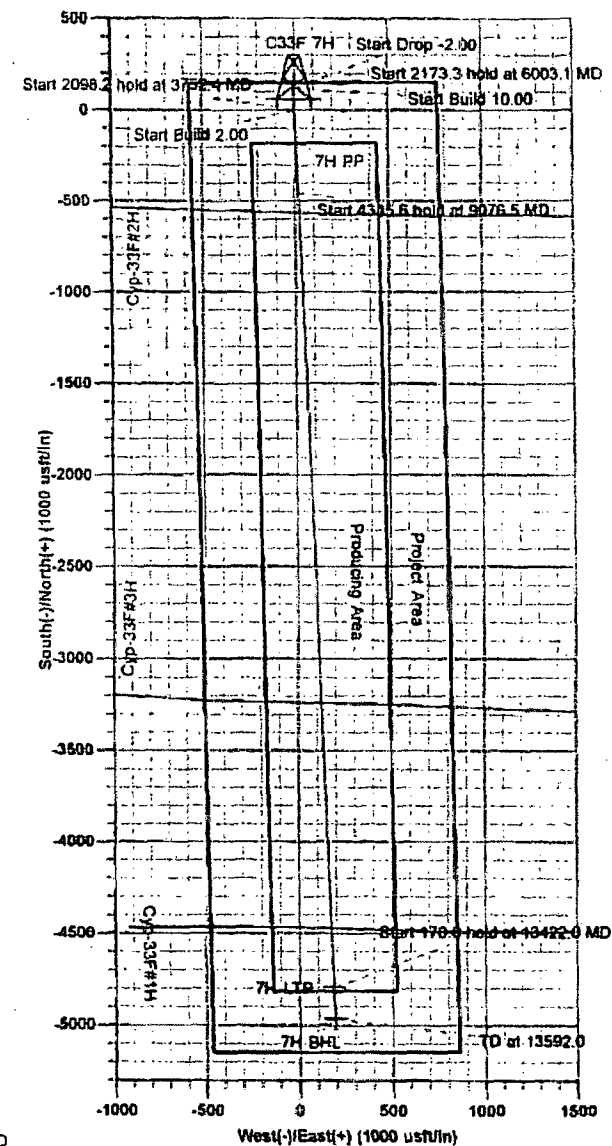
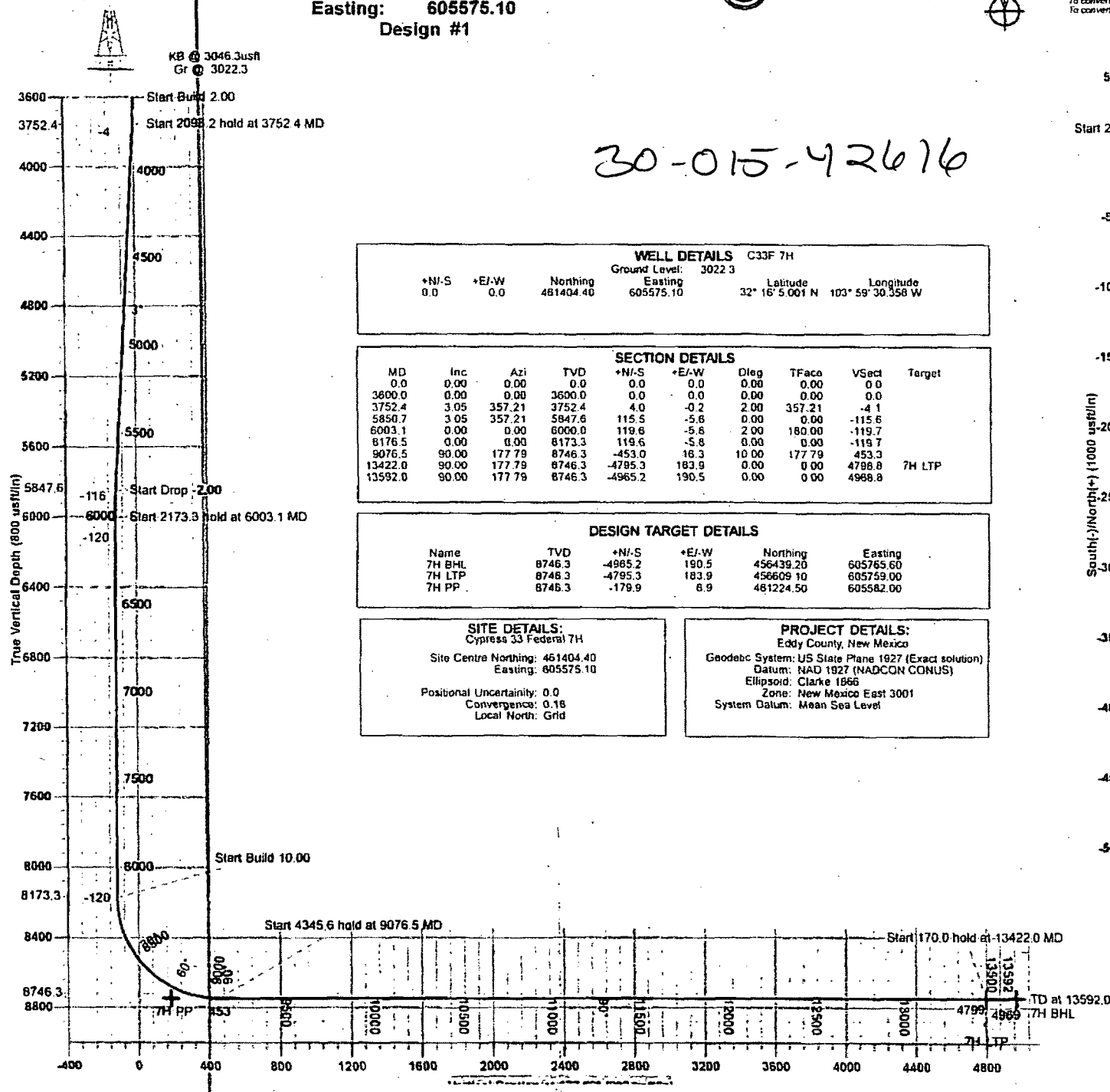
C33F 7H
Eddy County, New Mexico
Northing: 461404.40
Easting: 605575.10
Design #1



To convert a Magnetic Direction to a Grid Direction, Add 7.21°
To convert a True Direction to a Grid Direction, Subtract 0.18°

Azimuth to Grid North
True North: -0.1°
Magnetic North: 7.2°

Magnetic Field
Strength: 48284.7 nT
Dip Angle: 60.0°
Date: 08/11/2011
Model: IGRF2011





Scientific Drilling Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C33F 7H
Company:	OXY	TVD Reference:	KB @ 3046.3usft
Project:	Eddy County, New Mexico	MD Reference:	KB @ 3046.3usft
Site:	Cypress 33 Federal 7H	North Reference:	Grid
Well:	C33F 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project:	Eddy County, New Mexico, 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 33 Federal 7H		
Site Position:	Northings:	461,404.40 usft	Latitude: 32° 16' 5.001 N
From: Map	Easting:	605,575.10 usft	Longitude: 103° 59' 30.358 W
Position Uncertainty:	0.0 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.18 °

Well:	C33F 7H		
Well Position	+N-S	0.0 usft	Northings: 461,404.40 usft
	+E-W	0.0 usft	Easting: 605,575.10 usft
Position Uncertainty	0.0 usft	Wellhead Elevation: 0.0 usft	Ground Level: 3,022.3 usft

Wellbore:	Wellbore #1		
Magnetics:	Model Name	Sample Date	Declination
	IGRF2010	08/11/14	7.40
			Dip Angle 60.08
			Field Strength 48,285

Design:	Design #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction 177.80

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,752.4	3.05	357.21	3,752.4	4.0	-0.2	2.00	2.00	0.00	357.21	
5,850.7	3.05	357.21	5,847.6	115.5	-5.6	0.00	0.00	0.00	0.00	
6,003.1	0.00	0.00	6,000.0	119.6	-5.8	2.00	-2.00	0.00	180.00	
8,176.5	0.00	0.00	8,173.3	119.6	-5.8	0.00	0.00	0.00	0.00	
9,076.5	90.00	177.79	8,746.3	-453.0	16.3	10.00	10.00	0.00	177.79	
13,422.0	90.00	177.79	8,746.3	-4,795.3	163.9	0.00	0.00	0.00	0.00	7H LTP
13,592.0	90.00	177.79	8,746.3	-4,965.2	190.5	0.00	0.00	0.00	0.00	



Scientific Drilling
Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C33F 7H
Company:	OXY	TVD Reference:	KB @ 3046.3usft
Project:	Eddy County, New Mexico	MD Reference:	KB @ 3046.3usft
Site:	Cypress 33 Federal 7H	North Reference:	Grid
Well:	C33F 7H	Survey/Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned 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	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,700.0	2.00	357.21	3,700.0	1.7	-0.1	-1.7	2.00	2.00	0.00	
3,752.4	3.05	357.21	3,752.4	4.0	-0.2	-4.1	2.00	2.00	0.00	
3,800.0	3.05	357.21	3,799.9	6.6	-0.3	-6.6	0.00	0.00	0.00	
3,900.0	3.05	357.21	3,899.7	11.9	-0.6	-11.9	0.00	0.00	0.00	
4,000.0	3.05	357.21	3,999.6	17.2	-0.8	-17.2	0.00	0.00	0.00	
4,100.0	3.05	357.21	4,099.4	22.5	-1.1	-22.5	0.00	0.00	0.00	
4,200.0	3.05	357.21	4,199.3	27.8	-1.4	-27.9	0.00	0.00	0.00	
4,300.0	3.05	357.21	4,299.2	33.1	-1.6	-33.2	0.00	0.00	0.00	
4,400.0	3.05	357.21	4,399.0	38.4	-1.9	-38.5	0.00	0.00	0.00	
4,500.0	3.05	357.21	4,498.9	43.8	-2.1	-43.8	0.00	0.00	0.00	
4,600.0	3.05	357.21	4,598.7	49.1	-2.4	-49.1	0.00	0.00	0.00	
4,700.0	3.05	357.21	4,698.6	54.4	-2.6	-54.4	0.00	0.00	0.00	
4,800.0	3.05	357.21	4,798.4	59.7	-2.9	-59.8	0.00	0.00	0.00	
4,900.0	3.05	357.21	4,898.3	65.0	-3.2	-65.1	0.00	0.00	0.00	
5,000.0	3.05	357.21	4,998.2	70.3	-3.4	-70.4	0.00	0.00	0.00	
5,100.0	3.05	357.21	5,098.0	75.6	-3.7	-75.7	0.00	0.00	0.00	
5,200.0	3.05	357.21	5,197.9	80.9	-3.9	-81.0	0.00	0.00	0.00	



Scientific Drilling
Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C33F 7H
Company:	OXY	TVD Reference:	KB @ 3046.3usft
Project:	Eddy County, New Mexico	MD Reference:	KB @ 3046.3usft
Site:	Cypress 33 Federal 7H	North Reference:	Grid
Well:	C33F 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned 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)	
5,300.0	3.05	357.21	5,297.7	86.3	-4.2	-86.4	0.00	0.00	0.00	
5,400.0	3.05	357.21	5,397.6	91.6	-4.5	-91.7	0.00	0.00	0.00	
5,500.0	3.05	357.21	5,497.5	96.9	-4.7	-97.0	0.00	0.00	0.00	
5,600.0	3.05	357.21	5,597.3	102.2	-5.0	-102.3	0.00	0.00	0.00	
5,700.0	3.05	357.21	5,697.2	107.5	-5.2	-107.6	0.00	0.00	0.00	
5,800.0	3.05	357.21	5,797.0	112.8	-5.5	-112.9	0.00	0.00	0.00	
5,850.7	3.05	357.21	5,847.6	115.5	-5.6	-115.6	0.00	0.00	0.00	
5,900.0	2.05	357.21	5,896.9	117.7	-5.7	-117.8	2.00	-2.00	0.00	
6,003.1	0.00	0.00	6,000.0	119.6	-5.8	-119.7	2.00	-2.00	0.00	
6,100.0	0.00	0.00	6,096.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,196.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,296.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,396.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,496.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,596.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,696.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,796.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,896.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,996.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,096.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
7,200.0	0.00	0.00	7,196.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,296.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,396.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,496.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,596.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,696.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,796.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,896.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,996.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,096.9	119.6	-5.8	-119.7	0.00	0.00	0.00	
8,176.5	0.00	0.00	8,173.3	119.6	-5.8	-119.7	0.00	0.00	0.00	
8,200.0	2.35	177.79	8,196.9	119.1	-5.8	-119.2	10.00	10.00	0.00	
8,250.0	7.35	177.79	8,246.7	114.8	-5.6	-115.0	10.00	10.00	0.00	
8,300.0	12.35	177.79	8,295.9	106.3	-5.3	-106.4	10.00	10.00	0.00	
8,350.0	17.35	177.79	8,344.2	93.5	-4.8	-93.6	10.00	10.00	0.00	
8,400.0	22.35	177.79	8,391.3	76.5	-4.2	-76.6	10.00	10.00	0.00	
8,450.0	27.35	177.79	8,436.6	55.5	-3.3	-55.6	10.00	10.00	0.00	
8,500.0	32.35	177.79	8,480.0	30.7	-2.4	-30.7	10.00	10.00	0.00	
8,550.0	37.35	177.79	8,521.0	2.1	-1.3	-2.2	10.00	10.00	0.00	
8,600.0	42.35	177.79	8,559.4	-29.9	-0.1	29.9	10.00	10.00	0.00	
8,650.0	47.35	177.79	8,594.8	-65.1	1.3	65.1	10.00	10.00	0.00	
8,700.0	52.35	177.79	8,627.0	-103.3	2.8	103.3	10.00	10.00	0.00	
8,750.0	57.35	177.79	8,655.8	-144.1	4.4	144.2	10.00	10.00	0.00	
8,800.0	62.35	177.79	8,680.9	-187.3	6.0	187.4	10.00	10.00	0.00	
8,850.0	67.35	177.79	8,702.1	-232.5	7.8	232.7	10.00	10.00	0.00	
8,900.0	72.35	177.79	8,719.3	-279.4	9.6	279.6	10.00	10.00	0.00	
8,950.0	77.35	177.79	8,732.4	-327.6	11.4	327.8	10.00	10.00	0.00	
9,000.0	82.35	177.79	8,741.2	-376.8	13.3	377.0	10.00	10.00	0.00	
9,050.0	87.35	177.79	8,745.7	-426.5	15.3	426.8	10.00	10.00	0.00	
9,076.5	90.00	177.79	8,746.3	-453.0	16.3	453.3	10.00	10.00	0.00	
9,100.0	90.00	177.79	8,746.3	-476.5	17.2	476.8	0.00	0.00	0.00	
9,200.0	90.00	177.79	8,746.3	-576.4	21.0	576.8	0.00	0.00	0.00	
9,300.0	90.00	177.79	8,746.3	-676.3	24.9	676.8	0.00	0.00	0.00	
9,400.0	90.00	177.79	8,746.3	-776.3	28.8	776.8	0.00	0.00	0.00	



Scientific Drilling Planning Report



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Company:	OXY	TVD Reference:	KB @ 3046.3usft
Project:	Eddy County, New Mexico	MD Reference:	KB @ 3046.3usft
Site:	Cypress 33 Federal 7H	North Reference:	Grid:
Well:	C33F 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned 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)
9,500.0	90.00	177.79	8,746.3	-876.2	32.6	876.8	0.00	0.00	0.00
9,600.0	90.00	177.79	8,746.3	-976.1	36.5	976.8	0.00	0.00	0.00
9,700.0	90.00	177.79	8,746.3	-1,076.1	40.3	1,076.8	0.00	0.00	0.00
9,800.0	90.00	177.79	8,746.3	-1,176.0	44.2	1,176.8	0.00	0.00	0.00
9,900.0	90.00	177.79	8,746.3	-1,275.9	48.0	1,276.8	0.00	0.00	0.00
10,000.0	90.00	177.79	8,746.3	-1,375.8	51.9	1,376.8	0.00	0.00	0.00
10,100.0	90.00	177.79	8,746.3	-1,475.8	55.8	1,476.8	0.00	0.00	0.00
10,200.0	90.00	177.79	8,746.3	-1,575.7	59.6	1,576.8	0.00	0.00	0.00
10,300.0	90.00	177.79	8,746.3	-1,675.6	63.5	1,676.8	0.00	0.00	0.00
10,400.0	90.00	177.79	8,746.3	-1,775.5	67.3	1,776.8	0.00	0.00	0.00
10,500.0	90.00	177.79	8,746.3	-1,875.5	71.2	1,876.8	0.00	0.00	0.00
10,600.0	90.00	177.79	8,746.3	-1,975.4	75.0	1,976.8	0.00	0.00	0.00
10,700.0	90.00	177.79	8,746.3	-2,075.3	78.9	2,076.8	0.00	0.00	0.00
10,800.0	90.00	177.79	8,746.3	-2,175.2	82.8	2,176.8	0.00	0.00	0.00
10,900.0	90.00	177.79	8,746.3	-2,275.2	86.6	2,276.8	0.00	0.00	0.00
11,000.0	90.00	177.79	8,746.3	-2,375.1	90.5	2,376.8	0.00	0.00	0.00
11,100.0	90.00	177.79	8,746.3	-2,475.0	94.3	2,476.8	0.00	0.00	0.00
11,200.0	90.00	177.79	8,746.3	-2,574.9	98.2	2,576.8	0.00	0.00	0.00
11,300.0	90.00	177.79	8,746.3	-2,674.9	102.0	2,676.8	0.00	0.00	0.00
11,400.0	90.00	177.79	8,746.3	-2,774.8	105.9	2,776.8	0.00	0.00	0.00
11,500.0	90.00	177.79	8,746.3	-2,874.7	109.8	2,876.8	0.00	0.00	0.00
11,600.0	90.00	177.79	8,746.3	-2,974.6	113.6	2,976.8	0.00	0.00	0.00
11,700.0	90.00	177.79	8,746.3	-3,074.6	117.5	3,076.8	0.00	0.00	0.00
11,800.0	90.00	177.79	8,746.3	-3,174.5	121.3	3,176.8	0.00	0.00	0.00
11,900.0	90.00	177.79	8,746.3	-3,274.4	125.2	3,276.8	0.00	0.00	0.00
12,000.0	90.00	177.79	8,746.3	-3,374.3	129.0	3,376.8	0.00	0.00	0.00
12,100.0	90.00	177.79	8,746.3	-3,474.3	132.9	3,476.8	0.00	0.00	0.00
12,200.0	90.00	177.79	8,746.3	-3,574.2	136.8	3,576.8	0.00	0.00	0.00
12,300.0	90.00	177.79	8,746.3	-3,674.1	140.6	3,676.8	0.00	0.00	0.00
12,400.0	90.00	177.79	8,746.3	-3,774.0	144.5	3,776.8	0.00	0.00	0.00
12,500.0	90.00	177.79	8,746.3	-3,874.0	148.3	3,876.8	0.00	0.00	0.00
12,600.0	90.00	177.79	8,746.3	-3,973.9	152.2	3,976.8	0.00	0.00	0.00
12,700.0	90.00	177.79	8,746.3	-4,073.8	156.0	4,076.8	0.00	0.00	0.00
12,800.0	90.00	177.79	8,746.3	-4,173.7	159.9	4,176.8	0.00	0.00	0.00
12,900.0	90.00	177.79	8,746.3	-4,273.7	163.8	4,276.8	0.00	0.00	0.00
13,000.0	90.00	177.79	8,746.3	-4,373.6	167.6	4,376.8	0.00	0.00	0.00
13,100.0	90.00	177.79	8,746.3	-4,473.5	171.5	4,476.8	0.00	0.00	0.00
13,200.0	90.00	177.79	8,746.3	-4,573.4	175.3	4,576.8	0.00	0.00	0.00
13,300.0	90.00	177.79	8,746.3	-4,673.4	179.2	4,676.8	0.00	0.00	0.00
13,400.0	90.00	177.79	8,746.3	-4,773.3	183.1	4,776.8	0.00	0.00	0.00
13,422.0	90.00	177.79	8,746.3	-4,795.3	183.9	4,798.8	0.00	0.00	0.00
13,500.0	90.00	177.79	8,746.3	-4,873.2	186.9	4,876.8	0.00	0.00	0.00
13,592.0	90.00	177.79	8,746.3	-4,965.2	190.5	4,968.8	0.00	0.00	0.00



Scientific Drilling
Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C33F 7H
Company:	OXY	TVD Reference:	KB @ 3046.3usft
Project:	Eddy County, New Mexico	MD Reference:	KB @ 3046.3usft
Site:	Cypress 33 Federal 7H	North Reference:	Grid
Well:	C33F 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
Shape									
7H LTP	0.00	0.00	8,746.3	-4,795.3	183.9	456,609.10	605,759.00	32° 15' 17.540 N	103° 59' 28.394 W
- plan hits target center									
- Point									
7H PP	0.00	0.00	8,746.3	-179.9	6.9	461,224.50	605,582.00	32° 16' 3.220 N	103° 59' 30.284 W
- plan misses target center by 61.8usft at 8821.1usft MD (8690.3 TVD, -206.2 N, 6.8 E)									
- Point									
7H BHL	0.00	0.00	8,746.3	-4,965.2	190.5	456,439.20	605,765.60	32° 15' 15.858 N	103° 59' 28.324 W
- plan misses target center by 0.1usft at 13592.0usft MD (8746.3 TVD, -4965.2 N, 190.5 E)									
- Point									