



Well Details: Dakota 21-3

TVD Reference: GL 6235' & RKB 14' @ 6249.00usft and Level: 6235.00				Slot
+N/-S	+E/-W	Northing	Easting	Latitude
0.00	0.00	1160894.00	2444667.80	37° 5' 34.764 N 107° 24' 14.436 W

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Dakota 21-3, True North  
 Vertical (TVD) Reference: GL 6235' & RKB 14' @ 6249.00usft  
 Section (VS) Reference: Slot - (0.00N, 0.00E)  
 Measured Depth Reference: GL 6235' & RKB 14' @ 6249.00usft  
 Calculation Method: Minimum Curvature

PROJECT DETAILS: Archuleta 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

12:46, October 03 2014  
 Created By: Janie Collins



<b>Company:</b>	Petrox Resources	<b>Local Co-ordinate Reference:</b>	Well Dakota 21-3
<b>Project:</b>	Archuleta County, CO NAD83	<b>TVD Reference:</b>	GL 6235' & RKB 14' @ 6249.00usft
<b>Site:</b>	Dakota Unit	<b>MD Reference:</b>	GL 6235' & RKB 14' @ 6249.00usft
<b>Well:</b>	Dakota 21-3	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction District

<b>Project</b>	Archuleta County, CO NAD83, Colorado, Fruitland Coal		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Southern Zone		Using geodetic scale factor

<b>Site</b>	Dakota Unit				
<b>Site Position:</b>		<b>Northing:</b>	1,160,893.99 usft	<b>Latitude:</b>	37° 5' 34.764 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,444,667.80 usft	<b>Longitude:</b>	107° 24' 14.436 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-1.17 °

<b>Well</b>	Dakota 21-3					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,160,893.99 usft	<b>Latitude:</b>	37° 5' 34.764 N
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,444,667.80 usft	<b>Longitude:</b>	107° 24' 14.436 W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	0.00 usft	<b>Ground Level:</b>	6,235.00 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>
	BGGM2014	8/4/2014	9.48	63.77	50,582

<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	179.45	

<b>Survey Program</b>	<b>Date</b>	10/3/2014			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
183.00	1,457.00	Survey #1 - Surface MWD Survey (OH)	MWD SDI	MWD - Standard ver 1.0.1	
1,550.00	2,714.99	Survey #2 - Production MWD Survey (OH)	MWD SDI	MWD - Standard ver 1.0.1	

<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>Map Northing (usft)</b>	<b>Map Easting (usft)</b>	<b>Latitude</b>	<b>Longitude</b>
0.00	0.00	0.00	0.00	0.00	0.00	1,160,893.99	2,444,667.80	37° 5' 34.764 N	107° 24' 14.436 W
183.00	0.51	160.72	183.00	-0.77	0.27	1,160,893.22	2,444,668.05	37° 5' 34.756 N	107° 24' 14.433 W
<b>First SDI Surface MWD Survey</b>									
303.00	0.89	173.95	302.99	-2.20	0.54	1,160,891.78	2,444,668.30	37° 5' 34.742 N	107° 24' 14.429 W
448.00	1.46	191.05	447.96	-5.13	0.31	1,160,888.85	2,444,668.00	37° 5' 34.713 N	107° 24' 14.432 W
529.00	2.35	189.35	528.91	-7.78	-0.16	1,160,886.21	2,444,667.48	37° 5' 34.687 N	107° 24' 14.438 W
622.00	3.90	170.11	621.77	-12.78	0.07	1,160,881.21	2,444,667.61	37° 5' 34.638 N	107° 24' 14.435 W
712.00	5.60	177.63	711.46	-20.18	0.78	1,160,873.79	2,444,668.17	37° 5' 34.564 N	107° 24' 14.426 W
806.00	6.15	173.45	804.97	-29.77	1.55	1,160,864.20	2,444,668.74	37° 5' 34.470 N	107° 24' 14.417 W
867.00	7.20	171.53	865.55	-36.80	2.48	1,160,857.15	2,444,669.53	37° 5' 34.400 N	107° 24' 14.405 W
931.00	8.11	174.91	928.98	-45.26	3.47	1,160,848.67	2,444,670.35	37° 5' 34.316 N	107° 24' 14.393 W





<b>Company:</b>	Petrox Resources	<b>Local Co-ordinate Reference:</b>	Well Dakota 21-3
<b>Project:</b>	Archuleta County, CO NAD83	<b>TVD Reference:</b>	GL 6235' & RKB 14' @ 6249.00usft
<b>Site:</b>	Dakota Unit	<b>MD Reference:</b>	GL 6235' & RKB 14' @ 6249.00usft
<b>Well:</b>	Dakota 21-3	<b>North Reference:</b>	True
<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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
993.00	7.99	184.22	990.37	-53.91	3.54	1,160,840.01	2,444,670.24	37° 5' 34.231 N	107° 24' 14.392 W
1,087.00	7.55	184.15	1,083.51	-66.59	2.62	1,160,827.36	2,444,669.06	37° 5' 34.106 N	107° 24' 14.404 W
1,180.00	7.38	181.35	1,175.72	-78.65	2.03	1,160,815.31	2,444,668.23	37° 5' 33.986 N	107° 24' 14.411 W
1,269.00	7.20	177.92	1,264.00	-89.94	2.10	1,160,804.02	2,444,668.07	37° 5' 33.875 N	107° 24' 14.410 W
1,364.00	7.94	176.85	1,358.17	-102.44	2.68	1,160,791.51	2,444,668.39	37° 5' 33.751 N	107° 24' 14.403 W
1,457.00	8.02	176.03	1,450.27	-115.33	3.48	1,160,778.61	2,444,668.93	37° 5' 33.624 N	107° 24' 14.393 W
<b>Last SDI Surface MWD Survey</b>									
1,550.00	7.73	175.53	1,542.40	-128.04	4.42	1,160,765.89	2,444,669.61	37° 5' 33.498 N	107° 24' 14.381 W
<b>First SDI Production MWD Survey</b>									
1,643.00	7.74	190.08	1,634.56	-140.44	3.81	1,160,753.50	2,444,668.74	37° 5' 33.375 N	107° 24' 14.389 W
1,736.00	7.71	189.21	1,726.71	-152.76	1.71	1,160,741.22	2,444,666.40	37° 5' 33.254 N	107° 24' 14.415 W
1,836.00	7.28	190.42	1,825.86	-165.62	-0.51	1,160,728.42	2,444,663.92	37° 5' 33.126 N	107° 24' 14.442 W
1,893.00	6.73	182.29	1,882.43	-172.50	-1.29	1,160,721.54	2,444,662.99	37° 5' 33.058 N	107° 24' 14.452 W
1,954.00	6.80	179.00	1,943.01	-179.69	-1.37	1,160,714.36	2,444,662.76	37° 5' 32.987 N	107° 24' 14.453 W
2,049.00	6.71	179.57	2,037.35	-190.86	-1.23	1,160,703.19	2,444,662.68	37° 5' 32.877 N	107° 24' 14.451 W
2,143.00	6.92	179.19	2,130.69	-202.01	-1.11	1,160,692.04	2,444,662.57	37° 5' 32.767 N	107° 24' 14.450 W
2,237.00	6.48	178.14	2,224.04	-212.98	-0.86	1,160,681.07	2,444,662.60	37° 5' 32.658 N	107° 24' 14.447 W
2,329.00	6.47	178.77	2,315.46	-223.35	-0.58	1,160,670.69	2,444,662.67	37° 5' 32.556 N	107° 24' 14.443 W
2,422.00	5.45	173.66	2,407.95	-232.98	0.02	1,160,661.06	2,444,663.07	37° 5' 32.460 N	107° 24' 14.436 W
2,485.00	4.68	162.51	2,470.71	-238.40	1.12	1,160,655.61	2,444,664.06	37° 5' 32.407 N	107° 24' 14.422 W
2,546.99	2.63	164.41	2,532.58	-242.18	2.27	1,160,651.80	2,444,665.13	37° 5' 32.369 N	107° 24' 14.408 W
2,576.99	2.39	173.81	2,562.55	-243.47	2.52	1,160,650.51	2,444,665.36	37° 5' 32.357 N	107° 24' 14.405 W
2,607.99	1.82	189.73	2,593.53	-244.60	2.50	1,160,649.39	2,444,665.32	37° 5' 32.346 N	107° 24' 14.405 W
2,619.99	1.40	186.30	2,605.52	-244.93	2.46	1,160,649.05	2,444,665.26	37° 5' 32.342 N	107° 24' 14.406 W
2,669.00	0.32	186.30	2,654.52	-245.66	2.38	1,160,648.32	2,444,665.17	37° 5' 32.335 N	107° 24' 14.407 W
<b>Last SDI Production MWD Survey</b>									
2,669.99	0.30	186.30	2,655.52	-245.67	2.37	1,160,648.32	2,444,665.17	37° 5' 32.335 N	107° 24' 14.407 W
2,714.00	0.30	186.30	2,699.52	-245.90	2.35	1,160,648.09	2,444,665.14	37° 5' 32.333 N	107° 24' 14.407 W
<b>Projection to TD</b>									
2,714.99	0.30	186.30	2,700.52	-245.90	2.35	1,160,648.09	2,444,665.14	37° 5' 32.333 N	107° 24' 14.407 W

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
183.00	183.00	-0.77	0.27	First SDI Surface MWD Survey
1,457.00	1,450.27	-115.33	3.48	Last SDI Surface MWD Survey
1,550.00	1,542.40	-128.04	4.42	First SDI Production MWD Survey
2,669.00	2,654.52	-245.66	2.38	Last SDI Production MWD Survey
2,714.00	2,699.52	-245.90	2.35	Projection to TD

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