



## Gyro Survey Certification

2948 I-70 Business Loop  
Grand Junction, CO 81504  
(970)-245-9447 Fax (970)-245-9454

<b>Operator</b>	B.P.
<b>Well Name &amp; No.</b>	Taichert
<b>County &amp; State</b>	La Plata County, CO
<b>SDI Job No.</b>	420915K310672
<b>Rig</b>	Aztec 507

I, Janie Collins, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 68 feet to a measured depth of 3,216 feet is true and correct as determined from all available records.

  
\_\_\_\_\_  
Signature

14-Sep-15  
\_\_\_\_\_  
Date

**Janie Collins**  
Colorado District Well Planner  
Scientific Drilling International



**B.P.**

**La Plata County, CO NAD83**

**Taichert Pad**

**Taichert 31-01 #2**

**OH**

**Design: OH**

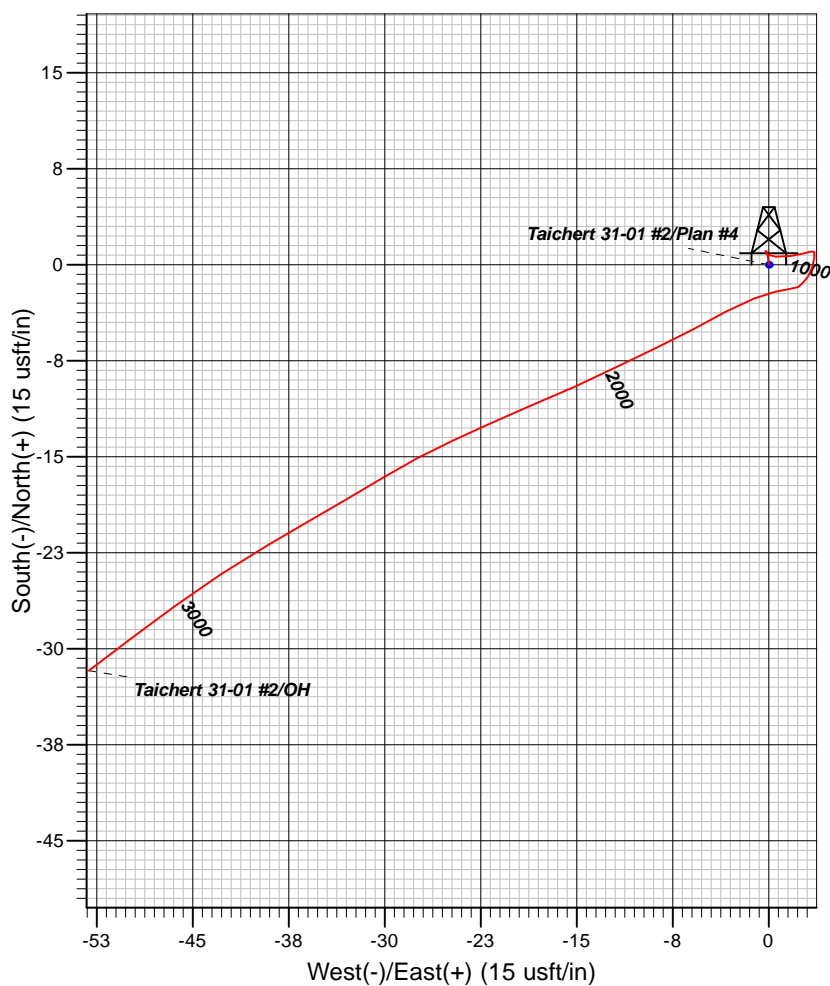
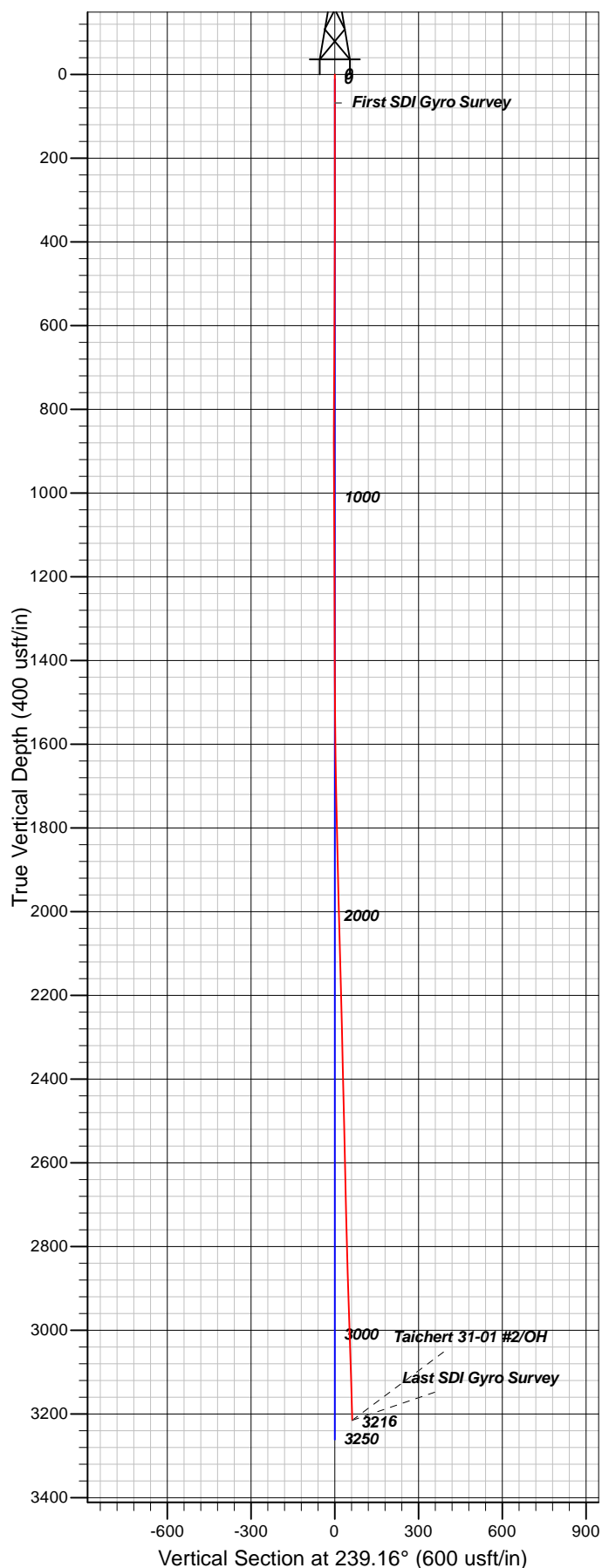
## **Standard Survey Report**

**14 September, 2015**





Company: B.P.  
Project: La Plata County, CO NAD83  
Site: Taichert Pad  
Well: Taichert 31-01 #2  
Wellbore: OH  
Design: OH



#### Well Details: Taichert 31-01 #2

TVD Reference: GL 6610' & RKB 13' @ 6622.99usft		Ground Level: 6600.99		Slot
+N/-S	+E/-W	Northing	Easting	
0.00	0.00	1149682.54	2402643.85	

Latitude	Longitude
37.0597651	-107.5472063

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Taichert 31-01 #2, Grid North  
Vertical (TVD) Reference: GL 6610' & RKB 13' @ 6622.99usft  
Section (VS) Reference: Slot - (0.00N, 0.00E)  
Measured Depth Reference: GL 6610' & RKB 13' @ 6622.99usft  
Calculation Method: Minimum Curvature

#### PROJECT DETAILS: La Plata County, CO NAD83

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Southern Zone

System Datum: Mean Sea Level

Plan: OH

15:59, September 14 2015  
Created By: Janie Collins



<b>Company:</b>	B.P.	<b>Local Co-ordinate Reference:</b>	Well Taichert 31-01 #2
<b>Project:</b>	La Plata County, CO NAD83	<b>TVD Reference:</b>	GL 6610' & RKB 13' @ 6622.99usft
<b>Site:</b>	Taichert Pad	<b>MD Reference:</b>	GL 6610' & RKB 13' @ 6622.99usft
<b>Well:</b>	Taichert 31-01 #2	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction District

<b>Project</b>	La Plata County, CO NAD83		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Southern Zone		

Site		Taichert Pad					
Site Position:		Northing:	1,149,682.54	usft	Latitude:	37.0597651	
From:	Lat/Long	Easting:	2,402,643.85	usft	Longitude:	-107.5472063	
Position Uncertainty:	0.00	usft	Slot Radius:	13.20	in	Grid Convergence:	-1.26 °

Well		Taichert 31-01 #2				
Well Position	+N/-S	0.00 usft	Northing:	1,149,682.54 usft	Latitude:	37.0597651
	+E/-W	0.00 usft	Easting:	2,402,643.85 usft	Longitude:	-107.5472063
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,600.99 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	9/7/2015	9.30	63.65	50,290

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	239.16	

<b>Survey Program</b>	<b>Date</b>	9/14/2015			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
68.00	3,216.00	Survey #1 - Gyro Surveys (OH)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
68.00	0.33	350.34	68.00	0.19	-0.03	-0.07	0.49	0.49	0.00	
<b>First SDI Gyro Survey</b>										
154.00	0.35	355.81	154.00	0.70	-0.09	-0.28	0.04	0.02	6.36	
244.00	0.14	318.75	244.00	1.06	-0.19	-0.38	0.28	-0.23	-41.18	
336.00	0.08	193.34	336.00	1.08	-0.28	-0.32	0.21	-0.07	-136.32	
424.00	0.27	150.75	424.00	0.84	-0.19	-0.27	0.25	0.22	-48.40	
514.00	0.77	92.92	513.99	0.62	0.52	-0.76	0.74	0.56	-64.26	
604.00	0.78	81.91	603.99	0.68	1.73	-1.83	0.17	0.01	-12.23	
693.00	0.47	75.17	692.98	0.86	2.68	-2.74	0.36	-0.35	-7.57	
786.00	0.29	71.82	785.98	1.03	3.28	-3.34	0.19	-0.19	-3.60	



<b>Company:</b>	B.P.	<b>Local Co-ordinate Reference:</b>	Well Taichert 31-01 #2
<b>Project:</b>	La Plata County, CO NAD83	<b>TVD Reference:</b>	GL 6610' & RKB 13' @ 6622.99usft
<b>Site:</b>	Taichert Pad	<b>MD Reference:</b>	GL 6610' & RKB 13' @ 6622.99usft
<b>Well:</b>	Taichert 31-01 #2	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction 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)
879.00	0.16	157.81	878.98	0.98	3.55	-3.55	0.35	-0.14	92.46
973.00	0.44	187.42	972.98	0.50	3.55	-3.31	0.33	0.30	31.50
1,067.00	0.52	197.46	1,066.97	-0.26	3.38	-2.76	0.12	0.09	10.68
1,162.00	0.38	217.34	1,161.97	-0.93	3.06	-2.15	0.22	-0.15	20.93
1,255.00	0.37	221.30	1,254.97	-1.40	2.67	-1.58	0.03	-0.01	4.26
1,348.00	0.26	236.06	1,347.97	-1.74	2.30	-1.08	0.15	-0.12	15.87
1,443.00	0.56	266.02	1,442.96	-1.89	1.66	-0.45	0.38	0.32	31.54
1,534.00	0.90	254.53	1,533.96	-2.11	0.52	0.64	0.40	0.37	-12.63
1,628.00	1.25	250.46	1,627.94	-2.65	-1.16	2.35	0.38	0.37	-4.33
1,722.00	1.72	241.82	1,721.91	-3.66	-3.36	4.77	0.55	0.50	-9.19
1,814.00	1.88	241.07	1,813.86	-5.05	-5.90	7.65	0.18	0.17	-0.82
1,907.00	2.17	245.18	1,906.80	-6.52	-8.84	10.93	0.35	0.31	4.42
2,001.00	2.13	243.39	2,000.74	-8.05	-12.01	14.44	0.08	-0.04	-1.90
2,094.00	2.24	246.23	2,093.67	-9.56	-15.22	17.97	0.17	0.12	3.05
2,187.00	2.16	247.10	2,186.60	-10.97	-18.50	21.51	0.09	-0.09	0.94
2,279.00	2.12	245.36	2,278.54	-12.36	-21.64	24.92	0.08	-0.04	-1.89
2,372.00	1.98	245.67	2,371.48	-13.74	-24.67	28.22	0.15	-0.15	0.33
2,466.00	1.89	241.38	2,465.42	-15.15	-27.51	31.39	0.18	-0.10	-4.56
2,560.00	1.91	239.43	2,559.37	-16.69	-30.22	34.50	0.07	0.02	-2.07
2,653.00	2.01	239.45	2,652.32	-18.30	-32.96	37.68	0.11	0.11	0.02
2,746.00	2.27	240.42	2,745.25	-20.04	-35.97	41.15	0.28	0.28	1.04
2,840.00	2.36	238.91	2,839.18	-21.96	-39.24	44.95	0.12	0.10	-1.61
2,934.00	2.76	237.00	2,933.08	-24.19	-42.80	49.15	0.44	0.43	-2.03
3,027.00	2.65	234.00	3,025.98	-26.68	-46.41	53.53	0.19	-0.12	-3.23
3,120.00	2.60	232.79	3,118.88	-29.22	-49.83	57.76	0.08	-0.05	-1.30
3,216.00	2.35	232.78	3,214.79	-31.72	-53.14	61.88	0.26	-0.26	-0.01
Last SDI Gyro Survey									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
68.00	68.00	0.19	-0.03	First SDI Gyro Survey
3,216.00	3,214.79	-31.72	-53.14	Last SDI Gyro Survey

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_