



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Shell 797-03A Pad



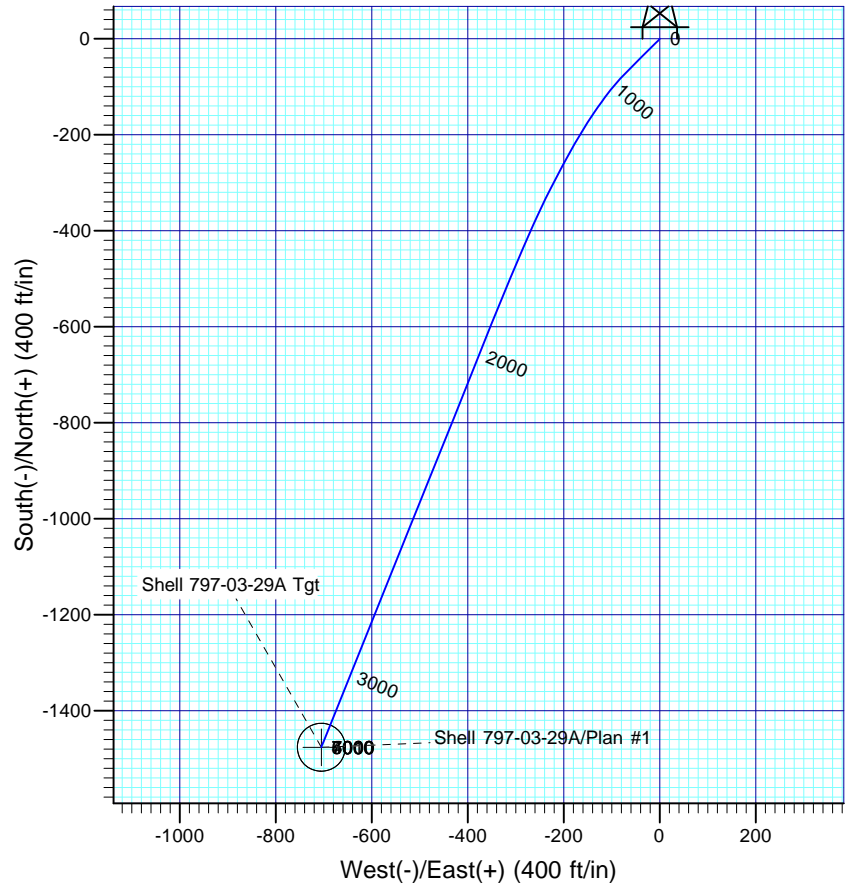
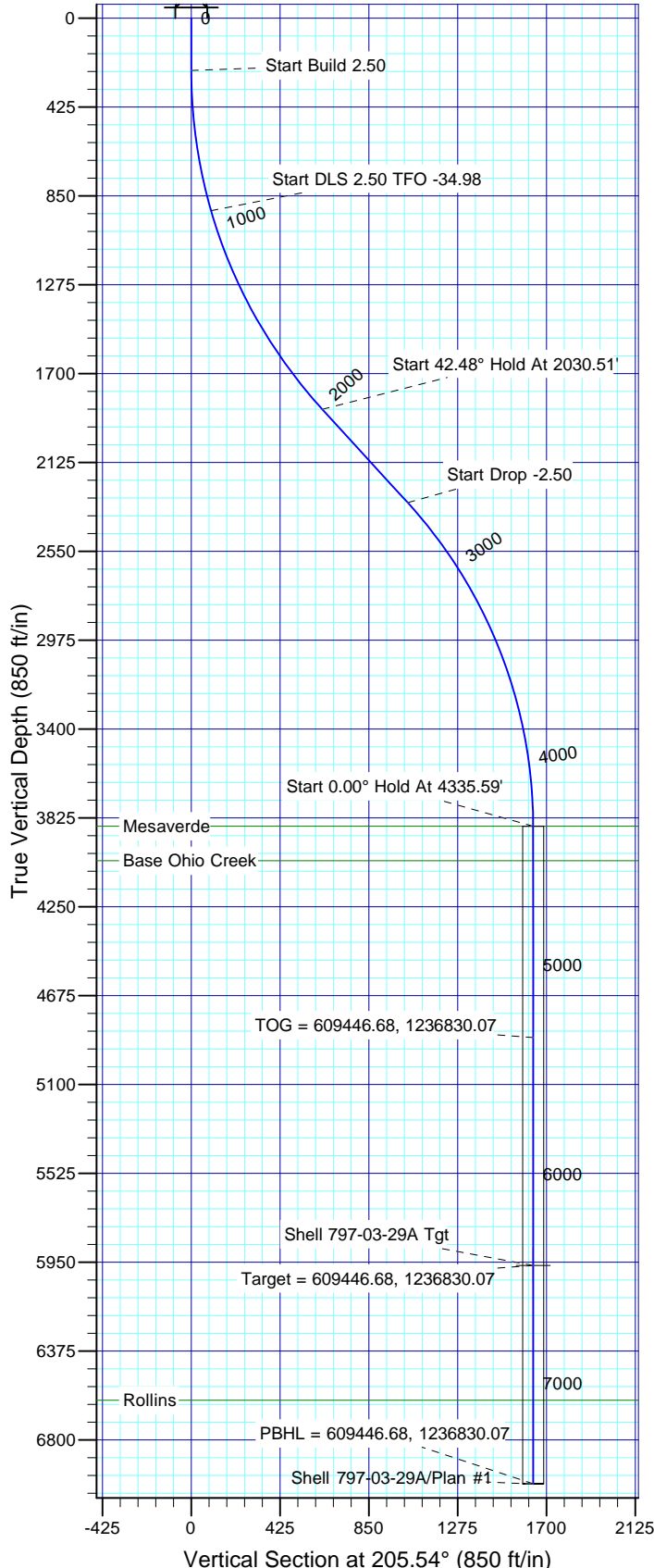
Well Details: Shell 797-03-29A

TVD Reference: GL 6485' & RKB 30' @ 6515.00ft (H&P) Ground Level: 6485.00
+N/-S 0.00 +E/-W 0.00 Northing 610901.13 Easting 1237579.10 Latitude 39° 28' 46.595 N Longitude 108° 12' 5.035 W Slot D



Azimuths to True North
Magnetic North: 10.42°

Magnetic Field
Strength: 52192.1snT
Dip Angle: 65.68°
Date: 08/18/2011
Model: IGRF2010



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3865.00	4335.59	Mesaverde
4030.00	4500.59	Base Ohio Creek
6610.00	7080.59	Rollins

Plan: Plan #1

13:53, September 09 2011
Created By: Rex Hall

PROJECT DETAILS: Garfield County, CO NAD27

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Colorado Central 502

System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	930.00	17.00	225.00	920.07	-70.81	-70.81	2.50	225.00	94.42	
4	2030.27	42.48	201.91	1870.24	-538.21	-328.16	2.50	-34.98	627.11	Shell 797-03-29A Tgt
5	2030.51	42.48	201.91	1870.42	-538.36	-328.22	2.50	0.00	627.27	
6	2636.31	42.48	201.91	2317.19	-917.93	-480.92	0.00	0.001035.58		
7	4335.59	0.00	0.00	3865.00	-1476.08	-705.46	2.50	180.001636.00		
8	6435.59	0.00	0.00	5965.00	-1476.08	-705.46	0.00	0.001636.00		Shell 797-03-29A Tgt
9	7480.59	0.00	0.00	7010.00	-1476.08	-705.46	0.00	0.001636.00		

OXY USA RMAT

Garfield County, CO NAD27

Shell 797-03A Pad

Shell 797-03-29A - Slot D

OH

Plan: Plan #1

Standard Planning Report

09 September, 2011

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 797-03-29A - Slot D
Company:	OXY USA RMAT	TVD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Site:	Shell 797-03A Pad	North Reference:	True
Well:	Shell 797-03-29A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Garfield County, CO NAD27		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Colorado Central 502		

Site		Shell 797-03A Pad			
Site Position:		Northing:	610,902.00 usft	Latitude:	39° 28' 46.610 N
From:	Lat/Long	Easting:	1,237,601.62 usft	Longitude:	108° 12' 4.748 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.70 °

Well	Shell 797-03-29A - Slot D					
Well Position	+N/-S	-1.53 ft	Northing:	610,901.14 usft	Latitude:	39° 28' 46.595 N
	+E/-W	-22.49 ft	Easting:	1,237,579.10 usft	Longitude:	108° 12' 5.035 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	6,485.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	08/18/11	10.42	65.68	52,192

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	205.54

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
930.00	17.00	225.00	920.07	-70.81	-70.81	2.50	2.50	0.00	225.00	
2,030.27	42.48	201.91	1,870.24	-538.21	-328.16	2.50	2.32	-2.10	-34.98	Shell 797-03-29A Tgt
2,030.51	42.48	201.91	1,870.42	-538.36	-328.22	2.50	2.50	0.00	0.00	
2,636.31	42.48	201.91	2,317.19	-917.93	-480.92	0.00	0.00	0.00	0.00	
4,335.59	0.00	0.00	3,865.00	-1,476.08	-705.46	2.50	-2.50	0.00	180.00	
6,435.59	0.00	0.00	5,965.00	-1,476.08	-705.46	0.00	0.00	0.00	0.00	Shell 797-03-29A Tgt
7,480.59	0.00	0.00	7,010.00	-1,476.08	-705.46	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Site:	Shell 797-03A Pad	North Reference:	True
Well:	Shell 797-03-29A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.50									
300.00	1.25	225.00	300.00	-0.39	-0.39	0.51	2.50	2.50	0.00
400.00	3.75	225.00	399.89	-3.47	-3.47	4.63	2.50	2.50	0.00
500.00	6.25	225.00	499.50	-9.63	-9.63	12.84	2.50	2.50	0.00
600.00	8.75	225.00	598.64	-18.86	-18.86	25.15	2.50	2.50	0.00
700.00	11.25	225.00	697.11	-31.14	-31.14	41.52	2.50	2.50	0.00
800.00	13.75	225.00	794.74	-46.44	-46.44	61.93	2.50	2.50	0.00
900.00	16.25	225.00	891.32	-64.74	-64.74	86.33	2.50	2.50	0.00
930.00	17.00	225.00	920.07	-70.81	-70.81	94.42	2.50	2.50	0.00
Start DLS 2.50 TFO -34.98									
1,000.00	18.46	221.83	986.74	-86.31	-85.44	114.71	2.50	2.09	-4.53
1,100.00	20.62	218.07	1,080.98	-111.97	-106.86	147.11	2.50	2.16	-3.76
1,200.00	22.85	215.01	1,173.87	-141.74	-128.86	183.46	2.50	2.23	-3.06
1,300.00	25.13	212.47	1,265.23	-175.57	-151.40	223.69	2.50	2.28	-2.54
1,400.00	27.44	210.33	1,354.88	-213.37	-174.44	267.74	2.50	2.31	-2.14
1,500.00	29.78	208.49	1,442.67	-255.10	-197.92	315.51	2.50	2.34	-1.83
1,600.00	32.15	206.91	1,528.41	-300.66	-221.82	366.92	2.50	2.36	-1.59
1,700.00	34.53	205.52	1,611.95	-349.96	-246.07	421.86	2.50	2.38	-1.39
1,800.00	36.92	204.29	1,693.13	-402.92	-270.64	480.24	2.50	2.39	-1.23
1,900.00	39.33	203.19	1,771.79	-459.44	-295.48	541.94	2.50	2.41	-1.10
2,000.00	41.74	202.20	1,847.79	-519.40	-320.54	606.84	2.50	2.42	-0.99
2,030.27	42.48	201.91	1,870.24	-538.21	-328.16	627.11	2.50	2.42	-0.93
2,030.51	42.48	201.91	1,870.42	-538.36	-328.22	627.27	0.00	0.00	0.00
Start 42.48° Hold At 2030.51'									
2,100.00	42.48	201.91	1,921.67	-581.90	-345.74	674.10	0.01	0.01	0.00
2,200.00	42.48	201.91	1,995.42	-644.55	-370.94	741.50	0.00	0.00	0.00
2,300.00	42.48	201.91	2,069.17	-707.21	-396.15	808.90	0.00	0.00	0.00
2,400.00	42.48	201.91	2,142.91	-769.86	-421.35	876.30	0.00	0.00	0.00
2,500.00	42.48	201.91	2,216.66	-832.52	-446.56	943.70	0.00	0.00	0.00
2,600.00	42.48	201.91	2,290.41	-895.18	-471.77	1,011.10	0.00	0.00	0.00
2,636.31	42.48	201.91	2,317.19	-917.93	-480.92	1,035.58	0.00	0.00	0.00
Start Drop -2.50									
2,700.00	40.89	201.91	2,364.75	-957.22	-496.73	1,077.85	2.50	-2.50	0.00
2,800.00	38.39	201.91	2,441.75	-1,016.40	-520.54	1,141.51	2.50	-2.50	0.00
2,900.00	35.89	201.91	2,521.46	-1,072.41	-543.07	1,201.76	2.50	-2.50	0.00
3,000.00	33.39	201.91	2,603.73	-1,125.14	-564.28	1,258.48	2.50	-2.50	0.00
3,100.00	30.89	201.91	2,688.40	-1,174.49	-584.14	1,311.57	2.50	-2.50	0.00
3,200.00	28.39	201.91	2,775.31	-1,220.37	-602.59	1,360.92	2.50	-2.50	0.00
3,300.00	25.89	201.91	2,864.29	-1,262.69	-619.62	1,406.44	2.50	-2.50	0.00
3,400.00	23.39	201.91	2,955.18	-1,301.36	-635.17	1,448.05	2.50	-2.50	0.00
3,500.00	20.89	201.91	3,047.80	-1,336.32	-649.24	1,485.66	2.50	-2.50	0.00
3,600.00	18.39	201.91	3,141.97	-1,367.50	-661.78	1,519.20	2.50	-2.50	0.00
3,700.00	15.89	201.91	3,237.52	-1,394.84	-672.78	1,548.61	2.50	-2.50	0.00
3,800.00	13.39	201.91	3,334.27	-1,418.29	-682.21	1,573.83	2.50	-2.50	0.00
3,900.00	10.89	201.91	3,432.03	-1,437.79	-690.06	1,594.81	2.50	-2.50	0.00
4,000.00	8.39	201.91	3,530.61	-1,453.33	-696.31	1,611.52	2.50	-2.50	0.00
4,100.00	5.89	201.91	3,629.82	-1,464.86	-700.95	1,623.93	2.50	-2.50	0.00
4,200.00	3.39	201.91	3,729.49	-1,472.36	-703.97	1,632.00	2.50	-2.50	0.00
4,300.00	0.89	201.91	3,829.41	-1,475.83	-705.36	1,635.73	2.50	-2.50	0.00
4,335.59	0.00	0.00	3,865.00	-1,476.08	-705.46	1,636.00	2.50	-2.50	0.00

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 797-03-29A - Slot D
Company:	OXY USA RMAT	TVD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Site:	Shell 797-03A Pad	North Reference:	True
Well:	Shell 797-03-29A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Start 0.00° Hold At 4335.59' - Mesaverde									
4,400.00	0.00	0.00	3,929.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,029.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
4,500.59	0.00	0.00	4,030.00	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
Base Ohio Creek									
4,600.00	0.00	0.00	4,129.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,229.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,329.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,429.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
5,000.00	0.00	0.00	4,529.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
5,100.00	0.00	0.00	4,629.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
5,200.00	0.00	0.00	4,729.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
5,300.00	0.00	0.00	4,829.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
5,345.59	0.00	0.00	4,875.00	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
TOG = 609446.68, 1236830.07									
5,400.00	0.00	0.00	4,929.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,029.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,129.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,229.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,329.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,429.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,529.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
6,100.00	0.00	0.00	5,629.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
6,200.00	0.00	0.00	5,729.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
6,300.00	0.00	0.00	5,829.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
6,400.00	0.00	0.00	5,929.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
6,435.59	0.00	0.00	5,965.00	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
Target = 609446.68, 1236830.07									
6,500.00	0.00	0.00	6,029.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,129.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,229.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,329.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,429.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
7,000.00	0.00	0.00	6,529.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
7,080.59	0.00	0.00	6,610.00	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
Rollins									
7,100.00	0.00	0.00	6,629.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
7,200.00	0.00	0.00	6,729.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
7,300.00	0.00	0.00	6,829.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
7,400.00	0.00	0.00	6,929.41	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
7,480.59	0.00	0.00	7,010.00	-1,476.08	-705.46	1,636.00	0.00	0.00	0.00
PBHL = 609446.68, 1236830.07									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Shell 797-03-29A Tgt	0.00	0.00	5,965.00	-1,476.08	-705.46	609,446.68	1,236,830.06	39° 28' 32.005 N	108° 12' 14.032 W
- hit/miss target									
- Shape									
- plan hits target center									
- Circle (radius 50.00)									

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 797-03-29A - Slot D
Company:	OXY USA RMAT	TVD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Site:	Shell 797-03A Pad	North Reference:	True
Well:	Shell 797-03-29A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,335.59	3,865.00	Mesaverde		0.00	
4,500.59	4,030.00	Base Ohio Creek		0.00	
7,080.59	6,610.00	Rollins		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
250.00	250.00	0.00	0.00	Start Build 2.50	
930.00	920.07	-70.81	-70.81	Start DLS 2.50 TFO -34.98	
2,030.51	1,870.42	-538.36	-328.22	Start 42.48° Hold At 2030.51'	
2,636.31	2,317.19	-917.93	-480.92	Start Drop -2.50	
4,335.59	3,865.00	-1,476.08	-705.46	Start 0.00° Hold At 4335.59'	
5,345.59	4,875.00	-1,476.08	-705.46	TOG = 609446.68, 1236830.07	
6,435.59	5,965.00	-1,476.08	-705.46	Target = 609446.68, 1236830.07	
7,480.59	7,010.00	-1,476.08	-705.46	PBHL = 609446.68, 1236830.07	