

EXTRACTION OIL & GAS

WELD COUNTY

Sec 20-T5N-R65W

GP-CODY FED 20E-15-5N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

13 July, 2018

WELL DETAILS: GP-CODY FED 20E-15-5N

+N/-S	+E/-W	Northing	Easting	4673.00	Latitude	Longitude	Slot
0.00	0.00	1385926.98	3227710.16	40° 23' 23.604 N	104° 40' 57.036 W		

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dieg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
3	665.83	11.32	245.28	662.16	-23.29	-50.60	2.00	245.28	-48.94	
4	5844.19	11.32	245.28	5739.84	-448.16	-973.66	0.00	0.00	-941.80	
5	6410.02	0.00	0.00	6302.00	-471.45	-1024.26	2.00	180.00	-990.74	
6	6440.02	0.00	0.00	6332.00	-471.45	-1024.26	0.00	0.00	-990.74	
7	7340.09	90.00	89.85	6905.00	-469.93	-451.26	10.00	89.85	-419.11	
8	14574.24	90.00	89.85	6905.00	-450.79	6782.86	0.00	0.00	6797.83	

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	Start Build 2.00
665.83	11.32	245.28	662.16	-23.29	-50.60	-48.94	55.70	Start 5178.36 hold at 665.83 MD
5844.19	11.32	245.28	5739.84	-448.16	-973.66	-941.80	1071.85	Start Drop -2.00
6410.02	0.00	0.00	6302.00	-471.45	-1024.26	-990.74	1127.55	Start 30.00 hold at 6410.02 MD
6440.02	0.00	0.00	6332.00	-471.45	-1024.26	-990.74	1127.55	Start DLS 10.00 TFO 89.85
7340.09	90.00	89.85	6905.00	-469.93	-451.26	-419.11	1700.55	Start 7234.15 hold at 7340.09 MD
14574.24	90.00	89.85	6905.00	-450.79	6782.86	6797.83	8934.70	TD at 14574.24

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	40° 23'	Latitude	Longitude	Shape
GP-CODY FED 20E-15-5N - LP 6905.00	-469.93	-451.26	1385452.91	3227263.25	40° 23' 18.960 N	104° 41' 2.868 W			Point
- plan hits target center									
GP-CODY FED 20E-15-5N - PBHL 6905.00	-450.79	6782.86	1385538.74	3234496.89	40° 23' 19.140 N	104° 39' 29.376 W			Point
- plan hits target center									

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3686.00	3749.63	PARKMAN
4425.00	4503.28	SUSSEX
4935.00	5023.39	SHANNON
6740.00	6894.07	SHARON SPRINGS
6775.00	6946.41	NIOBRARA
6895.00	7232.88	NIO B TARGET

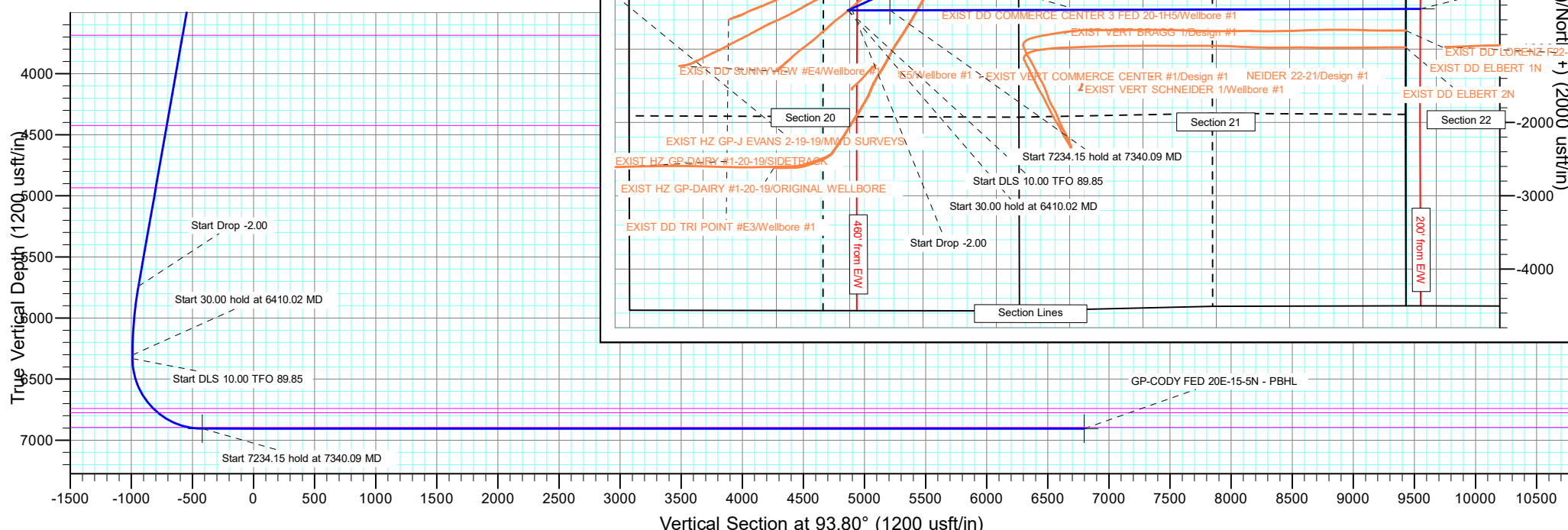
PROJECT DETAILS: WELD COUNTY

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SHL:
718' FNL, 1305' FEL
Sec 20-T5N-R65W

LP:
1189' FNL, 1759' FEL
Sec 20-T5N-R65W

BHL:
1182' FNL, 200' FWL
Sec 22-T5N-R65W



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well GP-CODY FED 20E-15-5N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 29' @ 4702.00usft
Project:	WELD COUNTY	MD Reference:	KB 29' @ 4702.00usft
Site:	Sec 20-T5N-R65W	North Reference:	True
Well:	GP-CODY FED 20E-15-5N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Project	WELD COUNTY		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 20-T5N-R65W			
Site Position:		Northing:	1,386,203.84 usft	Latitude:	40° 23' 26.340 N
From:	Lat/Long	Easting:	3,227,707.61 usft	Longitude:	104° 40' 57.036 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.53 °

Well	GP-CODY FED 20E-15-5N					
Well Position	+N/-S	-276.87 usft	Northing:	1,385,926.98 usft	Latitude:	40° 23' 23.604 N
	+E/-W	0.00 usft	Easting:	3,227,710.16 usft	Longitude:	104° 40' 57.036 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,673.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/18/2018	8.06	66.83	52,282.36992675

Design	PROPOSAL 1			
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	93.80

Plan Survey Tool Program	Date	7/13/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	14,574.13	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
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	
665.83	11.32	245.28	662.16	-23.29	-50.60	2.00	2.00	0.00	245.28	
5,844.19	11.32	245.28	5,739.84	-448.16	-973.66	0.00	0.00	0.00	0.00	
6,410.02	0.00	0.00	6,302.00	-471.45	-1,024.26	2.00	-2.00	0.00	180.00	
6,440.02	0.00	0.00	6,332.00	-471.45	-1,024.26	0.00	0.00	0.00	0.00	
7,340.09	90.00	89.85	6,905.00	-469.93	-451.26	10.00	10.00	9.98	89.85	GP-CODY FED 20E-1
14,574.24	90.00	89.85	6,905.00	-450.79	6,782.86	0.00	0.00	0.00	0.00	GP-CODY FED 20E-1

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well GP-CODY FED 20E-15-5N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 29' @ 4702.00usft
Project:	WELD COUNTY	MD Reference:	KB 29' @ 4702.00usft
Site:	Sec 20-T5N-R65W	North Reference:	True
Well:	GP-CODY FED 20E-15-5N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
Start Build 2.00									
200.00	2.00	245.28	199.98	-0.73	-1.59	-1.53	2.00	2.00	0.00
300.00	4.00	245.28	299.84	-2.92	-6.34	-6.13	2.00	2.00	0.00
400.00	6.00	245.28	399.45	-6.56	-14.26	-13.79	2.00	2.00	0.00
500.00	8.00	245.28	498.70	-11.66	-25.33	-24.50	2.00	2.00	0.00
600.00	10.00	245.28	597.47	-18.20	-39.54	-38.24	2.00	2.00	0.00
665.83	11.32	245.28	662.16	-23.29	-50.60	-48.94	2.00	2.00	0.00
Start 5178.36 hold at 665.83 MD									
700.00	11.32	245.28	695.66	-26.09	-56.69	-54.83	0.00	0.00	0.00
800.00	11.32	245.28	793.72	-34.30	-74.51	-72.07	0.00	0.00	0.00
900.00	11.32	245.28	891.78	-42.50	-92.34	-89.32	0.00	0.00	0.00
1,000.00	11.32	245.28	989.83	-50.71	-110.16	-106.56	0.00	0.00	0.00
1,100.00	11.32	245.28	1,087.89	-58.91	-127.99	-123.80	0.00	0.00	0.00
1,200.00	11.32	245.28	1,185.94	-67.12	-145.81	-141.04	0.00	0.00	0.00
1,300.00	11.32	245.28	1,284.00	-75.32	-163.64	-158.28	0.00	0.00	0.00
1,400.00	11.32	245.28	1,382.05	-83.53	-181.46	-175.53	0.00	0.00	0.00
1,500.00	11.32	245.28	1,480.11	-91.73	-199.29	-192.77	0.00	0.00	0.00
1,600.00	11.32	245.28	1,578.17	-99.93	-217.12	-210.01	0.00	0.00	0.00
1,700.00	11.32	245.28	1,676.22	-108.14	-234.94	-227.25	0.00	0.00	0.00
1,800.00	11.32	245.28	1,774.28	-116.34	-252.77	-244.50	0.00	0.00	0.00
1,900.00	11.32	245.28	1,872.33	-124.55	-270.59	-261.74	0.00	0.00	0.00
2,000.00	11.32	245.28	1,970.39	-132.75	-288.42	-278.98	0.00	0.00	0.00
2,100.00	11.32	245.28	2,068.44	-140.96	-306.24	-296.22	0.00	0.00	0.00
2,200.00	11.32	245.28	2,166.50	-149.16	-324.07	-313.46	0.00	0.00	0.00
2,300.00	11.32	245.28	2,264.56	-157.37	-341.89	-330.71	0.00	0.00	0.00
2,400.00	11.32	245.28	2,362.61	-165.57	-359.72	-347.95	0.00	0.00	0.00
2,500.00	11.32	245.28	2,460.67	-173.78	-377.55	-365.19	0.00	0.00	0.00
2,600.00	11.32	245.28	2,558.72	-181.98	-395.37	-382.43	0.00	0.00	0.00
2,700.00	11.32	245.28	2,656.78	-190.19	-413.20	-399.67	0.00	0.00	0.00
2,800.00	11.32	245.28	2,754.84	-198.39	-431.02	-416.92	0.00	0.00	0.00
2,900.00	11.32	245.28	2,852.89	-206.60	-448.85	-434.16	0.00	0.00	0.00
3,000.00	11.32	245.28	2,950.95	-214.80	-466.67	-451.40	0.00	0.00	0.00
3,100.00	11.32	245.28	3,049.00	-223.01	-484.50	-468.64	0.00	0.00	0.00
3,200.00	11.32	245.28	3,147.06	-231.21	-502.32	-485.89	0.00	0.00	0.00
3,300.00	11.32	245.28	3,245.11	-239.42	-520.15	-503.13	0.00	0.00	0.00
3,400.00	11.32	245.28	3,343.17	-247.62	-537.97	-520.37	0.00	0.00	0.00
3,500.00	11.32	245.28	3,441.23	-255.83	-555.80	-537.61	0.00	0.00	0.00
3,600.00	11.32	245.28	3,539.28	-264.03	-573.63	-554.85	0.00	0.00	0.00
3,700.00	11.32	245.28	3,637.34	-272.24	-591.45	-572.10	0.00	0.00	0.00
3,749.63	11.32	245.28	3,686.00	-276.31	-600.30	-580.65	0.00	0.00	0.00
PARKMAN									
3,800.00	11.32	245.28	3,735.39	-280.44	-609.28	-589.34	0.00	0.00	0.00
3,900.00	11.32	245.28	3,833.45	-288.64	-627.10	-606.58	0.00	0.00	0.00
4,000.00	11.32	245.28	3,931.50	-296.85	-644.93	-623.82	0.00	0.00	0.00
4,100.00	11.32	245.28	4,029.56	-305.05	-662.75	-641.07	0.00	0.00	0.00
4,200.00	11.32	245.28	4,127.62	-313.26	-680.58	-658.31	0.00	0.00	0.00
4,300.00	11.32	245.28	4,225.67	-321.46	-698.40	-675.55	0.00	0.00	0.00
4,400.00	11.32	245.28	4,323.73	-329.67	-716.23	-692.79	0.00	0.00	0.00
4,500.00	11.32	245.28	4,421.78	-337.87	-734.06	-710.03	0.00	0.00	0.00
4,503.28	11.32	245.28	4,425.00	-338.14	-734.64	-710.60	0.00	0.00	0.00
SUSSEX									

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well GP-CODY FED 20E-15-5N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 29' @ 4702.00usft
Project:	WELD COUNTY	MD Reference:	KB 29' @ 4702.00usft
Site:	Sec 20-T5N-R65W	North Reference:	True
Well:	GP-CODY FED 20E-15-5N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,600.00	11.32	245.28	4,519.84	-346.08	-751.88	-727.28	0.00	0.00	0.00
4,700.00	11.32	245.28	4,617.89	-354.28	-769.71	-744.52	0.00	0.00	0.00
4,800.00	11.32	245.28	4,715.95	-362.49	-787.53	-761.76	0.00	0.00	0.00
4,900.00	11.32	245.28	4,814.01	-370.69	-805.36	-779.00	0.00	0.00	0.00
5,000.00	11.32	245.28	4,912.06	-378.90	-823.18	-796.24	0.00	0.00	0.00
5,023.39	11.32	245.28	4,935.00	-380.82	-827.35	-800.28	0.00	0.00	0.00
SHANNON									
5,100.00	11.32	245.28	5,010.12	-387.10	-841.01	-813.49	0.00	0.00	0.00
5,200.00	11.32	245.28	5,108.17	-395.31	-858.83	-830.73	0.00	0.00	0.00
5,300.00	11.32	245.28	5,206.23	-403.51	-876.66	-847.97	0.00	0.00	0.00
5,400.00	11.32	245.28	5,304.28	-411.72	-894.48	-865.21	0.00	0.00	0.00
5,500.00	11.32	245.28	5,402.34	-419.92	-912.31	-882.46	0.00	0.00	0.00
5,600.00	11.32	245.28	5,500.40	-428.13	-930.14	-899.70	0.00	0.00	0.00
5,700.00	11.32	245.28	5,598.45	-436.33	-947.96	-916.94	0.00	0.00	0.00
5,800.00	11.32	245.28	5,696.51	-444.54	-965.79	-934.18	0.00	0.00	0.00
5,844.19	11.32	245.28	5,739.84	-448.16	-973.66	-941.80	0.00	0.00	0.00
Start Drop -2.00									
5,900.00	10.20	245.28	5,794.67	-452.52	-983.13	-950.96	2.00	-2.00	0.00
6,000.00	8.20	245.28	5,893.38	-459.20	-997.65	-965.00	2.00	-2.00	0.00
6,100.00	6.20	245.28	5,992.58	-464.44	-1,009.04	-976.02	2.00	-2.00	0.00
6,200.00	4.20	245.28	6,092.17	-468.23	-1,017.27	-983.98	2.00	-2.00	0.00
6,300.00	2.20	245.28	6,192.00	-470.57	-1,022.34	-988.89	2.00	-2.00	0.00
6,400.00	0.20	245.28	6,291.98	-471.44	-1,024.24	-990.73	2.00	-2.00	0.00
6,410.02	0.00	0.00	6,302.00	-471.45	-1,024.26	-990.74	2.00	-2.00	0.00
Start 30.00 hold at 6410.02 MD									
6,440.02	0.00	0.00	6,332.00	-471.45	-1,024.26	-990.74	0.00	0.00	0.00
Start DLS 10.00 TFO 89.85									
6,450.00	1.00	89.85	6,341.98	-471.45	-1,024.17	-990.66	10.00	10.00	0.00
6,500.00	6.00	89.85	6,391.87	-471.44	-1,021.12	-987.61	10.00	10.00	0.00
6,550.00	11.00	89.85	6,441.30	-471.42	-1,013.74	-980.25	10.00	10.00	0.00
6,600.00	16.00	89.85	6,489.91	-471.39	-1,002.07	-968.61	10.00	10.00	0.00
6,650.00	21.00	89.85	6,537.31	-471.35	-986.22	-952.79	10.00	10.00	0.00
6,700.00	26.00	89.85	6,583.15	-471.30	-966.29	-932.91	10.00	10.00	0.00
6,750.00	31.00	89.85	6,627.08	-471.23	-942.44	-909.12	10.00	10.00	0.00
6,800.00	36.00	89.85	6,668.76	-471.16	-914.86	-881.60	10.00	10.00	0.00
6,850.00	40.99	89.85	6,707.88	-471.08	-883.74	-850.56	10.00	10.00	0.00
6,894.07	45.40	89.85	6,740.00	-471.00	-853.59	-820.47	10.00	10.00	0.00
SHARON SPRINGS									
6,900.00	45.99	89.85	6,744.14	-470.99	-849.34	-816.24	10.00	10.00	0.00
6,946.41	50.64	89.85	6,775.00	-470.89	-814.69	-781.67	10.00	10.00	0.00
NIOBRARA									
6,950.00	50.99	89.85	6,777.27	-470.89	-811.91	-778.90	10.00	10.00	0.00
7,000.00	55.99	89.85	6,807.00	-470.78	-771.73	-738.81	10.00	10.00	0.00
7,050.00	60.99	89.85	6,833.12	-470.67	-729.12	-696.30	10.00	10.00	0.00
7,100.00	65.99	89.85	6,855.43	-470.55	-684.39	-651.68	10.00	10.00	0.00
7,150.00	70.99	89.85	6,873.76	-470.42	-637.88	-605.28	10.00	10.00	0.00
7,200.00	75.99	89.85	6,887.96	-470.30	-589.96	-557.47	10.00	10.00	0.00
7,232.88	79.28	89.85	6,895.00	-470.21	-557.84	-525.44	10.00	10.00	0.00
NIO B TARGET									
7,250.00	80.99	89.85	6,897.93	-470.17	-540.98	-508.61	10.00	10.00	0.00
7,300.00	85.99	89.85	6,903.60	-470.04	-491.32	-459.07	10.00	10.00	0.00
7,340.09	90.00	89.85	6,905.00	-469.93	-451.26	-419.11	10.00	10.00	0.00
Start 7234.15 hold at 7340.09 MD									

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well GP-CODY FED 20E-15-5N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 29' @ 4702.00usft
Project:	WELD COUNTY	MD Reference:	KB 29' @ 4702.00usft
Site:	Sec 20-T5N-R65W	North Reference:	True
Well:	GP-CODY FED 20E-15-5N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
7,400.00	90.00	89.85	6,905.00	-469.77	-391.35	-359.34	0.00	0.00	0.00	
7,500.00	90.00	89.85	6,905.00	-469.51	-291.35	-259.58	0.00	0.00	0.00	
7,600.00	90.00	89.85	6,905.00	-469.24	-191.35	-159.81	0.00	0.00	0.00	
7,700.00	90.00	89.85	6,905.00	-468.97	-91.35	-60.05	0.00	0.00	0.00	
7,800.00	90.00	89.85	6,905.00	-468.71	8.65	39.71	0.00	0.00	0.00	
7,900.00	90.00	89.85	6,905.00	-468.44	108.65	139.47	0.00	0.00	0.00	
8,000.00	90.00	89.85	6,905.00	-468.18	208.65	239.23	0.00	0.00	0.00	
8,100.00	90.00	89.85	6,905.00	-467.91	308.65	339.00	0.00	0.00	0.00	
8,200.00	90.00	89.85	6,905.00	-467.65	408.65	438.76	0.00	0.00	0.00	
8,300.00	90.00	89.85	6,905.00	-467.38	508.65	538.52	0.00	0.00	0.00	
8,400.00	90.00	89.85	6,905.00	-467.12	608.64	638.28	0.00	0.00	0.00	
8,500.00	90.00	89.85	6,905.00	-466.85	708.64	738.04	0.00	0.00	0.00	
8,600.00	90.00	89.85	6,905.00	-466.59	808.64	837.81	0.00	0.00	0.00	
8,700.00	90.00	89.85	6,905.00	-466.32	908.64	937.57	0.00	0.00	0.00	
8,800.00	90.00	89.85	6,905.00	-466.06	1,008.64	1,037.33	0.00	0.00	0.00	
8,900.00	90.00	89.85	6,905.00	-465.79	1,108.64	1,137.09	0.00	0.00	0.00	
9,000.00	90.00	89.85	6,905.00	-465.53	1,208.64	1,236.85	0.00	0.00	0.00	
9,100.00	90.00	89.85	6,905.00	-465.26	1,308.64	1,336.61	0.00	0.00	0.00	
9,200.00	90.00	89.85	6,905.00	-464.99	1,408.64	1,436.38	0.00	0.00	0.00	
9,300.00	90.00	89.85	6,905.00	-464.73	1,508.64	1,536.14	0.00	0.00	0.00	
9,400.00	90.00	89.85	6,905.00	-464.46	1,608.64	1,635.90	0.00	0.00	0.00	
9,500.00	90.00	89.85	6,905.00	-464.20	1,708.64	1,735.66	0.00	0.00	0.00	
9,600.00	90.00	89.85	6,905.00	-463.93	1,808.64	1,835.42	0.00	0.00	0.00	
9,700.00	90.00	89.85	6,905.00	-463.67	1,908.64	1,935.19	0.00	0.00	0.00	
9,800.00	90.00	89.85	6,905.00	-463.40	2,008.64	2,034.95	0.00	0.00	0.00	
9,900.00	90.00	89.85	6,905.00	-463.14	2,108.64	2,134.71	0.00	0.00	0.00	
10,000.00	90.00	89.85	6,905.00	-462.87	2,208.64	2,234.47	0.00	0.00	0.00	
10,100.00	90.00	89.85	6,905.00	-462.61	2,308.64	2,334.23	0.00	0.00	0.00	
10,200.00	90.00	89.85	6,905.00	-462.34	2,408.64	2,434.00	0.00	0.00	0.00	
10,300.00	90.00	89.85	6,905.00	-462.08	2,508.64	2,533.76	0.00	0.00	0.00	
10,400.00	90.00	89.85	6,905.00	-461.81	2,608.64	2,633.52	0.00	0.00	0.00	
10,500.00	90.00	89.85	6,905.00	-461.54	2,708.64	2,733.28	0.00	0.00	0.00	
10,600.00	90.00	89.85	6,905.00	-461.28	2,808.64	2,833.04	0.00	0.00	0.00	
10,700.00	90.00	89.85	6,905.00	-461.01	2,908.64	2,932.81	0.00	0.00	0.00	
10,800.00	90.00	89.85	6,905.00	-460.75	3,008.64	3,032.57	0.00	0.00	0.00	
10,900.00	90.00	89.85	6,905.00	-460.48	3,108.64	3,132.33	0.00	0.00	0.00	
11,000.00	90.00	89.85	6,905.00	-460.22	3,208.64	3,232.09	0.00	0.00	0.00	
11,100.00	90.00	89.85	6,905.00	-459.95	3,308.64	3,331.85	0.00	0.00	0.00	
11,200.00	90.00	89.85	6,905.00	-459.69	3,408.64	3,431.62	0.00	0.00	0.00	
11,300.00	90.00	89.85	6,905.00	-459.42	3,508.63	3,531.38	0.00	0.00	0.00	
11,400.00	90.00	89.85	6,905.00	-459.16	3,608.63	3,631.14	0.00	0.00	0.00	
11,500.00	90.00	89.85	6,905.00	-458.89	3,708.63	3,730.90	0.00	0.00	0.00	
11,600.00	90.00	89.85	6,905.00	-458.63	3,808.63	3,830.66	0.00	0.00	0.00	
11,700.00	90.00	89.85	6,905.00	-458.36	3,908.63	3,930.43	0.00	0.00	0.00	
11,800.00	90.00	89.85	6,905.01	-458.10	4,008.63	4,030.19	0.00	0.00	0.00	
11,900.00	90.00	89.85	6,905.01	-457.83	4,108.63	4,129.95	0.00	0.00	0.00	
12,000.00	90.00	89.85	6,905.01	-457.56	4,208.63	4,229.71	0.00	0.00	0.00	
12,100.00	90.00	89.85	6,905.01	-457.30	4,308.63	4,329.47	0.00	0.00	0.00	
12,200.00	90.00	89.85	6,905.01	-457.03	4,408.63	4,429.24	0.00	0.00	0.00	
12,300.00	90.00	89.85	6,905.01	-456.77	4,508.63	4,529.00	0.00	0.00	0.00	
12,400.00	90.00	89.85	6,905.01	-456.50	4,608.63	4,628.76	0.00	0.00	0.00	
12,500.00	90.00	89.85	6,905.01	-456.24	4,708.63	4,728.52	0.00	0.00	0.00	
12,600.00	90.00	89.85	6,905.01	-455.97	4,808.63	4,828.28	0.00	0.00	0.00	
12,700.00	90.00	89.85	6,905.01	-455.71	4,908.63	4,928.04	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well GP-CODY FED 20E-15-5N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 29' @ 4702.00usft
Project:	WELD COUNTY	MD Reference:	KB 29' @ 4702.00usft
Site:	Sec 20-T5N-R65W	North Reference:	True
Well:	GP-CODY FED 20E-15-5N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
12,800.00	90.00	89.85	6,905.01	-455.44	5,008.63	5,027.81	0.00	0.00	0.00	
12,900.00	90.00	89.85	6,905.01	-455.18	5,108.63	5,127.57	0.00	0.00	0.00	
13,000.00	90.00	89.85	6,905.01	-454.91	5,208.63	5,227.33	0.00	0.00	0.00	
13,100.00	90.00	89.85	6,905.01	-454.65	5,308.63	5,327.09	0.00	0.00	0.00	
13,200.00	90.00	89.85	6,905.01	-454.38	5,408.63	5,426.85	0.00	0.00	0.00	
13,300.00	90.00	89.85	6,905.01	-454.12	5,508.63	5,526.62	0.00	0.00	0.00	
13,400.00	90.00	89.85	6,905.01	-453.85	5,608.63	5,626.38	0.00	0.00	0.00	
13,500.00	90.00	89.85	6,905.01	-453.58	5,708.63	5,726.14	0.00	0.00	0.00	
13,600.00	90.00	89.85	6,905.01	-453.32	5,808.63	5,825.90	0.00	0.00	0.00	
13,700.00	90.00	89.85	6,905.01	-453.05	5,908.63	5,925.66	0.00	0.00	0.00	
13,800.00	90.00	89.85	6,905.01	-452.79	6,008.63	6,025.43	0.00	0.00	0.00	
13,900.00	90.00	89.85	6,905.01	-452.52	6,108.63	6,125.19	0.00	0.00	0.00	
14,000.00	90.00	89.85	6,905.01	-452.26	6,208.63	6,224.95	0.00	0.00	0.00	
14,100.00	90.00	89.85	6,905.01	-451.99	6,308.62	6,324.71	0.00	0.00	0.00	
14,200.00	90.00	89.85	6,905.01	-451.73	6,408.62	6,424.47	0.00	0.00	0.00	
14,300.00	90.00	89.85	6,905.01	-451.46	6,508.62	6,524.24	0.00	0.00	0.00	
14,400.00	90.00	89.85	6,905.01	-451.20	6,608.62	6,624.00	0.00	0.00	0.00	
14,500.00	90.00	89.85	6,905.01	-450.93	6,708.62	6,723.76	0.00	0.00	0.00	
14,574.24	90.00	89.85	6,905.00	-450.79	6,782.86	6,797.83	0.00	0.00	0.00	
TD at 14574.24										

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										
GP-CODY FED 20E-15- - plan hits target center - Point	0.00	0.00	6,905.00	-469.93	-451.26	1,385,452.91	3,227,263.25	40° 23' 18.960 N	104° 41' 2.868 W	
GP-CODY FED 20E-15- - plan hits target center - Point	0.00	0.00	6,905.00	-450.79	6,782.86	1,385,538.74	3,234,496.89	40° 23' 19.140 N	104° 39' 29.376 W	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,749.63	3,686.00	PARKMAN				
4,503.28	4,425.00	SUSSEX				
5,023.39	4,935.00	SHANNON				
6,894.07	6,740.00	SHARON SPRINGS				
6,946.41	6,775.00	NIOBRARA				
7,232.88	6,895.00	NIO B TARGET				

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well GP-CODY FED 20E-15-5N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 29' @ 4702.00usft
Project:	WELD COUNTY	MD Reference:	KB 29' @ 4702.00usft
Site:	Sec 20-T5N-R65W	North Reference:	True
Well:	GP-CODY FED 20E-15-5N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.00	100.00	0.00	0.00	Start Build 2.00
665.83	662.16	-23.29	-50.60	Start 5178.36 hold at 665.83 MD
5,844.19	5,739.84	-448.16	-973.66	Start Drop -2.00
6,410.02	6,302.00	-471.45	-1,024.26	Start 30.00 hold at 6410.02 MD
6,440.02	6,332.00	-471.45	-1,024.26	Start DLS 10.00 TFO 89.85
7,340.09	6,905.00	-469.93	-451.26	Start 7234.15 hold at 7340.09 MD
14,574.24	6,905.00	-450.79	6,782.86	TD at 14574.24