

WELL DETAILS: Mcoy 4-22-33

Ground Level: 5028.00  
Easting 3134824.899 Northing 1889539.825  
Longitude -105.01689 Latitude 40.27459  
Slot 4-22-33

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00		
3	2000.00	30.00	122.41	1945.92	-164.56	259.22	2.50	122.41	307.05		
4	4938.03	30.00	122.41	4490.32	-951.90	1499.43	0.00	0.00	1776.06		
5	6138.03	0.00	0.00	5636.24	-1116.46	1758.65	2.50	180.00	2083.11		
6	8281.79	0.00	0.00	7780.00	-1116.46	1758.65	0.00	0.00	2083.11	McCoy 4-22-33	

DESIGN TARGET DETAILS

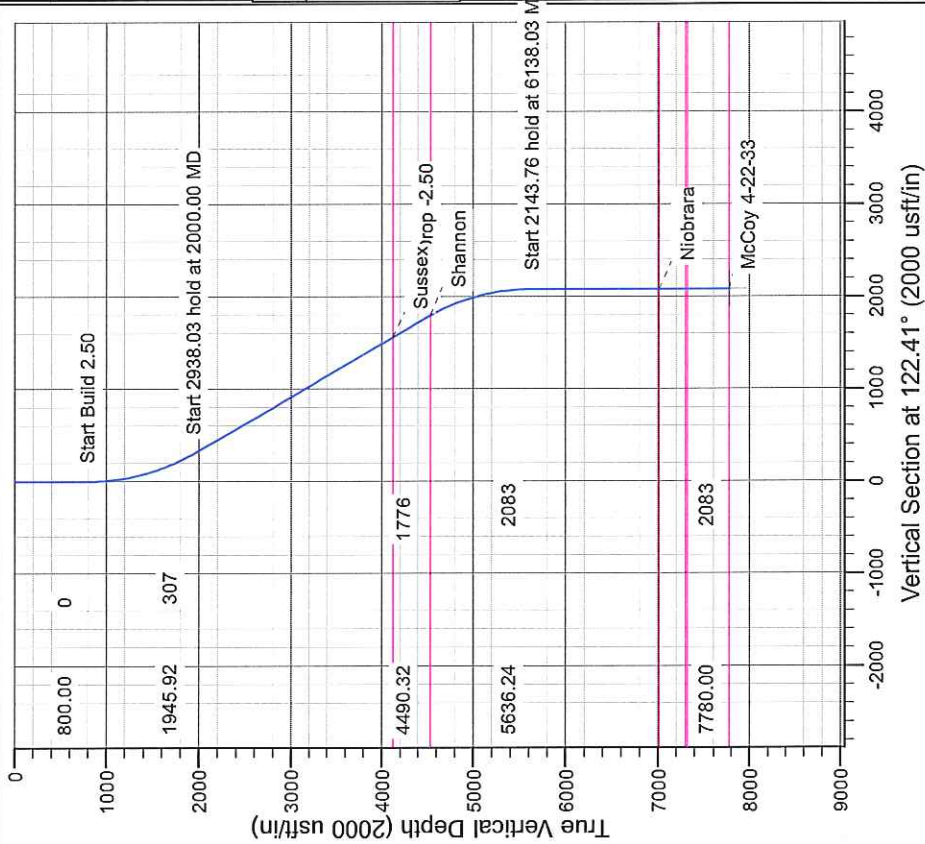
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
McCoy 4-22-33	7780.00	-1116.46	1758.65	1888423.365	3136583.551	40.27150	-105.01061	Point
- plan hits target center								

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
4121.00	4511.57	Sussex	0.00	
4532.00	4985.87	Shannon	0.00	
7015.00	7516.79	Niobrara	0.00	
7309.00	7810.79	Ft Hays	0.00	
7327.00	7828.79	Codell	0.00	
7780.00	8281.79	J Sand	0.00	

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Mcoy 4-22-33 - Slot 4-22-33, Grid North  
Vertical (TVD) Reference: WELL @ 5028.00usft (Original Well Elev)  
Section (VS) Reference: Slot - 4-22-33(0.00N, 0.00E)  
Measured Depth Reference: WELL @ 5028.00usft (Original Well Elev)  
Calculation Method: Minimum Curvature





**Mak J**

**McCoy 11-33 Pad**

**11-33**

**McCoy 4-22-33 - Slot 4-22-33**

**McCoy 4-22-33**

**Plan: Design #1**

## **Standard Planning Report**

**15 January, 2013**



Database:	Compass DB Connection	Local Co-ordinate Reference:	Field 11-33
Company:	Mak J	TVD Reference:	WELL @ 5028.00usft (Original Well Elev)
Project:	McCoy 11-33 Pad	MD Reference:	WELL @ 5028.00usft (Original Well Elev)
Site:	11-33	North Reference:	Grid
Well:	Mccoy 4-22-33	Survey Calculation Method:	Minimum Curvature
Wellbore:	McCoy 4-22-33		
Design:	Design #1		

Project	McCoy 11-33 Pad		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	11-33		
Site Position:		Northing:	1,889,583.551 usft
From:	Lat/Long	Easting:	3,134,824.666 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Grid Convergence:	0.30 °

Well	Mccoy 4-22-33 - Slot 4-22-33		
Well Position	+N/-S	-43.73 usft	Northing:
	+E/-W	0.23 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level:
			5,028.00 usft

Wellbore	McCoy 4-22-33		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	12/19/2012	8.78
			Dip Angle
			(°)
			Field Strength
			(nT)
			52,877

Design	Design #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	-43.73	0.23
			Direction
			(°)
			122.41

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	-43.73	0.23	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	-43.73	0.23	0.00	0.00	0.00	0.00	
2,000.00	30.00	122.41	1,945.92	-208.29	259.46	2.50	2.50	0.00	122.41	
4,938.03	30.00	122.41	4,490.32	-995.62	1,499.66	0.00	0.00	0.00	0.00	
6,138.03	0.00	0.00	5,636.24	-1,160.19	1,758.88	2.50	-2.50	0.00	180.00	
8,281.79	0.00	0.00	7,780.00	-1,160.19	1,758.88	0.00	0.00	0.00	0.00	McCoy 4-22-33

# Native Navigation Planning Report

<b>Database:</b>	Compass DB Connection	<b>Local Co-ordinate Reference:</b>	Field 11-33
<b>Company:</b>	Mak J	<b>TVD Reference:</b>	WELL @ 5028.00usft (Original Well Elev)
<b>Project:</b>	McCoy 11-33 Pad	<b>MD Reference:</b>	WELL @ 5028.00usft (Original Well Elev)
<b>Site:</b>	11-33	<b>North Reference:</b>	Grid
<b>Well:</b>	McCoy 4-22-33	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McCoy 4-22-33		
<b>Design:</b>	Design #1		

## Planned 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)
0.00	0.00	0.00	0.00	-43.73	0.23	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	-43.73	0.23	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	-43.73	0.23	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	-43.73	0.23	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	-43.73	0.23	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	-43.73	0.23	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	-43.73	0.23	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	-43.73	0.23	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	-43.73	0.23	0.00	0.00	0.00	0.00
900.00	2.50	122.41	899.97	-44.90	2.07	2.18	2.50	2.50	0.00
1,000.00	5.00	122.41	999.75	-48.40	7.60	8.72	2.50	2.50	0.00
1,100.00	7.50	122.41	1,099.14	-54.23	16.79	19.61	2.50	2.50	0.00
1,200.00	10.00	122.41	1,197.97	-62.39	29.63	34.82	2.50	2.50	0.00
1,300.00	12.50	122.41	1,296.04	-72.84	46.10	54.33	2.50	2.50	0.00
1,400.00	15.00	122.41	1,393.17	-85.58	66.16	78.09	2.50	2.50	0.00
1,500.00	17.50	122.41	1,489.17	-100.58	89.78	106.07	2.50	2.50	0.00
1,600.00	20.00	122.41	1,583.85	-117.80	116.92	138.21	2.50	2.50	0.00
1,700.00	22.50	122.41	1,677.05	-137.23	147.52	174.46	2.50	2.50	0.00
1,800.00	25.00	122.41	1,768.57	-158.81	181.51	214.73	2.50	2.50	0.00
1,900.00	27.50	122.41	1,858.25	-182.51	218.85	258.95	2.50	2.50	0.00
2,000.00	30.00	122.41	1,945.92	-208.29	259.46	307.05	2.50	2.50	0.00
2,100.00	30.00	122.41	2,032.52	-235.09	301.67	357.05	0.00	0.00	0.00
2,200.00	30.00	122.41	2,119.12	-261.89	343.88	407.05	0.00	0.00	0.00
2,300.00	30.00	122.41	2,205.72	-288.68	386.09	457.05	0.00	0.00	0.00
2,400.00	30.00	122.41	2,292.33	-315.48	428.30	507.05	0.00	0.00	0.00
2,500.00	30.00	122.41	2,378.93	-342.28	470.52	557.05	0.00	0.00	0.00
2,600.00	30.00	122.41	2,465.53	-369.08	512.73	607.05	0.00	0.00	0.00
2,700.00	30.00	122.41	2,552.13	-395.88	554.94	657.05	0.00	0.00	0.00
2,800.00	30.00	122.41	2,638.74	-422.67	597.15	707.05	0.00	0.00	0.00
2,900.00	30.00	122.41	2,725.34	-449.47	639.37	757.05	0.00	0.00	0.00
3,000.00	30.00	122.41	2,811.94	-476.27	681.58	807.05	0.00	0.00	0.00
3,100.00	30.00	122.41	2,898.54	-503.07	723.79	857.05	0.00	0.00	0.00
3,200.00	30.00	122.41	2,985.15	-529.87	766.00	907.05	0.00	0.00	0.00
3,300.00	30.00	122.41	3,071.75	-556.66	808.21	957.05	0.00	0.00	0.00
3,400.00	30.00	122.41	3,158.35	-583.46	850.43	1,007.05	0.00	0.00	0.00
3,500.00	30.00	122.41	3,244.95	-610.26	892.64	1,057.05	0.00	0.00	0.00
3,600.00	30.00	122.41	3,331.56	-637.06	934.85	1,107.05	0.00	0.00	0.00
3,700.00	30.00	122.41	3,418.16	-663.86	977.06	1,157.05	0.00	0.00	0.00
3,800.00	30.00	122.41	3,504.76	-690.65	1,019.28	1,207.05	0.00	0.00	0.00
3,900.00	30.00	122.41	3,591.36	-717.45	1,061.49	1,257.05	0.00	0.00	0.00
4,000.00	30.00	122.41	3,677.97	-744.25	1,103.70	1,307.05	0.00	0.00	0.00
4,100.00	30.00	122.41	3,764.57	-771.05	1,145.91	1,357.05	0.00	0.00	0.00
4,200.00	30.00	122.41	3,851.17	-797.85	1,188.12	1,407.05	0.00	0.00	0.00
4,300.00	30.00	122.41	3,937.77	-824.64	1,230.34	1,457.05	0.00	0.00	0.00
4,400.00	30.00	122.41	4,024.38	-851.44	1,272.55	1,507.05	0.00	0.00	0.00
4,500.00	30.00	122.41	4,110.98	-878.24	1,314.76	1,557.05	0.00	0.00	0.00
4,511.57	30.00	122.41	4,121.00	-881.34	1,319.65	1,562.83	0.00	0.00	0.00
<b>Sussex</b>									
4,600.00	30.00	122.41	4,197.58	-905.04	1,356.97	1,607.05	0.00	0.00	0.00
4,700.00	30.00	122.41	4,284.18	-931.84	1,399.19	1,657.05	0.00	0.00	0.00
4,800.00	30.00	122.41	4,370.79	-958.63	1,441.40	1,707.05	0.00	0.00	0.00
4,900.00	30.00	122.41	4,457.39	-985.43	1,483.61	1,757.05	0.00	0.00	0.00
4,938.03	30.00	122.41	4,490.32	-995.62	1,499.66	1,776.06	0.00	0.00	0.00
4,985.87	28.80	122.41	4,532.00	-1,008.21	1,519.49	1,799.55	2.50	-2.50	0.00



<b>Database:</b>	Compass DB Connection	<b>Local Co-ordinate Reference:</b>	Field 11-33
<b>Company:</b>	Mak J	<b>TVD Reference:</b>	WELL @ 5028.00usft (Original Well Elev)
<b>Project:</b>	McCoy 11-33 Pad	<b>MD Reference:</b>	WELL @ 5028.00usft (Original Well Elev)
<b>Site:</b>	11-33	<b>North Reference:</b>	Grid
<b>Well:</b>	McCoy 4-22-33	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McCoy 4-22-33		
<b>Design:</b>	Design #1		

Planned 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)
<b>Shannon</b>									
5,000.00	28.45	122.41	4,544.40	-1,011.84	1,525.21	1,806.32	2.50	-2.50	0.00
5,100.00	25.95	122.41	4,633.34	-1,036.34	1,563.79	1,852.03	2.50	-2.50	0.00
5,200.00	23.45	122.41	4,724.18	-1,058.73	1,599.07	1,893.81	2.50	-2.50	0.00
5,300.00	20.95	122.41	4,816.76	-1,078.98	1,630.97	1,931.59	2.50	-2.50	0.00
5,400.00	18.45	122.41	4,910.90	-1,097.05	1,659.43	1,965.30	2.50	-2.50	0.00
5,500.00	15.95	122.41	5,006.42	-1,112.89	1,684.39	1,994.87	2.50	-2.50	0.00
5,600.00	13.45	122.41	5,103.14	-1,126.49	1,705.81	2,020.24	2.50	-2.50	0.00
5,700.00	10.95	122.41	5,200.87	-1,137.82	1,723.65	2,041.38	2.50	-2.50	0.00
5,800.00	8.45	122.41	5,299.43	-1,146.85	1,737.88	2,058.22	2.50	-2.50	0.00
5,900.00	5.95	122.41	5,398.64	-1,153.57	1,748.46	2,070.76	2.50	-2.50	0.00
6,000.00	3.45	122.41	5,498.29	-1,157.96	1,755.38	2,078.95	2.50	-2.50	0.00
6,100.00	0.95	122.41	5,598.21	-1,160.02	1,758.62	2,082.79	2.50	-2.50	0.00
6,138.03	0.00	0.00	5,636.24	-1,160.19	1,758.88	2,083.11	2.50	-2.50	0.00
6,200.00	0.00	0.00	5,698.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
6,300.00	0.00	0.00	5,798.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
6,400.00	0.00	0.00	5,898.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
6,500.00	0.00	0.00	5,998.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
6,600.00	0.00	0.00	6,098.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
6,700.00	0.00	0.00	6,198.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
6,800.00	0.00	0.00	6,298.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
6,900.00	0.00	0.00	6,398.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
7,000.00	0.00	0.00	6,498.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
7,100.00	0.00	0.00	6,598.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
7,200.00	0.00	0.00	6,698.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
7,300.00	0.00	0.00	6,798.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
7,400.00	0.00	0.00	6,898.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
7,500.00	0.00	0.00	6,998.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
7,516.79	0.00	0.00	7,015.00	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
<b>Niobrara</b>									
7,600.00	0.00	0.00	7,098.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
7,700.00	0.00	0.00	7,198.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
7,800.00	0.00	0.00	7,298.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
7,810.79	0.00	0.00	7,309.00	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
<b>Ft Hays</b>									
7,828.79	0.00	0.00	7,327.00	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
<b>Codell</b>									
7,900.00	0.00	0.00	7,398.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
8,000.00	0.00	0.00	7,498.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
8,100.00	0.00	0.00	7,598.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
8,200.00	0.00	0.00	7,698.21	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
8,281.79	0.00	0.00	7,780.00	-1,160.19	1,758.88	2,083.11	0.00	0.00	0.00
<b>J Sand - McCoy 4-22-33</b>									

<b>Database:</b>	Compass DB Connection	<b>Local Co-ordinate Reference:</b>	Field 11-33
<b>Company:</b>	Mak J	<b>TVD Reference:</b>	WELL @ 5028.00usft (Original Well Elev)
<b>Project:</b>	McCoy 11-33 Pad	<b>MD Reference:</b>	WELL @ 5028.00usft (Original Well Elev)
<b>Site:</b>	11-33	<b>North Reference:</b>	Grid
<b>Well:</b>	McCoy 4-22-33	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McCoy 4-22-33		
<b>Design:</b>	Design #1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
McCoy 4-22-33	0.00	0.00	7,780.00	-1,160.19	1,758.88	1,888,423.365	3,136,583.551	40.27150	-105.01061
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth					
(usft)	(usft)	Name	Lithology	Dip	Dip Direction	
				(°)	(°)	
4,511.57	4,389.00	Sussex		0.00		
4,985.87	4,800.00	Shannon		0.00		
7,516.79	7,283.00	Niobrara		0.00		
7,810.79	7,577.00	Ft Hays		0.00		
7,828.79	7,595.00	Codell		0.00		
8,281.79	8,048.00	J Sand		0.00		