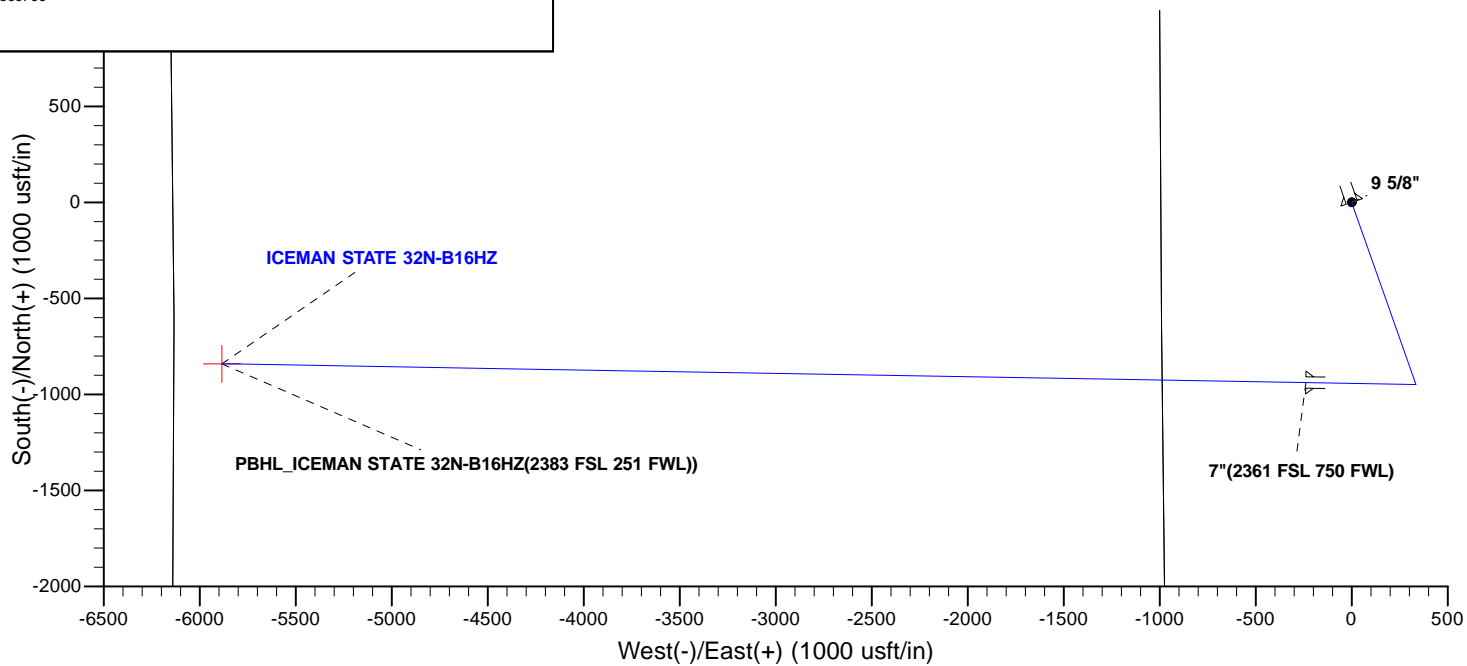
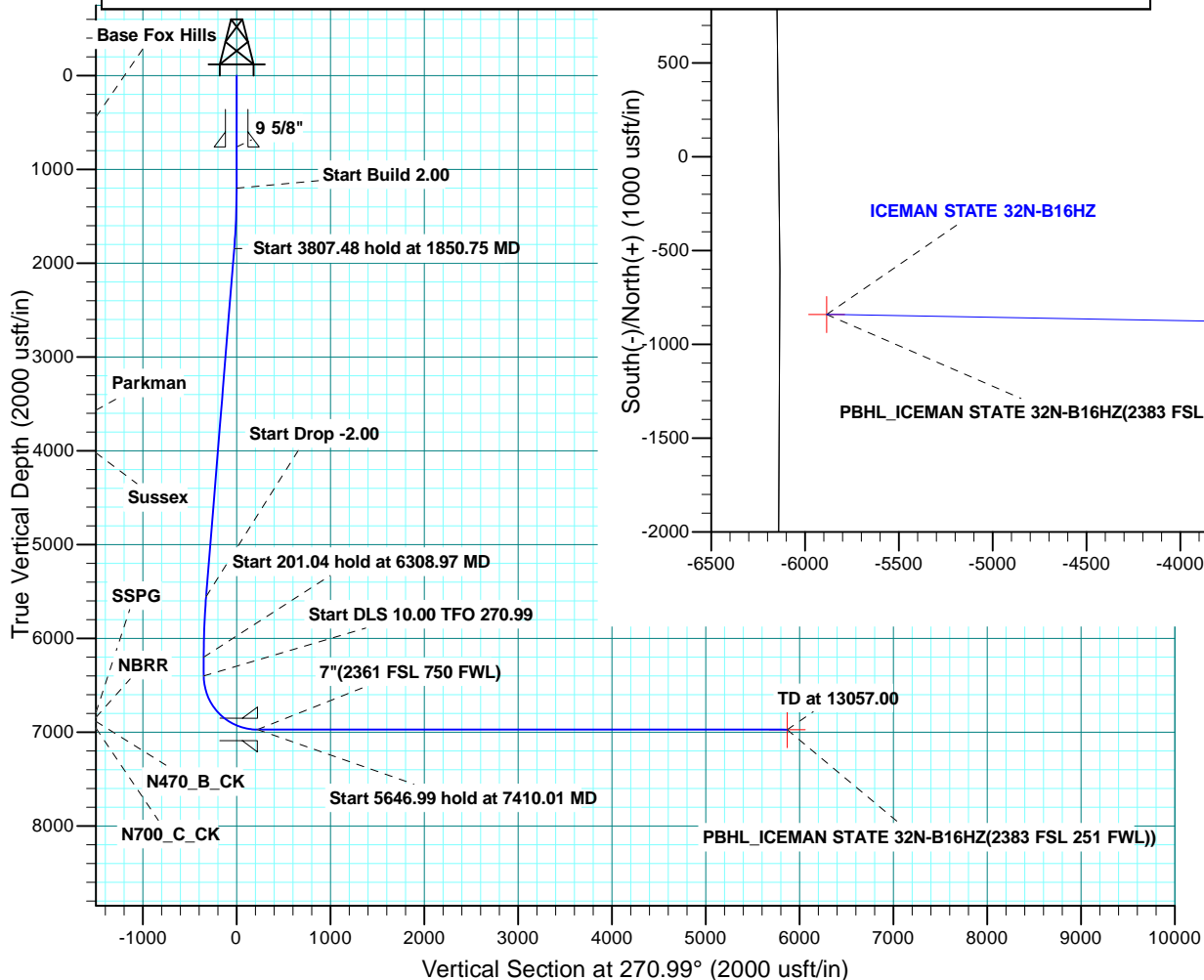


SHL: ICEMAN STATE 32N-B16HZ							
GL 4797 & KB 17 @ 4814.00usft (ASSUMED)							
	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
	0.00	0.00	14609596.89	1673169.65	40.227495	-104.882656	
DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 6974.00		-840.00	-5884.72	14608749.11	1667286.05	40.225186	-104.903738
- plan hits target center							
SECTION DETAILS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00
1850.75	13.01	160.56	1845.17	-69.40	24.49	2.00	160.56
5658.22	13.01	160.56	5554.83	-878.00	309.81	0.00	0.00
6308.97	0.00	0.00	6200.00	-947.40	334.30	2.00	180.00
6510.01	0.00	0.00	6401.04	-947.40	334.30	0.00	0.00
7410.01	90.00	270.99	6974.00	-937.51	-238.57	10.00	270.99
13057.00	90.00	270.99	6974.00	-840.00	-5884.72	0.00	0.00
PBHL_ICEMAN STATE 32N-B16HZ(2383 FSL 251 FWL)							



CASING DETAILS			
TVD	MD	Name	Size
761.00	761.00	9 5/8"	9.625
6974.00	7410.01	7"	7.000

FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	Inc
444.00	444.00	Base Fox Hills	0.00
3568.00	3619.01	Parkman	13.01
4022.00	4084.98	Sussex	13.01
6791.00	6938.93	SSPG	42.89
6842.00	7013.21	NBRR	50.32
6886.00	7088.25	N470_B_CK	57.82
6959.00	7278.63	N700_C_CK	76.86



US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

ICEMAN PAD

ICEMAN STATE 32N-B16HZ

PLAN A

Plan: PERMIT REV-A

Standard Planning Report

04 December, 2014

Database:	Denver Sales	Local Co-ordinate Reference:	Well ICEMAN STATE 32N-B16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4797 & KB 17 @ 4814.00usft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4797 & KB 17 @ 4814.00usft (ASSUMED)
Site:	ICEMAN PAD	North Reference:	True
Well:	ICEMAN STATE 32N-B16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-A		

Project	WELD-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	ICEMAN PAD, SECTION 17, TOWNSHIP 3 NORTH, RANGE 67 WEST				
Site Position:		Northing:	14,609,536.80 usft	Latitude:	40.227330
From:	Lat/Long	Easting:	1,673,170.01 usft	Longitude:	-104.882655
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.08

Well	ICEMAN STATE 32N-B16HZ, 1970' FNL 995' FWL					
Well Position	+N/-S	60.09 usft	Northing:	14,609,596.89 usft	Latitude:	40.227495
	+E/-W	-0.28 usft	Easting:	1,673,169.65 usft	Longitude:	-104.882656
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,797.00 usft

Wellbore	PLAN A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/20/2014	8.45	66.77	52,667

Design	PERMIT REV-A			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	270.99

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	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,850.75	13.01	160.56	1,845.17	-69.40	24.49	2.00	2.00	0.00	160.56	
5,658.22	13.01	160.56	5,554.83	-878.00	309.81	0.00	0.00	0.00	0.00	
6,308.97	0.00	0.00	6,200.00	-947.40	334.30	2.00	-2.00	0.00	180.00	
6,510.01	0.00	0.00	6,401.04	-947.40	334.30	0.00	0.00	0.00	0.00	
7,410.01	90.00	270.99	6,974.00	-937.51	-238.57	10.00	10.00	-9.89	270.99	
13,057.00	90.00	270.99	6,974.00	-840.00	-5,884.72	0.00	0.00	0.00	0.00	PBHL_ICEMAN STAT

Database:	Denver Sales	Local Co-ordinate Reference:	Well ICEMAN STATE 32N-B16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4797 & KB 17 @ 4814.00usft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4797 & KB 17 @ 4814.00usft (ASSUMED)
Site:	ICEMAN PAD	North Reference:	True
Well:	ICEMAN STATE 32N-B16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-A		

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	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
444.00	0.00	0.00	444.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Fox Hills									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
761.00	0.00	0.00	761.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,300.00	2.00	160.56	1,299.98	-1.65	0.58	-0.61	2.00	2.00	0.00
1,400.00	4.00	160.56	1,399.84	-6.58	2.32	-2.44	2.00	2.00	0.00
1,500.00	6.00	160.56	1,499.45	-14.80	5.22	-5.48	2.00	2.00	0.00
1,600.00	8.00	160.56	1,598.70	-26.29	9.28	-9.73	2.00	2.00	0.00
1,700.00	10.00	160.56	1,697.47	-41.04	14.48	-15.19	2.00	2.00	0.00
1,800.00	12.00	160.56	1,795.62	-59.04	20.83	-21.85	2.00	2.00	0.00
1,850.75	13.01	160.56	1,845.17	-69.40	24.49	-25.68	2.00	2.00	0.00
Start 3807.48 hold at 1850.75 MD									
1,900.00	13.01	160.56	1,893.15	-79.86	28.18	-29.55	0.00	0.00	0.00
2,000.00	13.01	160.56	1,990.58	-101.10	35.67	-37.41	0.00	0.00	0.00
2,100.00	13.01	160.56	2,088.02	-122.33	43.17	-45.27	0.00	0.00	0.00
2,200.00	13.01	160.56	2,185.45	-143.57	50.66	-53.13	0.00	0.00	0.00
2,300.00	13.01	160.56	2,282.88	-164.81	58.15	-60.99	0.00	0.00	0.00
2,400.00	13.01	160.56	2,380.31	-186.04	65.65	-68.85	0.00	0.00	0.00
2,500.00	13.01	160.56	2,477.74	-207.28	73.14	-76.71	0.00	0.00	0.00
2,600.00	13.01	160.56	2,575.17	-228.52	80.64	-84.57	0.00	0.00	0.00
2,700.00	13.01	160.56	2,672.60	-249.76	88.13	-92.43	0.00	0.00	0.00
2,800.00	13.01	160.56	2,770.03	-270.99	95.62	-100.29	0.00	0.00	0.00
2,900.00	13.01	160.56	2,867.46	-292.23	103.12	-108.15	0.00	0.00	0.00
3,000.00	13.01	160.56	2,964.90	-313.47	110.61	-116.01	0.00	0.00	0.00
3,100.00	13.01	160.56	3,062.33	-334.71	118.10	-123.87	0.00	0.00	0.00
3,200.00	13.01	160.56	3,159.76	-355.94	125.60	-131.73	0.00	0.00	0.00
3,300.00	13.01	160.56	3,257.19	-377.18	133.09	-139.59	0.00	0.00	0.00
3,400.00	13.01	160.56	3,354.62	-398.42	140.59	-147.45	0.00	0.00	0.00
3,500.00	13.01	160.56	3,452.05	-419.65	148.08	-155.31	0.00	0.00	0.00
3,600.00	13.01	160.56	3,549.48	-440.89	155.57	-163.17	0.00	0.00	0.00
3,619.01	13.01	160.56	3,568.00	-444.93	157.00	-164.66	0.00	0.00	0.00
Parkman									
3,700.00	13.01	160.56	3,646.91	-462.13	163.07	-171.03	0.00	0.00	0.00
3,800.00	13.01	160.56	3,744.34	-483.37	170.56	-178.89	0.00	0.00	0.00
3,900.00	13.01	160.56	3,841.78	-504.60	178.05	-186.75	0.00	0.00	0.00
4,000.00	13.01	160.56	3,939.21	-525.84	185.55	-194.61	0.00	0.00	0.00
4,084.98	13.01	160.56	4,022.00	-543.89	191.92	-201.28	0.00	0.00	0.00

Database:	Denver Sales	Local Co-ordinate Reference:	Well ICEMAN STATE 32N-B16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4797 & KB 17 @ 4814.00usft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4797 & KB 17 @ 4814.00usft (ASSUMED)
Site:	ICEMAN PAD	North Reference:	True
Well:	ICEMAN STATE 32N-B16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-A		

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)
Sussex									
4,100.00	13.01	160.56	4,036.64	-547.08	193.04	-202.47	0.00	0.00	0.00
4,200.00	13.01	160.56	4,134.07	-568.31	200.54	-210.33	0.00	0.00	0.00
4,300.00	13.01	160.56	4,231.50	-589.55	208.03	-218.18	0.00	0.00	0.00
4,400.00	13.01	160.56	4,328.93	-610.79	215.52	-226.04	0.00	0.00	0.00
4,500.00	13.01	160.56	4,426.36	-632.03	223.02	-233.90	0.00	0.00	0.00
4,600.00	13.01	160.56	4,523.79	-653.26	230.51	-241.76	0.00	0.00	0.00
4,700.00	13.01	160.56	4,621.22	-674.50	238.00	-249.62	0.00	0.00	0.00
4,800.00	13.01	160.56	4,718.66	-695.74	245.50	-257.48	0.00	0.00	0.00
4,900.00	13.01	160.56	4,816.09	-716.98	252.99	-265.34	0.00	0.00	0.00
5,000.00	13.01	160.56	4,913.52	-738.21	260.49	-273.20	0.00	0.00	0.00
5,100.00	13.01	160.56	5,010.95	-759.45	267.98	-281.06	0.00	0.00	0.00
5,200.00	13.01	160.56	5,108.38	-780.69	275.47	-288.92	0.00	0.00	0.00
5,300.00	13.01	160.56	5,205.81	-801.92	282.97	-296.78	0.00	0.00	0.00
5,400.00	13.01	160.56	5,303.24	-823.16	290.46	-304.64	0.00	0.00	0.00
5,500.00	13.01	160.56	5,400.67	-844.40	297.95	-312.50	0.00	0.00	0.00
5,600.00	13.01	160.56	5,498.10	-865.64	305.45	-320.36	0.00	0.00	0.00
5,658.22	13.01	160.56	5,554.83	-878.00	309.81	-324.94	0.00	0.00	0.00
Start Drop -2.00									
5,700.00	12.18	160.56	5,595.60	-886.59	312.84	-328.12	2.00	-2.00	0.00
5,800.00	10.18	160.56	5,693.70	-904.88	319.29	-334.88	2.00	-2.00	0.00
5,900.00	8.18	160.56	5,792.41	-919.92	324.60	-340.45	2.00	-2.00	0.00
6,000.00	6.18	160.56	5,891.63	-931.70	328.76	-344.81	2.00	-2.00	0.00
6,100.00	4.18	160.56	5,991.21	-940.22	331.76	-347.96	2.00	-2.00	0.00
6,200.00	2.18	160.56	6,091.05	-945.45	333.61	-349.90	2.00	-2.00	0.00
6,300.00	0.18	160.56	6,191.03	-947.39	334.30	-350.61	2.00	-2.00	0.00
6,308.97	0.00	0.00	6,200.00	-947.40	334.30	-350.62	2.00	-2.00	0.00
Start 201.04 hold at 6308.97 MD									
6,400.00	0.00	0.00	6,291.03	-947.40	334.30	-350.62	0.00	0.00	0.00
6,500.00	0.00	0.00	6,391.03	-947.40	334.30	-350.62	0.00	0.00	0.00
6,510.01	0.00	0.00	6,401.04	-947.40	334.30	-350.62	0.00	0.00	0.00
Start DLS 10.00 TFO 270.99									
6,600.00	9.00	270.99	6,490.66	-947.28	327.25	-343.57	10.00	10.00	0.00
6,700.00	19.00	270.99	6,587.56	-946.86	303.09	-319.41	10.00	10.00	0.00
6,800.00	29.00	270.99	6,678.80	-946.16	262.48	-278.79	10.00	10.00	0.00
6,900.00	39.00	270.99	6,761.60	-945.20	206.64	-222.94	10.00	10.00	0.00
6,938.93	42.89	270.99	6,791.00	-944.76	181.14	-197.44	10.00	10.00	0.00
SSPG									
7,000.00	49.00	270.99	6,833.45	-944.00	137.28	-153.57	10.00	10.00	0.00
7,013.21	50.32	270.99	6,842.00	-943.82	127.21	-143.50	10.00	10.00	0.00
NBRR									
7,088.25	57.82	270.99	6,886.00	-942.78	66.50	-82.78	10.00	10.00	0.00
N470_B_CK									
7,100.00	59.00	270.99	6,892.15	-942.60	56.49	-72.77	10.00	10.00	0.00
7,200.00	69.00	270.99	6,935.94	-941.05	-33.26	17.00	10.00	10.00	0.00
7,278.63	76.86	270.99	6,959.00	-939.76	-108.36	92.10	10.00	10.00	0.00
N700_C_CK									
7,300.00	79.00	270.99	6,963.47	-939.39	-129.25	113.00	10.00	10.00	0.00
7,400.00	89.00	270.99	6,973.91	-937.68	-228.56	212.33	10.00	10.00	0.00
7,410.01	90.00	270.99	6,974.00	-937.51	-238.57	222.34	10.00	10.00	0.00
Start 5646.99 hold at 7410.01 MD - 7"(2361 FSL 750 FWL)									

Database:	Denver Sales	Local Co-ordinate Reference:	Well ICEMAN STATE 32N-B16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4797 & KB 17 @ 4814.00usft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4797 & KB 17 @ 4814.00usft (ASSUMED)
Site:	ICEMAN PAD	North Reference:	True
Well:	ICEMAN STATE 32N-B16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-A		

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)
7,500.00	90.00	270.99	6,974.00	-935.95	-328.55	312.33	0.00	0.00	0.00
7,600.00	90.00	270.99	6,974.00	-934.23	-428.53	412.33	0.00	0.00	0.00
7,700.00	90.00	270.99	6,974.00	-932.50	-528.52	512.33	0.00	0.00	0.00
7,800.00	90.00	270.99	6,974.00	-930.77	-628.50	612.33	0.00	0.00	0.00
7,900.00	90.00	270.99	6,974.00	-929.05	-728.49	712.33	0.00	0.00	0.00
8,000.00	90.00	270.99	6,974.00	-927.32	-828.47	812.33	0.00	0.00	0.00
8,100.00	90.00	270.99	6,974.00	-925.59	-928.46	912.33	0.00	0.00	0.00
8,200.00	90.00	270.99	6,974.00	-923.87	-1,028.44	1,012.33	0.00	0.00	0.00
8,300.00	90.00	270.99	6,974.00	-922.14	-1,128.43	1,112.33	0.00	0.00	0.00
8,400.00	90.00	270.99	6,974.00	-920.41	-1,228.41	1,212.33	0.00	0.00	0.00
8,500.00	90.00	270.99	6,974.00	-918.69	-1,328.40	1,312.33	0.00	0.00	0.00
8,600.00	90.00	270.99	6,974.00	-916.96	-1,428.38	1,412.33	0.00	0.00	0.00
8,700.00	90.00	270.99	6,974.00	-915.23	-1,528.37	1,512.33	0.00	0.00	0.00
8,800.00	90.00	270.99	6,974.00	-913.51	-1,628.35	1,612.33	0.00	0.00	0.00
8,900.00	90.00	270.99	6,974.00	-911.78	-1,728.34	1,712.33	0.00	0.00	0.00
9,000.00	90.00	270.99	6,974.00	-910.05	-1,828.32	1,812.33	0.00	0.00	0.00
9,100.00	90.00	270.99	6,974.00	-908.33	-1,928.31	1,912.33	0.00	0.00	0.00
9,200.00	90.00	270.99	6,974.00	-906.60	-2,028.29	2,012.33	0.00	0.00	0.00
9,300.00	90.00	270.99	6,974.00	-904.87	-2,128.28	2,112.33	0.00	0.00	0.00
9,400.00	90.00	270.99	6,974.00	-903.15	-2,228.26	2,212.33	0.00	0.00	0.00
9,500.00	90.00	270.99	6,974.00	-901.42	-2,328.25	2,312.33	0.00	0.00	0.00
9,600.00	90.00	270.99	6,974.00	-899.69	-2,428.23	2,412.33	0.00	0.00	0.00
9,700.00	90.00	270.99	6,974.00	-897.97	-2,528.22	2,512.33	0.00	0.00	0.00
9,800.00	90.00	270.99	6,974.00	-896.24	-2,628.20	2,612.33	0.00	0.00	0.00
9,900.00	90.00	270.99	6,974.00	-894.51	-2,728.19	2,712.33	0.00	0.00	0.00
10,000.00	90.00	270.99	6,974.00	-892.79	-2,828.17	2,812.33	0.00	0.00	0.00
10,100.00	90.00	270.99	6,974.00	-891.06	-2,928.16	2,912.33	0.00	0.00	0.00
10,200.00	90.00	270.99	6,974.00	-889.33	-3,028.14	3,012.33	0.00	0.00	0.00
10,300.00	90.00	270.99	6,974.00	-887.61	-3,128.13	3,112.33	0.00	0.00	0.00
10,400.00	90.00	270.99	6,974.00	-885.88	-3,228.11	3,212.33	0.00	0.00	0.00
10,500.00	90.00	270.99	6,974.00	-884.15	-3,328.10	3,312.33	0.00	0.00	0.00
10,600.00	90.00	270.99	6,974.00	-882.43	-3,428.08	3,412.33	0.00	0.00	0.00
10,700.00	90.00	270.99	6,974.00	-880.70	-3,528.07	3,512.33	0.00	0.00	0.00
10,800.00	90.00	270.99	6,974.00	-878.97	-3,628.05	3,612.33	0.00	0.00	0.00
10,900.00	90.00	270.99	6,974.00	-877.25	-3,728.04	3,712.33	0.00	0.00	0.00
11,000.00	90.00	270.99	6,974.00	-875.52	-3,828.02	3,812.33	0.00	0.00	0.00
11,100.00	90.00	270.99	6,974.00	-873.79	-3,928.01	3,912.33	0.00	0.00	0.00
11,200.00	90.00	270.99	6,974.00	-872.06	-4,027.99	4,012.33	0.00	0.00	0.00
11,300.00	90.00	270.99	6,974.00	-870.34	-4,127.98	4,112.33	0.00	0.00	0.00
11,400.00	90.00	270.99	6,974.00	-868.61	-4,227.96	4,212.33	0.00	0.00	0.00
11,500.00	90.00	270.99	6,974.00	-866.88	-4,327.95	4,312.33	0.00	0.00	0.00
11,600.00	90.00	270.99	6,974.00	-865.16	-4,427.93	4,412.33	0.00	0.00	0.00
11,700.00	90.00	270.99	6,974.00	-863.43	-4,527.92	4,512.33	0.00	0.00	0.00
11,800.00	90.00	270.99	6,974.00	-861.70	-4,627.90	4,612.33	0.00	0.00	0.00
11,900.00	90.00	270.99	6,974.00	-859.98	-4,727.89	4,712.33	0.00	0.00	0.00
12,000.00	90.00	270.99	6,974.00	-858.25	-4,827.87	4,812.33	0.00	0.00	0.00
12,100.00	90.00	270.99	6,974.00	-856.52	-4,927.86	4,912.33	0.00	0.00	0.00
12,200.00	90.00	270.99	6,974.00	-854.80	-5,027.85	5,012.33	0.00	0.00	0.00
12,300.00	90.00	270.99	6,974.00	-853.07	-5,127.83	5,112.33	0.00	0.00	0.00
12,400.00	90.00	270.99	6,974.00	-851.34	-5,227.82	5,212.33	0.00	0.00	0.00
12,500.00	90.00	270.99	6,974.00	-849.62	-5,327.80	5,312.33	0.00	0.00	0.00
12,600.00	90.00	270.99	6,974.00	-847.89	-5,427.79	5,412.33	0.00	0.00	0.00

Database:	Denver Sales	Local Co-ordinate Reference:	Well ICEMAN STATE 32N-B16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4797 & KB 17 @ 4814.00usft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4797 & KB 17 @ 4814.00usft (ASSUMED)
Site:	ICEMAN PAD	North Reference:	True
Well:	ICEMAN STATE 32N-B16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-A		

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)	
12,700.00	90.00	270.99	6,974.00	-846.16	-5,527.77	5,512.33	0.00	0.00	0.00	
12,800.00	90.00	270.99	6,974.00	-844.44	-5,627.76	5,612.33	0.00	0.00	0.00	
12,900.00	90.00	270.99	6,974.00	-842.71	-5,727.74	5,712.33	0.00	0.00	0.00	
13,000.00	90.00	270.99	6,974.00	-840.98	-5,827.73	5,812.33	0.00	0.00	0.00	
13,057.00	90.00	270.99	6,974.00	-840.00	-5,884.72	5,869.33	0.00	0.00	0.00	
TD at 13057.00 - PBHL_ICEMAN STATE 32N-B16HZ(2381 FSL 254 FWL)										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude		
PBHL_ICEMAN STATE : - plan hits target center - Point	0.00	0.00	6,974.00	-840.00	-5,884.72	14,608,749.10	1,667,286.05	40.225186 -104.903739		

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name			Casing Diameter (in)	Hole Diameter (in)
761.00	761.00	9 5/8"			9.625	13.500
7,410.01	6,974.00	7"(2361 FSL 750 FWL)			7.000	8.750

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
444.00	444.00	Base Fox Hills				
3,619.01	3,568.00	Parkman				
4,084.98	4,022.00	Sussex				
6,938.93	6,791.00	SSPG				
7,013.21	6,842.00	NBRR				
7,088.25	6,886.00	N470_B_CK				
7,278.63	6,959.00	N700_C_CK				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,200.00	1,200.00	0.00	0.00	Start Build 2.00	
1,850.75	1,845.17	-69.40	24.49	Start 3807.48 hold at 1850.75 MD	
5,658.22	5,554.83	-878.00	309.81	Start Drop -2.00	
6,308.97	6,200.00	-947.40	334.30	Start 201.04 hold at 6308.97 MD	
6,510.01	6,401.04	-947.40	334.30	Start DLS 10.00 TFO 270.99	
7,410.01	6,974.00	-937.51	-238.57	Start 5646.99 hold at 7410.01 MD	
13,057.00	6,974.00	-840.00	-5,884.72	TD at 13057.00	