



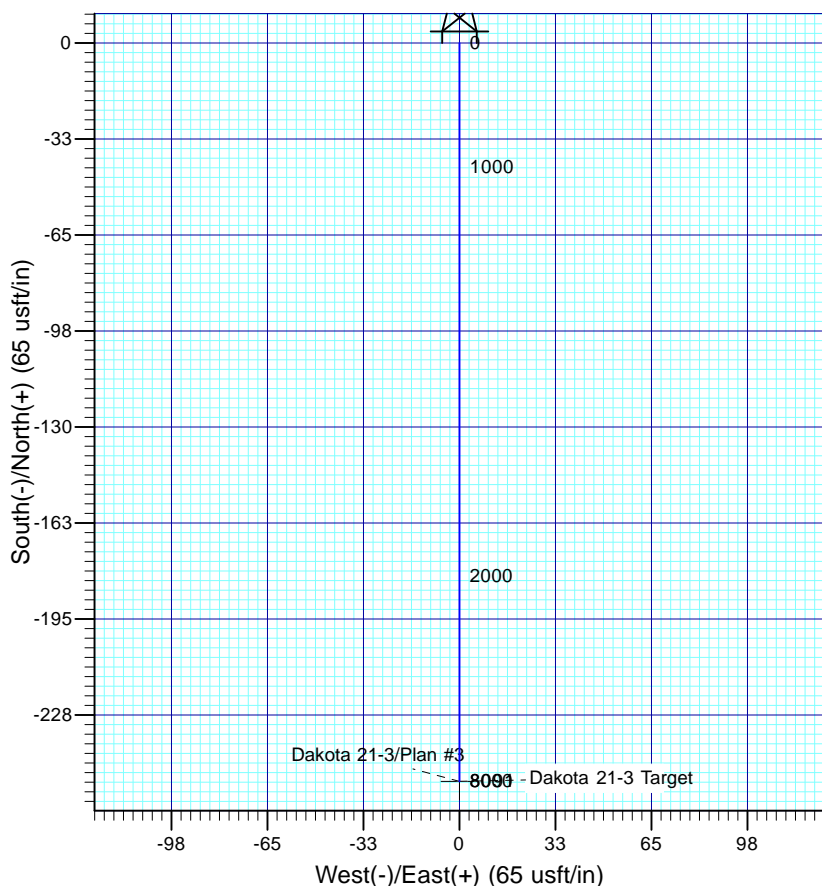
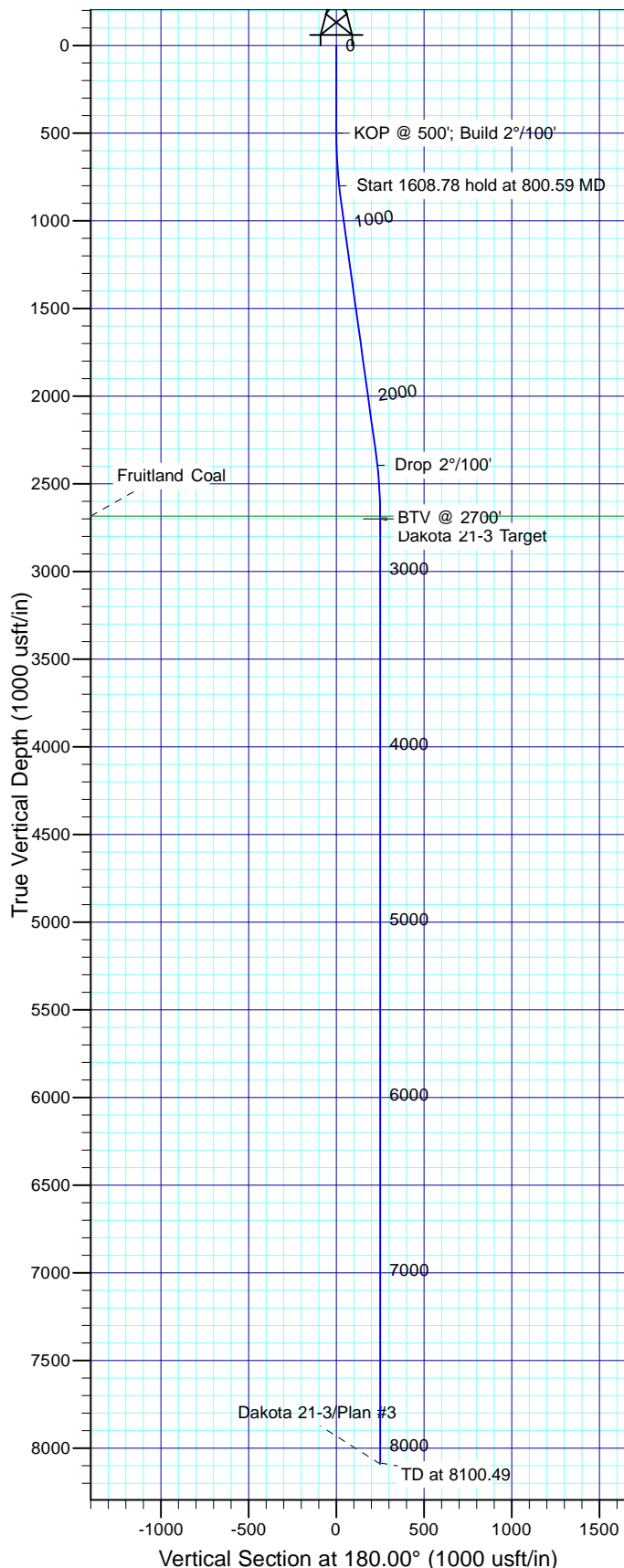
Well Details: Dakota 21-3

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



Azimuths to True North
 Magnetic North: 9.51°

Magnetic Field
 Strength: 50650.4snT
 Dip Angle: 63.78°
 Date: 2/7/2014
 Model: BGGM2013



FORMATION TOP DETAILS

TVDPath MDPPath Formation
 2684.02 2700.00 Fruitland Coal

Plan: Plan #3

17:57, April 09 2014
 Created By: Janie Collins

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

CASING DETAILS

No casing data is available

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	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	894.25	7.88	180.00	893.01	-27.09	0.00	2.00	180.00	27.09	
4	2321.73	7.88	180.00	2306.99	-222.91	0.00	0.00	0.00	222.91	
5	2715.98	0.00	0.00	2700.00	-250.00	0.00	2.00	180.00	250.00	Dakota 21-3 Target
6	8106.52	0.00	0.00	8090.54	-250.00	0.00	0.00	0.00	250.00	



PETROX RESOURCES INC.

Petrox Resources

Archuleta County, CO NAD83

Dakota Unit

Dakota 21-3

OH

Plan: Plan #3

Standard Planning Report - Geographic

09 April, 2014



Scientific Drilling

www.scientificdrilling.com





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Dakota 21-3
Company:	Petrox Resources	TVD Reference:	GL 6235' @ 6235.00usft
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6235' @ 6235.00usft
Site:	Dakota Unit	North Reference:	True
Well:	Dakota 21-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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

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

Well	Dakota 21-3					
Well Position	+N/-S	0.00 usft	Northing:	1,160,893.99 usft	Latitude:	37° 5' 34.764 N
	+E/-W	0.00 usft	Easting:	2,444,667.80 usft	Longitude:	107° 24' 14.436 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,235.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	2/7/2014	9.51	63.78	50,650

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	180.00

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
894.25	7.88	180.00	893.01	-27.09	0.00	2.00	2.00	0.00	180.00	
2,321.73	7.88	180.00	2,306.99	-222.91	0.00	0.00	0.00	0.00	0.00	
2,715.98	0.00	0.00	2,700.00	-250.00	0.00	2.00	-2.00	0.00	180.00	Dakota 21-3 Target
8,106.52	0.00	0.00	8,090.54	-250.00	0.00	0.00	0.00	0.00	0.00	



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Dakota 21-3
Company:	Petrox Resources	TVD Reference:	GL 6235' @ 6235.00usft
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6235' @ 6235.00usft
Site:	Dakota Unit	North Reference:	True
Well:	Dakota 21-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
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
100.00	0.00	0.00	100.00	0.00	0.00	1,160,893.99	2,444,667.80	37° 5' 34.764 N	107° 24' 14.436 W
200.00	0.00	0.00	200.00	0.00	0.00	1,160,893.99	2,444,667.80	37° 5' 34.764 N	107° 24' 14.436 W
300.00	0.00	0.00	300.00	0.00	0.00	1,160,893.99	2,444,667.80	37° 5' 34.764 N	107° 24' 14.436 W
400.00	0.00	0.00	400.00	0.00	0.00	1,160,893.99	2,444,667.80	37° 5' 34.764 N	107° 24' 14.436 W
500.00	0.00	0.00	500.00	0.00	0.00	1,160,893.99	2,444,667.80	37° 5' 34.764 N	107° 24' 14.436 W
KOP @ 500'; Build 2°/100'									
600.00	2.00	180.00	599.98	-1.75	0.00	1,160,892.25	2,444,667.76	37° 5' 34.747 N	107° 24' 14.436 W
700.00	4.00	180.00	699.84	-6.98	0.00	1,160,887.01	2,444,667.66	37° 5' 34.695 N	107° 24' 14.436 W
800.00	6.00	180.00	799.45	-15.69	0.00	1,160,878.30	2,444,667.48	37° 5' 34.609 N	107° 24' 14.436 W
800.59	6.01	180.00	800.03	-15.75	0.00	1,160,878.24	2,444,667.48	37° 5' 34.608 N	107° 24' 14.436 W
Start 1608.78 hold at 800.59 MD									
894.25	7.88	180.00	893.01	-27.09	0.00	1,160,866.91	2,444,667.25	37° 5' 34.496 N	107° 24' 14.436 W
900.00	7.88	180.00	898.70	-27.87	0.00	1,160,866.12	2,444,667.23	37° 5' 34.488 N	107° 24' 14.436 W
1,000.00	7.88	180.00	997.76	-41.59	0.00	1,160,852.41	2,444,666.95	37° 5' 34.353 N	107° 24' 14.436 W
1,100.00	7.88	180.00	1,096.81	-55.31	0.00	1,160,838.69	2,444,666.67	37° 5' 34.217 N	107° 24' 14.436 W
1,200.00	7.88	180.00	1,195.87	-69.03	0.00	1,160,824.97	2,444,666.39	37° 5' 34.081 N	107° 24' 14.436 W
1,300.00	7.88	180.00	1,294.92	-82.75	0.00	1,160,811.26	2,444,666.11	37° 5' 33.946 N	107° 24' 14.436 W
1,400.00	7.88	180.00	1,393.98	-96.47	0.00	1,160,797.54	2,444,665.83	37° 5' 33.810 N	107° 24' 14.436 W
1,500.00	7.88	180.00	1,493.03	-110.19	0.00	1,160,783.83	2,444,665.55	37° 5' 33.675 N	107° 24' 14.436 W
1,600.00	7.88	180.00	1,592.08	-123.90	0.00	1,160,770.11	2,444,665.27	37° 5' 33.539 N	107° 24' 14.436 W
1,700.00	7.88	180.00	1,691.14	-137.62	0.00	1,160,756.39	2,444,665.00	37° 5' 33.403 N	107° 24' 14.436 W
1,800.00	7.88	180.00	1,790.19	-151.34	0.00	1,160,742.68	2,444,664.72	37° 5' 33.268 N	107° 24' 14.436 W
1,900.00	7.88	180.00	1,889.25	-165.06	0.00	1,160,728.96	2,444,664.44	37° 5' 33.132 N	107° 24' 14.436 W
2,000.00	7.88	180.00	1,988.30	-178.78	0.00	1,160,715.25	2,444,664.16	37° 5' 32.996 N	107° 24' 14.436 W
2,100.00	7.88	180.00	2,087.36	-192.50	0.00	1,160,701.53	2,444,663.88	37° 5' 32.861 N	107° 24' 14.436 W
2,200.00	7.88	180.00	2,186.41	-206.21	0.00	1,160,687.81	2,444,663.60	37° 5' 32.725 N	107° 24' 14.436 W
2,300.00	7.88	180.00	2,285.47	-219.93	0.00	1,160,674.10	2,444,663.32	37° 5' 32.589 N	107° 24' 14.436 W
2,321.73	7.88	180.00	2,306.99	-222.91	0.00	1,160,671.12	2,444,663.26	37° 5' 32.560 N	107° 24' 14.436 W
2,400.00	6.32	180.00	2,384.66	-232.59	0.00	1,160,661.44	2,444,663.06	37° 5' 32.464 N	107° 24' 14.436 W
2,409.36	6.13	180.00	2,393.97	-233.61	0.00	1,160,660.43	2,444,663.04	37° 5' 32.454 N	107° 24' 14.436 W
Drop 2°/100'									
2,500.00	4.32	180.00	2,484.22	-241.86	0.00	1,160,652.17	2,444,662.87	37° 5' 32.373 N	107° 24' 14.436 W
2,600.00	2.32	180.00	2,584.05	-247.65	0.00	1,160,646.38	2,444,662.75	37° 5' 32.315 N	107° 24' 14.436 W
2,700.00	0.32	180.00	2,684.02	-249.96	0.00	1,160,644.08	2,444,662.71	37° 5' 32.293 N	107° 24' 14.436 W
Fruitland Coal									
2,709.95	0.12	180.00	2,693.97	-249.99	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
BTV @ 2700'									
2,715.98	0.00	0.00	2,700.00	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
Dakota 21-3 Target									
2,800.00	0.00	0.00	2,784.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
2,900.00	0.00	0.00	2,884.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
3,000.00	0.00	0.00	2,984.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
3,100.00	0.00	0.00	3,084.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
3,200.00	0.00	0.00	3,184.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
3,300.00	0.00	0.00	3,284.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
3,400.00	0.00	0.00	3,384.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
3,500.00	0.00	0.00	3,484.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
3,600.00	0.00	0.00	3,584.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
3,700.00	0.00	0.00	3,684.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
3,800.00	0.00	0.00	3,784.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
3,900.00	0.00	0.00	3,884.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
4,000.00	0.00	0.00	3,984.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
4,100.00	0.00	0.00	4,084.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Dakota 21-3
Company:	Petrox Resources	TVD Reference:	GL 6235' @ 6235.00usft
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6235' @ 6235.00usft
Site:	Dakota Unit	North Reference:	True
Well:	Dakota 21-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,200.00	0.00	0.00	4,184.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
4,300.00	0.00	0.00	4,284.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
4,400.00	0.00	0.00	4,384.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
4,500.00	0.00	0.00	4,484.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
4,600.00	0.00	0.00	4,584.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
4,700.00	0.00	0.00	4,684.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
4,800.00	0.00	0.00	4,784.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
4,900.00	0.00	0.00	4,884.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
5,000.00	0.00	0.00	4,984.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
5,100.00	0.00	0.00	5,084.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
5,200.00	0.00	0.00	5,184.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
5,300.00	0.00	0.00	5,284.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
5,400.00	0.00	0.00	5,384.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
5,500.00	0.00	0.00	5,484.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
5,600.00	0.00	0.00	5,584.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
5,700.00	0.00	0.00	5,684.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
5,800.00	0.00	0.00	5,784.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
5,900.00	0.00	0.00	5,884.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
6,000.00	0.00	0.00	5,984.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
6,100.00	0.00	0.00	6,084.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
6,200.00	0.00	0.00	6,184.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
6,300.00	0.00	0.00	6,284.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
6,400.00	0.00	0.00	6,384.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
6,500.00	0.00	0.00	6,484.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
6,600.00	0.00	0.00	6,584.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
6,700.00	0.00	0.00	6,684.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
6,800.00	0.00	0.00	6,784.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
6,900.00	0.00	0.00	6,884.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
7,000.00	0.00	0.00	6,984.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
7,100.00	0.00	0.00	7,084.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
7,200.00	0.00	0.00	7,184.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
7,300.00	0.00	0.00	7,284.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
7,400.00	0.00	0.00	7,384.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
7,500.00	0.00	0.00	7,484.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
7,600.00	0.00	0.00	7,584.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
7,700.00	0.00	0.00	7,684.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
7,800.00	0.00	0.00	7,784.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
7,900.00	0.00	0.00	7,884.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
8,000.00	0.00	0.00	7,984.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
8,100.00	0.00	0.00	8,084.02	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
8,100.49	0.00	0.00	8,084.50	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
TD at 8100.49									
8,106.52	0.00	0.00	8,090.54	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Dakota 21-3 Target	0.00	0.00	2,700.00	-250.00	0.00	1,160,644.04	2,444,662.70	37° 5' 32.292 N	107° 24' 14.436 W
- plan hits target center									
- Point									



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Dakota 21-3
Company:	Petrox Resources	TVD Reference:	GL 6235' @ 6235.00usft
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6235' @ 6235.00usft
Site:	Dakota Unit	North Reference:	True
Well:	Dakota 21-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,700.00	2,684.02	Fruitland Coal		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
500.00	500.00	0.00	0.00	KOP @ 500'; Build 2°/100'	
800.59	800.03	-15.75	0.00	Start 1608.78 hold at 800.59 MD	
2,409.36	2,393.97	-233.61	0.00	Drop 2°/100'	
2,709.95	2,693.97	-249.99	0.00	BTV @ 2700'	
8,100.49	8,084.50	-250.00	0.00	TD at 8100.49	