

RCVD DEC 19 '11

OIL CONS. DIV.

DIST. 3

ConocoPhillips

SJB (NM Central)

SEC 30-T27N-R7W

San Juan 28-7 Unit #100N

OH

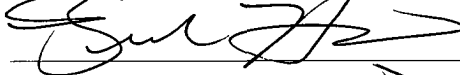
API # 3003930880

Design: OH

Standard Survey Report

05 December, 2011

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



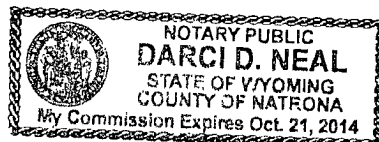
Notarized this date 6th of December, 2011.



Notary Signature

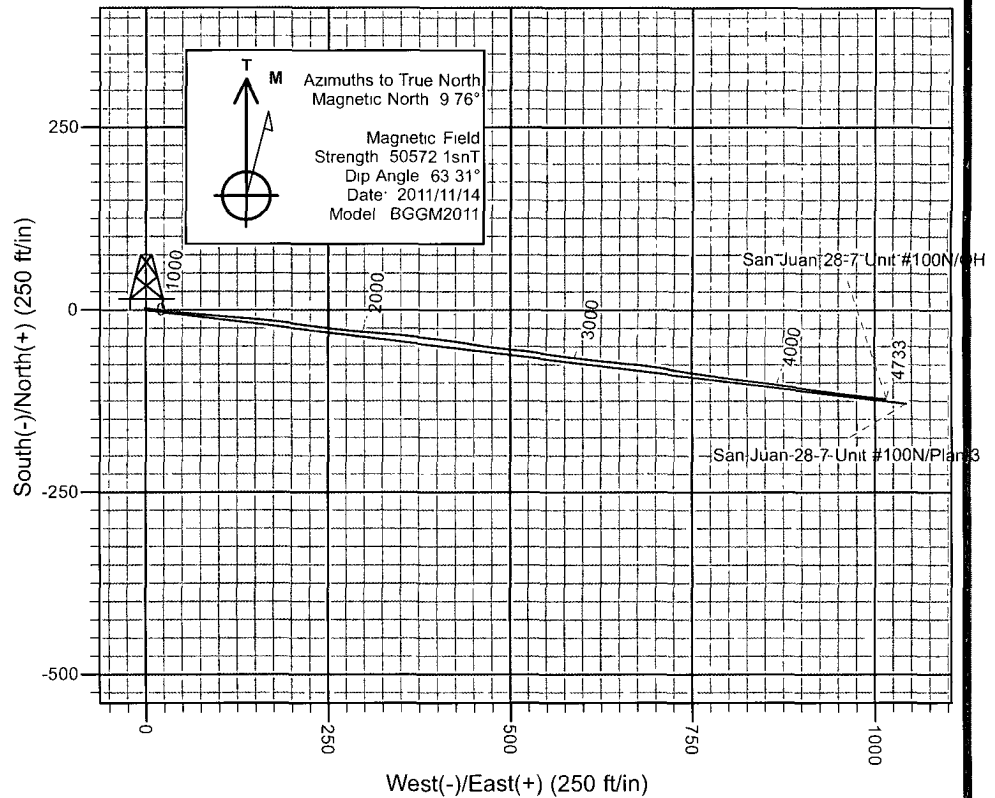
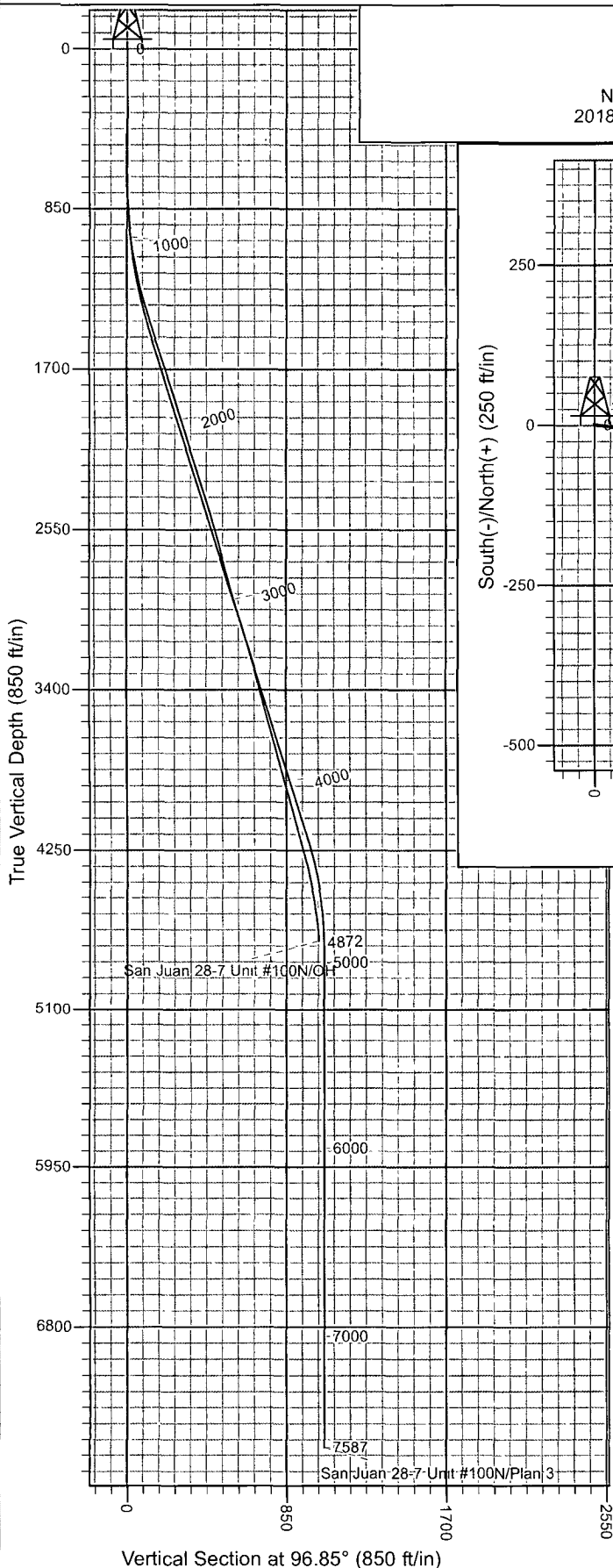
County of Natrona

State of Wyoming



WELL DETAILS: San Juan 28-7 Unit #100N
 GL 6663' & KB 15' @ 6678.0ft (AWS 673)

Ground Level 6663.0
 Northing 2018809.64 Easting 98411.32 Latitude 36° 32' 25.800 N Longitude 107° 37' 1.326 W



REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well San Juan 28-7 Unit #100N, True North
 Vertical (TVD) Reference: GL 6663' & KB 15' @ 6678.0ft (AWS 673)
 Section (VS) Reference: Slot - (0.0N, 0.0E)
 Measured Depth Reference: GL 6663' & KB 15' @ 6678.0ft (AWS 673)
 Calculation Method: Minimum Curvature

PROJECT DETAILS: SJB (NM Central)

Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: New Mexico Central 3002
 System Datum: Mean Sea Level

Scientific Drilling

Survey Report

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well San Juan 28-7 Unit #100N
Project:	SJB (NM Central)	TVD Reference:	GL 6663' & KB 15' @ 6678.0ft (AWS 673)
Site:	SEC 30-T27N-R7W	MD Reference:	GL 6663' & KB 15' @ 6678.0ft (AWS 673)
Well:	San Juan 28-7 Unit #100N	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 2003.21 Single User Db

Project	SJB (NM Central), New Mexico, S-Type MV/DK Wells		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		Using Well Reference Point
Map Zone:	New Mexico Central 3002		Using geodetic scale factor

Site	SEC 30-T27N-R7W		
Site Position:	Lat/Long	Northing:	2,018,809.64 ft
From:		Easting:	98,411.32 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	36° 32' 25.800 N
		Longitude:	107° 37' 1.326 W
		Grid Convergence:	-0.81 °

Well	San Juan 28-7 Unit #100N, 1365' FSL 2310' FWL					
Well Position	+N/-S	0.0 ft	Northing:	2,018,809.64 ft	Latitude:	36° 32' 25.800 N
	+E/-W	0.0 ft	Easting:	98,411.32 ft	Longitude:	107° 37' 1.326 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,663.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2011	2011/11/14	9.76	63.31	50,572

Design	OH			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)
	0.0	0.0	0.0	96.85

Survey Program	Date	2011/12/05			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
389.0	4,872.0	Survey #1 (OH)	MWD SDI	MWD - Standard ver 1.0.1	

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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
389.0	0.36	304.41	389.0	0.7	-1.0	-1.1	0.09	0.09	0.00	
First SDI MWD Survey										
450.0	0.46	316.17	450.0	1.0	-1.3	-1.4	0.21	0.16	19.28	
512.0	0.54	320.36	512.0	1.4	-1.7	-1.8	0.14	0.13	6.76	
573.0	0.50	330.33	573.0	1.8	-2.0	-2.2	0.16	-0.07	16.34	
634.0	0.55	330.33	634.0	2.3	-2.3	-2.5	0.08	0.08	0.00	
696.0	0.71	63.67	696.0	2.7	-2.1	-2.4	1.49	0.26	150.55	
757.0	1.75	95.11	757.0	2.8	-0.8	-1.2	1.97	1.70	51.54	
819.0	2.85	97.16	818.9	2.6	1.6	1.3	1.78	1.77	3.31	
881.0	4.43	98.07	880.8	2.0	5.5	5.3	2.55	2.55	1.47	
942.0	6.18	99.35	941.5	1.2	11.1	10.9	2.88	2.87	2.10	
1,007.0	7.88	96.68	1,006.0	0.1	19.0	18.9	2.66	2.62	-4.11	

Scientific Drilling

Survey Report

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well San Juan 28-7 Unit #100N
Project:	SJB (NM Central)	TVD Reference:	GL 6663' & KB 15' @ 6678.0ft (AWS 673)
Site:	SEC 30-T27N-R7W	MD Reference:	GL 6663' & KB 15' @ 6678.0ft (AWS 673)
Well:	San Juan 28-7 Unit #100N	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 2003 21 Single User Db

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)
1,071.0	9.35	96.56	1,069.3	-1.0	28.5	28.4	2.30	2.30	-0.19
1,134.0	10.83	95.21	1,131.3	-2.2	39.5	39.5	2.38	2.35	-2.14
1,198.0	12.25	95.89	1,194.0	-3.4	52.2	52.3	2.23	2.22	1.06
1,261.0	13.98	95.74	1,255.4	-4.8	66.5	66.6	2.75	2.75	-0.24
1,325.0	15.18	96.15	1,317.3	-6.5	82.5	82.7	1.88	1.88	0.64
1,388.0	16.65	94.73	1,377.9	-8.1	99.7	99.9	2.41	2.33	-2.25
1,452.0	16.59	94.36	1,439.2	-9.6	117.9	118.2	0.19	-0.09	-0.58
1,515.0	17.69	94.79	1,499.4	-11.1	136.4	136.8	1.76	1.75	0.68
1,579.0	18.09	95.17	1,560.4	-12.8	156.0	156.4	0.65	0.63	0.59
1,642.0	18.61	96.73	1,620.1	-14.8	175.8	176.3	1.14	0.83	2.48
1,706.0	18.34	97.05	1,680.9	-17.3	195.9	196.5	0.45	-0.42	0.50
1,769.0	18.30	98.86	1,740.7	-20.0	215.5	216.3	0.91	-0.06	2.87
1,833.0	17.86	97.50	1,801.5	-22.8	235.2	236.2	0.95	-0.69	-2.13
1,896.0	17.44	96.76	1,861.5	-25.2	254.1	255.3	0.76	-0.67	-1.17
1,960.0	17.07	96.67	1,922.7	-27.4	273.0	274.3	0.58	-0.58	-0.14
2,024.0	16.54	95.26	1,983.9	-29.4	291.4	292.8	1.04	-0.83	-2.20
2,087.0	16.91	94.27	2,044.3	-30.9	309.4	310.9	0.74	0.59	-1.57
2,151.0	17.28	95.41	2,105.4	-32.5	328.2	329.7	0.78	0.58	1.78
2,214.0	17.38	95.14	2,165.6	-34.2	346.9	348.5	0.20	0.16	-0.43
2,278.0	17.30	96.34	2,226.7	-36.1	365.8	367.5	0.57	-0.13	1.88
2,341.0	17.55	95.91	2,286.8	-38.1	384.6	386.4	0.45	0.40	-0.68
2,405.0	17.14	97.26	2,347.9	-40.3	403.5	405.5	0.90	-0.64	2.11
2,469.0	16.99	98.89	2,409.0	-42.9	422.1	424.2	0.78	-0.23	2.55
2,532.0	16.98	99.45	2,469.3	-45.9	440.3	442.6	0.26	-0.02	0.89
2,596.0	16.42	99.10	2,530.6	-48.8	458.5	461.0	0.89	-0.88	-0.55
2,659.0	15.69	97.58	2,591.1	-51.3	475.7	478.4	1.34	-1.16	-2.41
2,723.0	14.68	96.49	2,652.9	-53.4	492.3	495.2	1.64	-1.58	-1.70
2,787.0	14.16	95.52	2,714.9	-55.1	508.2	511.1	0.90	-0.81	-1.52
2,850.0	15.29	97.76	2,775.8	-56.9	524.1	527.1	2.01	1.79	3.56
2,914.0	15.10	98.27	2,837.6	-59.3	540.7	543.9	0.36	-0.30	0.80
2,977.0	15.91	98.09	2,898.3	-61.7	557.4	560.7	1.29	1.29	-0.29
3,041.0	17.30	97.96	2,959.6	-64.2	575.5	579.0	2.17	2.17	-0.20
3,104.0	16.67	97.19	3,019.9	-66.7	593.7	597.4	1.06	-1.00	-1.22
3,168.0	17.13	96.36	3,081.1	-68.8	612.2	616.0	0.81	0.72	-1.30
3,231.0	16.94	95.89	3,141.3	-70.8	630.5	634.5	0.37	-0.30	-0.75
3,295.0	16.96	95.37	3,202.6	-72.6	649.1	653.1	0.24	0.03	-0.81
3,358.0	15.89	96.53	3,263.0	-74.5	666.8	671.0	1.78	-1.70	1.84
3,422.0	14.72	97.20	3,324.7	-76.5	683.6	687.8	1.85	-1.83	1.05
3,485.0	14.61	96.89	3,385.7	-78.5	699.4	703.8	0.21	-0.17	-0.49
3,549.0	15.07	99.22	3,447.5	-80.8	715.7	720.2	1.18	0.72	3.64
3,612.0	15.43	99.95	3,508.3	-83.5	732.0	736.7	0.65	0.57	1.16
3,676.0	15.51	99.22	3,570.0	-86.4	748.8	753.8	0.33	0.13	-1.14
3,740.0	15.45	98.23	3,631.7	-89.0	765.7	770.9	0.42	-0.09	-1.55
3,803.0	15.31	98.95	3,692.4	-91.5	782.2	787.6	0.38	-0.22	1.14
3,867.0	14.85	97.06	3,754.2	-93.8	798.7	804.2	1.05	-0.72	-2.95
3,930.0	14.99	97.07	3,815.1	-95.8	814.8	820.4	0.22	0.22	0.02
3,994.0	15.84	97.56	3,876.8	-97.9	831.7	837.4	1.34	1.33	0.77
4,057.0	15.23	98.93	3,937.5	-100.4	848.4	854.3	1.13	-0.97	2.17
4,121.0	15.60	97.61	3,999.2	-102.8	865.2	871.3	0.80	0.58	-2.06
4,184.0	15.58	97.89	4,059.9	-105.1	882.0	888.2	0.12	-0.03	0.44
4,248.0	14.93	97.56	4,121.6	-107.3	898.7	905.1	1.02	-1.02	-0.52
4,312.0	14.61	98.29	4,183.5	-109.6	914.8	921.4	0.58	-0.50	1.14
4,375.0	14.85	97.98	4,244.4	-111.9	930.7	937.4	0.40	0.38	-0.49
4,439.0	15.32	97.78	4,306.2	-114.1	947.2	954.1	0.74	0.73	-0.31

Scientific Drilling

Survey Report

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well San Juan 28-7 Unit #100N
Project:	SJB (NM Central)	TVD Reference:	GL 6663' & KB 15' @ 6678.0ft (AWS 673)
Site:	SEC 30-T27N-R7W	MD Reference:	GL 6663' & KB 15' @ 6678 0ft (AWS 673)
Well:	San Juan 28-7 Unit #100N	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 2003 21 Single User Db

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)
4,502.0	13.03	97.05	4,367.3	-116.1	962.5	969.5	3.65	-3.63	-1.16
4,566.0	11.26	96.85	4,429.9	-117.8	975.9	982.9	2.77	-2.77	-0.31
4,630.0	10.09	95.48	4,492.7	-119.1	987.6	994.8	1.87	-1.83	-2.14
4,693.0	8.38	97.61	4,554.9	-120.2	997.7	1,004.9	2.77	-2.71	3.38
4,757.0	6.45	97.29	4,618.4	-121.3	1,005.9	1,013.2	3.02	-3.02	-0.50
4,820.0	4.15	92.87	4,681.1	-121.8	1,011.7	1,019.0	3.71	-3.65	-7.02
4,872.0	3.12	93.18	4,733.0	-122.0	1,015.0	1,022.3	1.98	-1.98	0.60
Last SDI MWD Survey									

Checked By: _____ Approved By: _____ Date: _____