

BAYSWATER E & P LLC

Location: COLORADO Slot: SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL,SEC.28)

Field: WELD COUNTY (NAD83/TRUE NORTH) Well: THORNTON C-29-30HN

Facility: SEC 28-T07N-R66W Wellbore: THORNTON C-29-30HN PWB

Plot reference wellpath is THORNTON C-29-30HN PWP (REV-A.0)

Grid System: NAD83 / Lambert Colorado SP, Northern Zone (S01), US feet

True vertical depths are referenced to TRUE 38 (4909'GL+25KB @ 4934'FWS) (RWB)

North Reference: True north

Measured depths are referenced to TRUE 38 (4909'GL+25KB @ 4934'FWS) (RWB)

Scale: True distance

TRUE 38 (4909'GL+25KB @ 4934'FWS) (RWB) to Mean Sea Level: 4934 feet

Depths are in feet

Mean Sea Level to Ground level (At Slot: SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL,SEC.28)): 0 feet

Created by: bushjmh on 2019-04-12

Coordinates are in feet referenced to Slot

Database: Denver

Location Information

Facility Name				Grid East (US F)	Grid North (US F)	Latitude	Longitude
SEC 28-T07N-R66W				319581.880	144361.053	40°32'55.047N	104°47'23.504W
Slot	Local N (F)	Local E (F)	Grid East (US F)	Grid North (US F)	Latitude	Longitude	
SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL, SEC.28)	-31.66	48.33	319630.435	144365.786	40°32'54.737N	104°47'23.879W	
TRUE 38 (4909'GL+25KB @ 4934'FWS) (RWB) to Ground level (At Slot: SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL, SEC.28))							4934'
Mean Sea Level to Ground level (At Slot: SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL, SEC.28))							0'
TRUE 38 (4909'GL+25KB @ 4934'FWS) (RWB) to Mean Sea Level							4934'

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US F)	Grid North (US F)	Latitude	Longitude
THORNTON C-29-30HN BHL PLAT (545'FNL & 470'FWL,SEC.30)	17695.89	7214.00	915.36	-10815.81	3196107.29	1444288.66	40°33'03.75"N	104°49'48.99"W
THORNTON C-29-30HN LP PLAT (545'FNL & 470'FWL,SEC.29)	7712.84	7214.00	1121.76	-835.08	3196096.45	1444288.66	40°32'55.04"N	104°47'23.50"W
SEC 28-T07N-R66W HDL (460)	7800.00	31.33	0.00	3196091.02	1444061.12	40°32'55.04"N	104°47'23.86"W	
SEC 28-T07N-R66W HDL (460)	7800.00	31.33	0.00	3196091.02	1444061.12	40°32'55.04"N	104°47'23.86"W	
SEC 28-T07N-R66W HDL (460)	7800.00	31.33	0.00	3196091.02	1444061.12	40°32'55.04"N	104°47'23.86"W	
SEC 28-T07N-R66W	8000.00	31.33	0.00	3196091.02	1444061.12	40°32'55.04"N	104°47'23.86"W	
SEC 28-T07N-R66W	8000.00	31.33	0.00	3196091.02	1444061.12	40°32'55.04"N	104°47'23.86"W	
SEC 28-T07N-R66W	8000.00	31.33	0.00	3196091.02	1444061.12	40°32'55.04"N	104°47'23.86"W	

Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
25.00	1550.00	BH NewTrak	BH NewTrak (Standard)		THORNTON C-29-30HN PWB
1550.00	17695.89	BH AutoTrak Curve	BH AutoTrak Curve (Short)		THORNTON C-29-30HN PWB

Well Profile Data

Design Comment	MD (ft)	Inc. (°)	Az. (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US F)	Grid North (US F)	Latitude	Longitude
Tie On	25.00	0.000	347.141	25.00	0.00	0.00	0.00	0.00	0.00	0.00
End of Tangent	300.00	0.000	347.141	300.00	0.00	0.00	0.00	0.00	0.00	0.00
End of Build	841.81	10.836	347.141	838.58	49.80	-11.37	2.00	15.53		
End of Tangent	6701.04	10.836	347.141	6593.34	1123.72	-256.53	0.00	350.38		
End of Drop	6809.40	0.000	268.815	6701.05	1133.68	-258.90	10.00	353.48		
End of Build	7712.84	90.344	268.815	7274.00	1121.76	-835.08	10.00	626.70		
End of Tangent	17695.89	90.344	268.815	7214.00	915.36	-10815.81	0.00	10854.48		

Bottom Hole Location

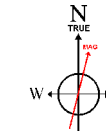
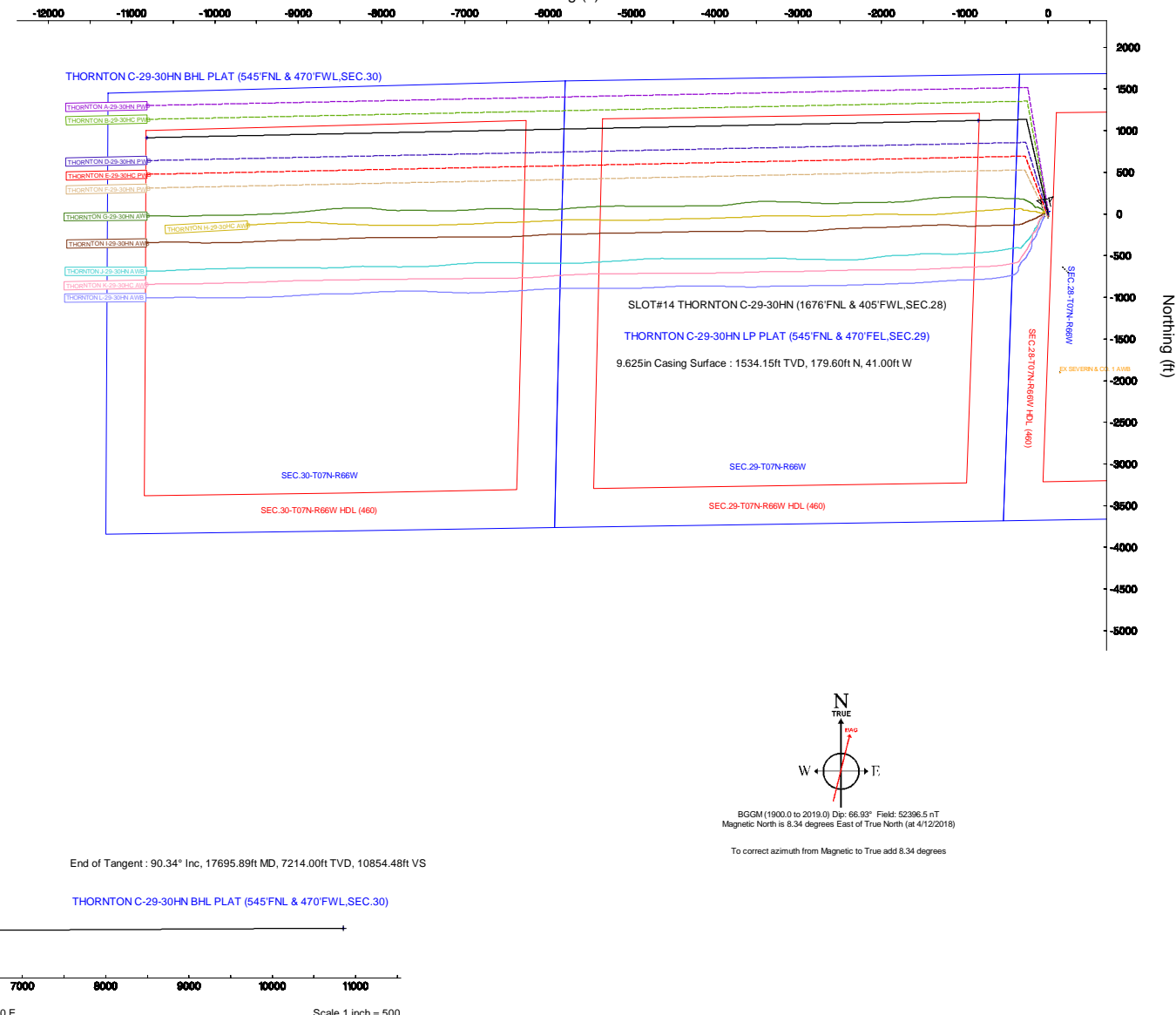
MD (ft)	Inc. (°)	Az. (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US F)	Grid North (US F)	Latitude	Longitude
17695.89	90.344	268.815	7214.00	915.36	-10815.81	3196107.29	1444288.66	40°33'03.75"N	104°49'48.99"W



TRUE #38

Scale 1 inch = 500

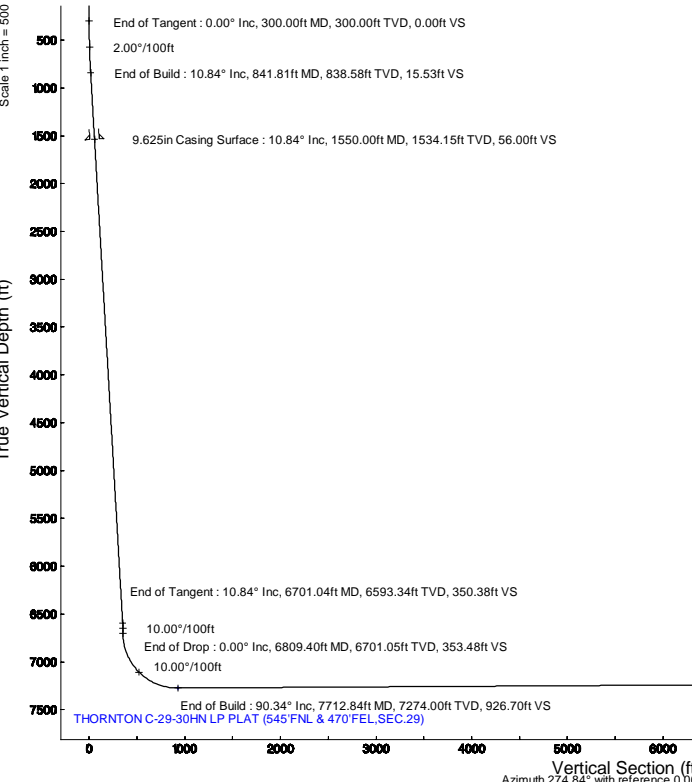
Easting (ft)



BGGM (1900.0 to 2019.0) Dip: 66.93° Field: 52396.5 nT
Magnetic North is 8.34 degrees East of True North (at 4/2/2018)

To correct azimuth from Magnetic to True add 8.34 degrees

Scale 1 inch = 500



Vertical Section (ft)
Azimuth 274.84° with reference 0.00 N, 0.00 E

Scale 1 inch = 500

Planned Wellpath Report

THORNTON C-29-30HN PWP (REV-A.0)

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REFERENCE WELLPATH IDENTIFICATION

Operator	BAYSWATER E & P LLC	Slot	SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL,SEC.28)
Area	COLORADO	Well	THORNTON C-29-30HN
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	THORNTON C-29-30HN PWB
Facility	SEC.28-T07N-R66W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.1
North Reference	True	User	Bushjamh
Scale	0.999970	Report Generated	4/12/2018 at 1:37:11 PM
Convergence at slot	0.46° East	Database/Source file	Denver/THORNTON_C-29-30HN_PWP_REV-A.0_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-31.66	48.33	3196930.44	1443459.79	40°32'54.733"N	104°47'28.878"W
Facility Reference Pt			3196881.86	1443491.05	40°32'55.046"N	104°47'29.504"W
Field Reference Pt			3174587.00	1430859.71	40°30'51.890"N	104°52'19.470"W

WELLPATH DATUM

Calculation method	Minimum curvature	TRUE 38 (4909'GL+25'KB @ 4934'RKB) (RKB) to Facility Vertical Datum	4934.00ft
Horizontal Reference Pt	Slot	TRUE 38 (4909'GL+25'KB @ 4934'RKB) (RKB) to Mean Sea Level	4934.00ft
Vertical Reference Pt	TRUE 38 (4909'GL+25'KB @ 4934'RKB) (RKB)	TRUE 38 (4909'GL+25'KB @ 4934'RKB) (RKB) to Ground Level at Slot (SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL,SEC.28))	4934.00ft
MD Reference Pt	TRUE 38 (4909'GL+25'KB @ 4934'RKB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	274.84°

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Area	COLORADO	Well	THORNTON C-29-30HN
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	THORNTON C-29-30HN PWB
Facility	SEC.28-T07N-R66W		

WELLPATH DATA (184 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	347.141	0.00	0.00	0.00	0.00	40°32'54.733"N	104°47'28.878"W	0.00	
25.00	0.000	347.141	25.00	0.00	0.00	0.00	40°32'54.733"N	104°47'28.878"W	0.00	Tie On
125.00†	0.000	347.141	125.00	0.00	0.00	0.00	40°32'54.733"N	104°47'28.878"W	0.00	
225.00†	0.000	347.141	225.00	0.00	0.00	0.00	40°32'54.733"N	104°47'28.878"W	0.00	
300.00	0.000	347.141	300.00	0.00	0.00	0.00	40°32'54.733"N	104°47'28.878"W	0.00	End of Tangent
325.00†	0.500	347.141	325.00	0.03	0.11	-0.02	40°32'54.734"N	104°47'28.878"W	2.00	
425.00†	2.500	347.141	424.96	0.83	2.66	-0.61	40°32'54.759"N	104°47'28.886"W	2.00	
525.00†	4.500	347.141	524.77	2.68	8.61	-1.97	40°32'54.818"N	104°47'28.903"W	2.00	
625.00†	6.500	347.141	624.30	5.60	17.95	-4.10	40°32'54.911"N	104°47'28.931"W	2.00	
725.00†	8.500	347.141	723.44	9.57	30.68	-7.00	40°32'55.036"N	104°47'28.969"W	2.00	
825.00†	10.500	347.141	822.07	14.58	46.77	-10.68	40°32'55.195"N	104°47'29.016"W	2.00	
841.81	10.836	347.141	838.58	15.53	49.80	-11.37	40°32'55.225"N	104°47'29.025"W	2.00	End of Build
925.00†	10.836	347.141	920.29	20.28	65.05	-14.85	40°32'55.376"N	104°47'29.070"W	0.00	
1025.00†	10.836	347.141	1018.51	26.00	83.38	-19.03	40°32'55.557"N	104°47'29.125"W	0.00	
1125.00†	10.836	347.141	1116.73	31.71	101.71	-23.22	40°32'55.738"N	104°47'29.179"W	0.00	
1225.00†	10.836	347.141	1214.94	37.43	120.04	-27.40	40°32'55.919"N	104°47'29.233"W	0.00	
1325.00†	10.836	347.141	1313.16	43.14	138.36	-31.59	40°32'56.100"N	104°47'29.287"W	0.00	
1425.00†	10.836	347.141	1411.38	48.86	156.69	-35.77	40°32'56.282"N	104°47'29.341"W	0.00	
1525.00†	10.836	347.141	1509.59	54.57	175.02	-39.95	40°32'56.463"N	104°47'29.396"W	0.00	
1625.00†	10.836	347.141	1607.81	60.29	193.35	-44.14	40°32'56.644"N	104°47'29.450"W	0.00	
1725.00†	10.836	347.141	1706.03	66.00	211.68	-48.32	40°32'56.825"N	104°47'29.504"W	0.00	
1825.00†	10.836	347.141	1804.24	71.72	230.01	-52.51	40°32'57.006"N	104°47'29.558"W	0.00	
1925.00†	10.836	347.141	1902.46	77.43	248.34	-56.69	40°32'57.187"N	104°47'29.612"W	0.00	
2025.00†	10.836	347.141	2000.68	83.15	266.66	-60.88	40°32'57.368"N	104°47'29.667"W	0.00	
2125.00†	10.836	347.141	2098.89	88.86	284.99	-65.06	40°32'57.549"N	104°47'29.721"W	0.00	
2225.00†	10.836	347.141	2197.11	94.58	303.32	-69.24	40°32'57.730"N	104°47'29.775"W	0.00	
2325.00†	10.836	347.141	2295.33	100.29	321.65	-73.43	40°32'57.912"N	104°47'29.829"W	0.00	
2425.00†	10.836	347.141	2393.55	106.01	339.98	-77.61	40°32'58.093"N	104°47'29.883"W	0.00	
2525.00†	10.836	347.141	2491.76	111.72	358.31	-81.80	40°32'58.274"N	104°47'29.938"W	0.00	
2625.00†	10.836	347.141	2589.98	117.44	376.64	-85.98	40°32'58.455"N	104°47'29.992"W	0.00	

Planned Wellpath Report

THORNTON C-29-30HN PWP (REV-A.0)

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REFERENCE WELLPATH IDENTIFICATION

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Area	COLORADO	Well	THORNTON C-29-30HN
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	THORNTON C-29-30HN PWB
Facility	SEC.28-T07N-R66W		

WELLPATH DATA (184 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2725.00†	10.836	347.141	2688.20	123.15	394.96	-90.16	40°32'58.636"N	104°47'30.046"W	0.00	
2825.00†	10.836	347.141	2786.41	128.87	413.29	-94.35	40°32'58.817"N	104°47'30.100"W	0.00	
2925.00†	10.836	347.141	2884.63	134.58	431.62	-98.53	40°32'58.998"N	104°47'30.154"W	0.00	
3025.00†	10.836	347.141	2982.85	140.29	449.95	-102.72	40°32'59.179"N	104°47'30.209"W	0.00	
3125.00†	10.836	347.141	3081.06	146.01	468.28	-106.90	40°32'59.360"N	104°47'30.263"W	0.00	
3225.00†	10.836	347.141	3179.28	151.72	486.61	-111.08	40°32'59.542"N	104°47'30.317"W	0.00	
3325.00†	10.836	347.141	3277.50	157.44	504.94	-115.27	40°32'59.723"N	104°47'30.371"W	0.00	
3425.00†	10.836	347.141	3375.71	163.15	523.26	-119.45	40°32'59.904"N	104°47'30.425"W	0.00	
3525.00†	10.836	347.141	3473.93	168.87	541.59	-123.64	40°33'00.085"N	104°47'30.480"W	0.00	
3625.00†	10.836	347.141	3572.15	174.58	559.92	-127.82	40°33'00.266"N	104°47'30.534"W	0.00	
3725.00†	10.836	347.141	3670.36	180.30	578.25	-132.01	40°33'00.447"N	104°47'30.588"W	0.00	
3825.00†	10.836	347.141	3768.58	186.01	596.58	-136.19	40°33'00.628"N	104°47'30.642"W	0.00	
3925.00†	10.836	347.141	3866.80	191.73	614.91	-140.37	40°33'00.809"N	104°47'30.696"W	0.00	
4025.00†	10.836	347.141	3965.02	197.44	633.24	-144.56	40°33'00.990"N	104°47'30.751"W	0.00	
4125.00†	10.836	347.141	4063.23	203.16	651.57	-148.74	40°33'01.172"N	104°47'30.805"W	0.00	
4225.00†	10.836	347.141	4161.45	208.87	669.89	-152.93	40°33'01.353"N	104°47'30.859"W	0.00	
4325.00†	10.836	347.141	4259.67	214.59	688.22	-157.11	40°33'01.534"N	104°47'30.913"W	0.00	
4425.00†	10.836	347.141	4357.88	220.30	706.55	-161.29	40°33'01.715"N	104°47'30.967"W	0.00	
4525.00†	10.836	347.141	4456.10	226.02	724.88	-165.48	40°33'01.896"N	104°47'31.022"W	0.00	
4625.00†	10.836	347.141	4554.32	231.73	743.21	-169.66	40°33'02.077"N	104°47'31.076"W	0.00	
4725.00†	10.836	347.141	4652.53	237.45	761.54	-173.85	40°33'02.258"N	104°47'31.130"W	0.00	
4825.00†	10.836	347.141	4750.75	243.16	779.87	-178.03	40°33'02.439"N	104°47'31.184"W	0.00	
4925.00†	10.836	347.141	4848.97	248.88	798.19	-182.21	40°33'02.620"N	104°47'31.238"W	0.00	
5025.00†	10.836	347.141	4947.18	254.59	816.52	-186.40	40°33'02.802"N	104°47'31.293"W	0.00	
5125.00†	10.836	347.141	5045.40	260.31	834.85	-190.58	40°33'02.983"N	104°47'31.347"W	0.00	
5225.00†	10.836	347.141	5143.62	266.02	853.18	-194.77	40°33'03.164"N	104°47'31.401"W	0.00	
5325.00†	10.836	347.141	5241.83	271.74	871.51	-198.95	40°33'03.345"N	104°47'31.455"W	0.00	
5425.00†	10.836	347.141	5340.05	277.45	889.84	-203.14	40°33'03.526"N	104°47'31.509"W	0.00	
5525.00†	10.836	347.141	5438.27	283.17	908.17	-207.32	40°33'03.707"N	104°47'31.564"W	0.00	
5625.00†	10.836	347.141	5536.49	288.88	926.49	-211.50	40°33'03.888"N	104°47'31.618"W	0.00	

Planned Wellpath Report

THORNTON C-29-30HN PWP (REV-A.0)

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Operator	BAYSWATER E & P LLC	Slot	SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL,SEC.28)
Area	COLORADO	Well	THORNTON C-29-30HN
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	THORNTON C-29-30HN PWB
Facility	SEC.28-T07N-R66W		

WELLPATH DATA (184 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5725.00†	10.836	347.141	5634.70	294.60	944.82	-215.69	40°33'04.069"N	104°47'31.672"W	0.00	
5825.00†	10.836	347.141	5732.92	300.31	963.15	-219.87	40°33'04.250"N	104°47'31.726"W	0.00	
5925.00†	10.836	347.141	5831.14	306.03	981.48	-224.06	40°33'04.432"N	104°47'31.781"W	0.00	
6025.00†	10.836	347.141	5929.35	311.74	999.81	-228.24	40°33'04.613"N	104°47'31.835"W	0.00	
6125.00†	10.836	347.141	6027.57	317.46	1018.14	-232.42	40°33'04.794"N	104°47'31.889"W	0.00	
6225.00†	10.836	347.141	6125.79	323.17	1036.47	-236.61	40°33'04.975"N	104°47'31.943"W	0.00	
6325.00†	10.836	347.141	6224.00	328.89	1054.79	-240.79	40°33'05.156"N	104°47'31.997"W	0.00	
6425.00†	10.836	347.141	6322.22	334.60	1073.12	-244.98	40°33'05.337"N	104°47'32.052"W	0.00	
6525.00†	10.836	347.141	6420.44	340.32	1091.45	-249.16	40°33'05.518"N	104°47'32.106"W	0.00	
6625.00†	10.836	347.141	6518.65	346.03	1109.78	-253.34	40°33'05.699"N	104°47'32.160"W	0.00	
6701.04	10.836	347.141	6593.34	350.38	1123.72	-256.53	40°33'05.837"N	104°47'32.201"W	0.00	End of Tangent
6725.00†	8.440	347.141	6616.96	351.60	1127.63	-257.42	40°33'05.876"N	104°47'32.213"W	10.00	
6809.40	0.000	268.815	6701.05	353.48	1133.68	-258.80	40°33'05.935"N	104°47'32.231"W	10.00	End of Drop
6825.00†	1.560	268.815	6716.65	353.69	1133.67	-259.01	40°33'05.935"N	104°47'32.233"W	10.00	
6925.00†	11.560	268.815	6815.87	365.04	1133.44	-270.42	40°33'05.933"N	104°47'32.381"W	10.00	
7025.00†	21.560	268.815	6911.60	393.35	1132.85	-298.88	40°33'05.927"N	104°47'32.750"W	10.00	
7125.00†	31.560	268.815	7000.93	437.76	1131.93	-343.53	40°33'05.918"N	104°47'33.328"W	10.00	
7225.00†	41.560	268.815	7081.16	496.92	1130.70	-403.01	40°33'05.906"N	104°47'34.099"W	10.00	
7325.00†	51.560	268.815	7149.83	569.04	1129.20	-475.51	40°33'05.891"N	104°47'35.038"W	10.00	
7425.00†	61.560	268.815	7204.86	651.92	1127.47	-558.83	40°33'05.874"N	104°47'36.117"W	10.00	
7525.00†	71.560	268.815	7244.59	743.05	1125.58	-650.44	40°33'05.855"N	104°47'37.304"W	10.00	
7625.00†	81.560	268.815	7267.81	839.65	1123.57	-747.56	40°33'05.836"N	104°47'38.562"W	10.00	
7712.84	90.344	268.815	7274.00†	926.70	1121.76	-835.08	40°33'05.818"N	104°47'39.696"W	10.00	End of Build
7725.00†	90.344	268.815	7273.93	938.79	1121.51	-847.23	40°33'05.815"N	104°47'39.853"W	0.00	
7825.00†	90.344	268.815	7273.33	1038.24	1119.44	-947.21	40°33'05.795"N	104°47'41.149"W	0.00	
7925.00†	90.344	268.815	7272.72	1137.69	1117.37	-1047.19	40°33'05.774"N	104°47'42.444"W	0.00	
8025.00†	90.344	268.815	7272.12	1237.13	1115.31	-1147.16	40°33'05.754"N	104°47'43.739"W	0.00	
8125.00†	90.344	268.815	7271.52	1336.58	1113.24	-1247.14	40°33'05.733"N	104°47'45.034"W	0.00	
8225.00†	90.344	268.815	7270.92	1436.02	1111.17	-1347.12	40°33'05.713"N	104°47'46.329"W	0.00	
8325.00†	90.344	268.815	7270.32	1535.47	1109.10	-1447.09	40°33'05.692"N	104°47'47.624"W	0.00	

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THORNTON C-29-30HN PWP (REV-A.0)

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REFERENCE WELLPATH IDENTIFICATION

Operator	BAYSWATER E & P LLC	Slot	SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL,SEC.28)
Area	COLORADO	Well	THORNTON C-29-30HN
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	THORNTON C-29-30HN PWB
Facility	SEC.28-T07N-R66W		

WELLPATH DATA (184 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8425.00†	90.344	268.815	7269.72	1634.92	1107.04	-1547.07	40°33'05.672"N	104°47'48.919"W	0.00	
8525.00†	90.344	268.815	7269.12	1734.36	1104.97	-1647.05	40°33'05.651"N	104°47'50.215"W	0.00	
8625.00†	90.344	268.815	7268.52	1833.81	1102.90	-1747.02	40°33'05.631"N	104°47'51.510"W	0.00	
8725.00†	90.344	268.815	7267.92	1933.26	1100.83	-1847.00	40°33'05.610"N	104°47'52.805"W	0.00	
8825.00†	90.344	268.815	7267.32	2032.70	1098.77	-1946.98	40°33'05.590"N	104°47'54.100"W	0.00	
8925.00†	90.344	268.815	7266.71	2132.15	1096.70	-2046.95	40°33'05.569"N	104°47'55.395"W	0.00	
9025.00†	90.344	268.815	7266.11	2231.59	1094.63	-2146.93	40°33'05.549"N	104°47'56.690"W	0.00	
9125.00†	90.344	268.815	7265.51	2331.04	1092.56	-2246.91	40°33'05.528"N	104°47'57.985"W	0.00	
9225.00†	90.344	268.815	7264.91	2430.49	1090.50	-2346.89	40°33'05.508"N	104°47'59.281"W	0.00	
9325.00†	90.344	268.815	7264.31	2529.93	1088.43	-2446.86	40°33'05.487"N	104°48'00.576"W	0.00	
9425.00†	90.344	268.815	7263.71	2629.38	1086.36	-2546.84	40°33'05.467"N	104°48'01.871"W	0.00	
9525.00†	90.344	268.815	7263.11	2728.83	1084.29	-2646.82	40°33'05.446"N	104°48'03.166"W	0.00	
9625.00†	90.344	268.815	7262.51	2828.27	1082.23	-2746.79	40°33'05.426"N	104°48'04.461"W	0.00	
9725.00†	90.344	268.815	7261.91	2927.72	1080.16	-2846.77	40°33'05.405"N	104°48'05.756"W	0.00	
9825.00†	90.344	268.815	7261.31	3027.17	1078.09	-2946.75	40°33'05.384"N	104°48'07.051"W	0.00	
9925.00†	90.344	268.815	7260.70	3126.61	1076.02	-3046.72	40°33'05.364"N	104°48'08.347"W	0.00	
10025.00†	90.344	268.815	7260.10	3226.06	1073.96	-3146.70	40°33'05.343"N	104°48'09.642"W	0.00	
10125.00†	90.344	268.815	7259.50	3325.50	1071.89	-3246.68	40°33'05.323"N	104°48'10.937"W	0.00	
10225.00†	90.344	268.815	7258.90	3424.95	1069.82	-3346.65	40°33'05.302"N	104°48'12.232"W	0.00	
10325.00†	90.344	268.815	7258.30	3524.40	1067.75	-3446.63	40°33'05.282"N	104°48'13.527"W	0.00	
10425.00†	90.344	268.815	7257.70	3623.84	1065.69	-3546.61	40°33'05.261"N	104°48'14.822"W	0.00	
10525.00†	90.344	268.815	7257.10	3723.29	1063.62	-3646.58	40°33'05.241"N	104°48'16.117"W	0.00	
10625.00†	90.344	268.815	7256.50	3822.74	1061.55	-3746.56	40°33'05.220"N	104°48'17.413"W	0.00	
10725.00†	90.344	268.815	7255.90	3922.18	1059.48	-3846.54	40°33'05.199"N	104°48'18.708"W	0.00	
10825.00†	90.344	268.815	7255.30	4021.63	1057.42	-3946.51	40°33'05.179"N	104°48'20.003"W	0.00	
10925.00†	90.344	268.815	7254.69	4121.08	1055.35	-4046.49	40°33'05.158"N	104°48'21.298"W	0.00	
11025.00†	90.344	268.815	7254.09	4220.52	1053.28	-4146.47	40°33'05.138"N	104°48'22.593"W	0.00	
11125.00†	90.344	268.815	7253.49	4319.97	1051.22	-4246.44	40°33'05.117"N	104°48'23.888"W	0.00	
11225.00†	90.344	268.815	7252.89	4419.41	1049.15	-4346.42	40°33'05.096"N	104°48'25.183"W	0.00	
11325.00†	90.344	268.815	7252.29	4518.86	1047.08	-4446.40	40°33'05.076"N	104°48'26.479"W	0.00	

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REFERENCE WELLPATH IDENTIFICATION

Operator	BAYSWATER E & P LLC	Slot	SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL,SEC.28)
Area	COLORADO	Well	THORNTON C-29-30HN
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	THORNTON C-29-30HN PWB
Facility	SEC.28-T07N-R66W		

WELLPATH DATA (184 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11425.00†	90.344	268.815	7251.69	4618.31	1045.01	-4546.38	40°33'05.055"N	104°48'27.774"W	0.00	
11525.00†	90.344	268.815	7251.09	4717.75	1042.95	-4646.35	40°33'05.035"N	104°48'29.069"W	0.00	
11625.00†	90.344	268.815	7250.49	4817.20	1040.88	-4746.33	40°33'05.014"N	104°48'30.364"W	0.00	
11725.00†	90.344	268.815	7249.89	4916.65	1038.81	-4846.31	40°33'04.993"N	104°48'31.659"W	0.00	
11825.00†	90.344	268.815	7249.29	5016.09	1036.74	-4946.28	40°33'04.973"N	104°48'32.954"W	0.00	
11925.00†	90.344	268.815	7248.68	5115.54	1034.68	-5046.26	40°33'04.952"N	104°48'34.249"W	0.00	
12025.00†	90.344	268.815	7248.08	5214.98	1032.61	-5146.24	40°33'04.931"N	104°48'35.545"W	0.00	
12125.00†	90.344	268.815	7247.48	5314.43	1030.54	-5246.21	40°33'04.911"N	104°48'36.840"W	0.00	
12225.00†	90.344	268.815	7246.88	5413.88	1028.47	-5346.19	40°33'04.890"N	104°48'38.135"W	0.00	
12325.00†	90.344	268.815	7246.28	5513.32	1026.41	-5446.17	40°33'04.870"N	104°48'39.430"W	0.00	
12425.00†	90.344	268.815	7245.68	5612.77	1024.34	-5546.14	40°33'04.849"N	104°48'40.725"W	0.00	
12525.00†	90.344	268.815	7245.08	5712.22	1022.27	-5646.12	40°33'04.828"N	104°48'42.020"W	0.00	
12625.00†	90.344	268.815	7244.48	5811.66	1020.20	-5746.10	40°33'04.808"N	104°48'43.315"W	0.00	
12725.00†	90.344	268.815	7243.88	5911.11	1018.14	-5846.07	40°33'04.787"N	104°48'44.610"W	0.00	
12825.00†	90.344	268.815	7243.27	6010.56	1016.07	-5946.05	40°33'04.766"N	104°48'45.906"W	0.00	
12925.00†	90.344	268.815	7242.67	6110.00	1014.00	-6046.03	40°33'04.746"N	104°48'47.201"W	0.00	
13025.00†	90.344	268.815	7242.07	6209.45	1011.93	-6146.00	40°33'04.725"N	104°48'48.496"W	0.00	
13125.00†	90.344	268.815	7241.47	6308.89	1009.87	-6245.98	40°33'04.704"N	104°48'49.791"W	0.00	
13225.00†	90.344	268.815	7240.87	6408.34	1007.80	-6345.96	40°33'04.684"N	104°48'51.086"W	0.00	
13325.00†	90.344	268.815	7240.27	6507.79	1005.73	-6445.93	40°33'04.663"N	104°48'52.381"W	0.00	
13425.00†	90.344	268.815	7239.67	6607.23	1003.66	-6545.91	40°33'04.642"N	104°48'53.676"W	0.00	
13525.00†	90.344	268.815	7239.07	6706.68	1001.60	-6645.89	40°33'04.621"N	104°48'54.972"W	0.00	
13625.00†	90.344	268.815	7238.47	6806.13	999.53	-6745.87	40°33'04.601"N	104°48'56.267"W	0.00	
13725.00†	90.344	268.815	7237.87	6905.57	997.46	-6845.84	40°33'04.580"N	104°48'57.562"W	0.00	
13825.00†	90.344	268.815	7237.26	7005.02	995.39	-6945.82	40°33'04.559"N	104°48'58.857"W	0.00	
13925.00†	90.344	268.815	7236.66	7104.47	993.33	-7045.80	40°33'04.539"N	104°49'00.152"W	0.00	
14025.00†	90.344	268.815	7236.06	7203.91	991.26	-7145.77	40°33'04.518"N	104°49'01.447"W	0.00	
14125.00†	90.344	268.815	7235.46	7303.36	989.19	-7245.75	40°33'04.497"N	104°49'02.742"W	0.00	
14225.00†	90.344	268.815	7234.86	7402.80	987.12	-7345.73	40°33'04.477"N	104°49'04.037"W	0.00	
14325.00†	90.344	268.815	7234.26	7502.25	985.06	-7445.70	40°33'04.456"N	104°49'05.333"W	0.00	

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REFERENCE WELLPATH IDENTIFICATION

Operator	BAYSWATER E & P LLC	Slot	SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL,SEC.28)
Area	COLORADO	Well	THORNTON C-29-30HN
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	THORNTON C-29-30HN PWB
Facility	SEC.28-T07N-R66W		

WELLPATH DATA (184 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14425.00†	90.344	268.815	7233.66	7601.70	982.99	-7545.68	40°33'04.435"N	104°49'06.628"W	0.00	
14525.00†	90.344	268.815	7233.06	7701.14	980.92	-7645.66	40°33'04.414"N	104°49'07.923"W	0.00	
14625.00†	90.344	268.815	7232.46	7800.59	978.85	-7745.63	40°33'04.394"N	104°49'09.218"W	0.00	
14725.00†	90.344	268.815	7231.86	7900.04	976.79	-7845.61	40°33'04.373"N	104°49'10.513"W	0.00	
14825.00†	90.344	268.815	7231.25	7999.48	974.72	-7945.59	40°33'04.352"N	104°49'11.808"W	0.00	
14925.00†	90.344	268.815	7230.65	8098.93	972.65	-8045.56	40°33'04.331"N	104°49'13.103"W	0.00	
15025.00†	90.344	268.815	7230.05	8198.37	970.58	-8145.54	40°33'04.311"N	104°49'14.399"W	0.00	
15125.00†	90.344	268.815	7229.45	8297.82	968.52	-8245.52	40°33'04.290"N	104°49'15.694"W	0.00	
15225.00†	90.344	268.815	7228.85	8397.27	966.45	-8345.49	40°33'04.269"N	104°49'16.989"W	0.00	
15325.00†	90.344	268.815	7228.25	8496.71	964.38	-8445.47	40°33'04.248"N	104°49'18.284"W	0.00	
15425.00†	90.344	268.815	7227.65	8596.16	962.31	-8545.45	40°33'04.228"N	104°49'19.579"W	0.00	
15525.00†	90.344	268.815	7227.05	8695.61	960.25	-8645.42	40°33'04.207"N	104°49'20.874"W	0.00	
15625.00†	90.344	268.815	7226.45	8795.05	958.18	-8745.40	40°33'04.186"N	104°49'22.169"W	0.00	
15725.00†	90.344	268.815	7225.85	8894.50	956.11	-8845.38	40°33'04.165"N	104°49'23.464"W	0.00	
15825.00†	90.344	268.815	7225.24	8993.95	954.04	-8945.36	40°33'04.144"N	104°49'24.760"W	0.00	
15925.00†	90.344	268.815	7224.64	9093.39	951.98	-9045.33	40°33'04.124"N	104°49'26.055"W	0.00	
16025.00†	90.344	268.815	7224.04	9192.84	949.91	-9145.31	40°33'04.103"N	104°49'27.350"W	0.00	
16125.00†	90.344	268.815	7223.44	9292.28	947.84	-9245.29	40°33'04.082"N	104°49'28.645"W	0.00	
16225.00†	90.344	268.815	7222.84	9391.73	945.77	-9345.26	40°33'04.061"N	104°49'29.940"W	0.00	
16325.00†	90.344	268.815	7222.24	9491.18	943.71	-9445.24	40°33'04.040"N	104°49'31.235"W	0.00	
16425.00†	90.344	268.815	7221.64	9590.62	941.64	-9545.22	40°33'04.020"N	104°49'32.530"W	0.00	
16525.00†	90.344	268.815	7221.04	9690.07	939.57	-9645.19	40°33'03.999"N	104°49'33.825"W	0.00	
16625.00†	90.344	268.815	7220.44	9789.52	937.50	-9745.17	40°33'03.978"N	104°49'35.121"W	0.00	
16725.00†	90.344	268.815	7219.84	9888.96	935.44	-9845.15	40°33'03.957"N	104°49'36.416"W	0.00	
16825.00†	90.344	268.815	7219.23	9988.41	933.37	-9945.12	40°33'03.936"N	104°49'37.711"W	0.00	
16925.00†	90.344	268.815	7218.63	10087.86	931.30	-10045.10	40°33'03.916"N	104°49'39.006"W	0.00	
17025.00†	90.344	268.815	7218.03	10187.30	929.23	-10145.08	40°33'03.895"N	104°49'40.301"W	0.00	
17125.00†	90.344	268.815	7217.43	10286.75	927.17	-10245.05	40°33'03.874"N	104°49'41.596"W	0.00	
17225.00†	90.344	268.815	7216.83	10386.19	925.10	-10345.03	40°33'03.853"N	104°49'42.891"W	0.00	
17325.00†	90.344	268.815	7216.23	10485.64	923.03	-10445.01	40°33'03.832"N	104°49'44.186"W	0.00	

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REFERENCE WELLPATH IDENTIFICATION

Operator	BAYSWATER E & P LLC	Slot	SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL,SEC.28)
Area	COLORADO	Well	THORNTON C-29-30HN
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	THORNTON C-29-30HN PWB
Facility	SEC.28-T07N-R66W		

WELLPATH DATA (184 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17425.00†	90.344	268.815	7215.63	10585.09	920.96	-10544.98	40°33'03.811"N	104°49'45.482"W	0.00	
17525.00†	90.344	268.815	7215.03	10684.53	918.90	-10644.96	40°33'03.790"N	104°49'46.777"W	0.00	
17625.00†	90.344	268.815	7214.43	10783.98	916.83	-10744.94	40°33'03.770"N	104°49'48.072"W	0.00	
17695.89	90.344	268.815	7214.00 ²	10854.48	915.36	-10815.81	40°33'03.755"N	104°49'48.990"W	0.00	End of Tangent

DIRECTIONAL DIFFICULTY INDEX

Directional Difficulty Index @ TD = 6.51				Reference: IADC/SPE 59196			
Values	Wellpath characterized as:			Values	Wellpath characterized as:		
< 6.0	Relatively short or simple profiles with low tortuosity			6.4-6.8	Longer with relatively tortuous well paths		
< 6.0-6.4	Shorter with high tortuosity or longer with lower tortuosity			> 6.8	Long tortuous profiles, high degree of difficulty		

HOLE & CASING SECTIONS - Ref Wellbore: THORNTON C-29-30HN PWB Ref Wellpath: THORNTON C-29-30HN PWP (REV-A.0)

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
13.5in Open Hole	25.00	1550.00	1525.00	25.00	1534.15	0.00	0.00	179.60	-41.00
9.625in Casing Surface	25.00	1550.00	1525.00	25.00	1534.15	0.00	0.00	179.60	-41.00
8in Open Hole	1550.00	17695.89	16145.89	1534.15	7214.00	179.60	-41.00	915.36	-10815.81

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THORNTON C-29-30HN PWP (REV-A.0)

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REFERENCE WELLPATH IDENTIFICATION

Operator	BAYSWATER E & P LLC	Slot	SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL,SEC.28)
Area	COLORADO	Well	THORNTON C-29-30HN
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	THORNTON C-29-30HN PWB
Facility	SEC.28-T07N-R66W		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
2) THORNTON C-29-30HN BHL PLAT (545'FNL & 470'FWL,SEC.30)	17695.89	7214.00	915.36	-10815.81	3186107.99	1444288.66	40°33'03.755"N	104°49'48.990"W	point
1) THORNTON C-29-30HN LP PLAT (545'FNL & 470'FEL,SEC.29)	7712.84	7274.00	1121.76	-835.08	3196086.45	1444574.80	40°33'05.818"N	104°47'39.696"W	point
SEC.28-T07N-R66W HDL (460)		7900.00	31.33	0.83	3196931.02	1443491.12	40°32'55.043"N	104°47'28.867"W	polygon
SEC.29-T07N-R66W HDL (460)		7900.00	31.33	0.83	3196931.02	1443491.12	40°32'55.043"N	104°47'28.867"W	polygon
SEC.30-T07N-R66W HDL (460)		7900.00	31.33	0.83	3196931.02	1443491.12	40°32'55.043"N	104°47'28.867"W	polygon
SEC.28-T07N-R66W		8000.00	31.33	0.83	3196931.02	1443491.12	40°32'55.043"N	104°47'28.867"W	polygon
SEC.29-T07N-R66W		8000.00	31.33	0.83	3196931.02	1443491.12	40°32'55.043"N	104°47'28.867"W	polygon
SEC.30-T07N-R66W		8000.00	31.33	0.83	3196931.02	1443491.12	40°32'55.043"N	104°47'28.867"W	polygon

SURVEY PROGRAM - Ref Wellbore: THORNTON C-29-30HN PWB Ref Wellpath: THORNTON C-29-30HN PWP (REV-A.0)

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	1550.00	BHI NaviTrak (Standard)		THORNTON C-29-30HN PWB
1550.00	17695.89	BHI AutoTrak Curve (Short)		THORNTON C-29-30HN PWB

Planned Wellpath Report

THORNTON C-29-30HN PWP (REV-A.0)

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REFERENCE WELLPATH IDENTIFICATION

Operator	BAYSWATER E & P LLC	Slot	SLOT#14 THORNTON C-29-30HN (1676'FNL & 405'FWL,SEC.28)
Area	COLORADO	Well	THORNTON C-29-30HN
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	THORNTON C-29-30HN PWB
Facility	SEC.28-T07N-R66W		

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
25.00	0.000	347.141	25.00	Tie On
300.00	0.000	347.141	300.00	End of Tangent
841.81	10.836	347.141	838.58	End of Build
6701.04	10.836	347.141	6593.34	End of Tangent
6809.40	0.000	268.815	6701.05	End of Drop
7712.84	90.344	268.815	7274.00	End of Build
17695.89	90.344	268.815	7214.00	End of Tangent