

EXTRACTION OIL & GAS

WELD COUNTY

Sec 23-T7N-R67W

SCHLOTTHAUER 23E-20-3N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

15 May, 2018



Project: WELD COUNTY
Site: Sec 23-T7N-R67W
Well: SCHLOTTHAUER 23E-20-3N
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL 1



Azimuths to True North
Magnetic North: 8.18°
Magnetic Field
Strength: 52356.4nT
Dip Angle: 66.94°
Date: 5/14/2018
Model: IGRF2015

WELL DETAILS: SCHLOTTHAUER 23E-20-3N

+N/-S	+E/-W	Northing	Easting	4960.00	Latitude	Longitude	Slot
0.00	0.00	1445066.74	3176334.90	40° 33' 12.153 N	104° 51' 55.523 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	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	2814.40	50.29	341.52	2503.79	981.05	-327.89	2.00	341.52	112.92	
4	5677.69	50.29	341.52	4333.21	3070.10	-1026.10	0.00	0.00	353.38	
5	8192.09	0.00	0.00	6537.00	4051.15	-1353.99	2.00	180.00	466.30	
6	8222.09	0.00	0.00	6567.00	4051.15	-1353.99	0.00	0.00	466.30	
7	9122.16	90.00	89.82	7140.00	4052.98	-780.99	10.00	89.82	987.44	
8	18761.39	90.00	89.82	7140.00	4083.34	8858.19	0.00	0.00	9754.03	

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	Start Build 2.00
2814.40	50.29	341.52	2503.79	981.05	-327.89	112.92	1034.40	Start 2863.29 hold at 2814.40 MD
5677.69	50.29	341.52	4333.21	3070.10	-1026.10	353.38	3237.03	Start Drop -2.00
8192.09	0.00	0.00	6537.00	4051.15	-1353.99	466.30	4271.43	Start 30.00 hold at 8192.09 MD
8222.09	0.00	0.00	6567.00	4051.15	-1353.99	466.30	4271.43	Start DLS 10.00 TFO 89.82
9122.16	90.00	89.82	7140.00	4052.98	-780.99	987.44	4844.43	Start 9639.23 hold at 9122.16 MD
18761.39	90.00	89.82	7140.00	4083.34	8858.19	9754.03	14483.66	TD at 18761.39

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SCHLOTTHAUER 23E-3N - LP	7140.00	4052.98	-780.99	1449114.02	3175524.93	40° 33' 52.204 N	104° 52' 5.642 W	Point
- plan hits target center								
SCHLOTTHAUER 23E-3N - PBHL	40.00	4083.34	8858.19	1449213.36	3185163.64	40° 33' 52.488 N	104° 50' 0.744 W	Point
- plan hits target center								

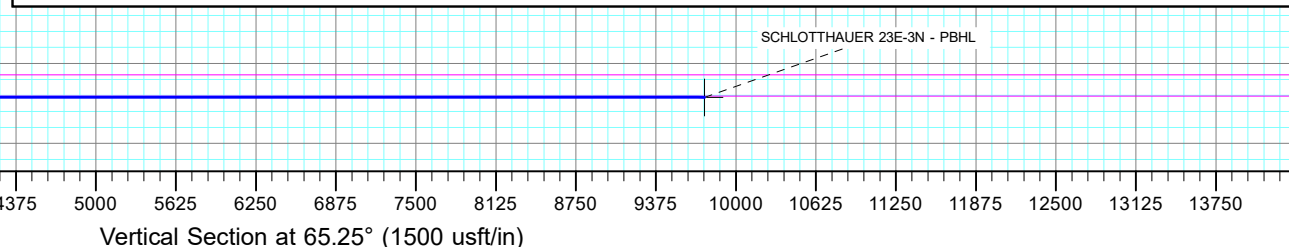
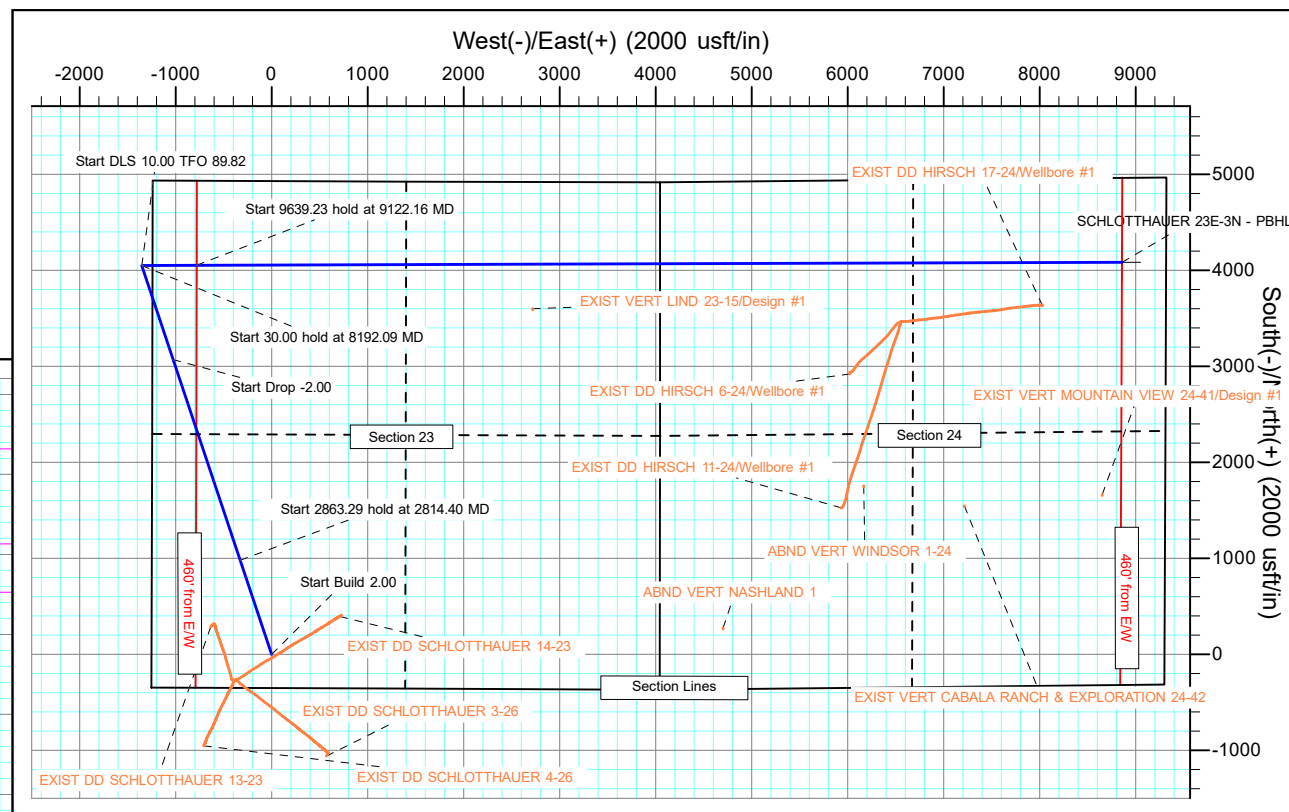
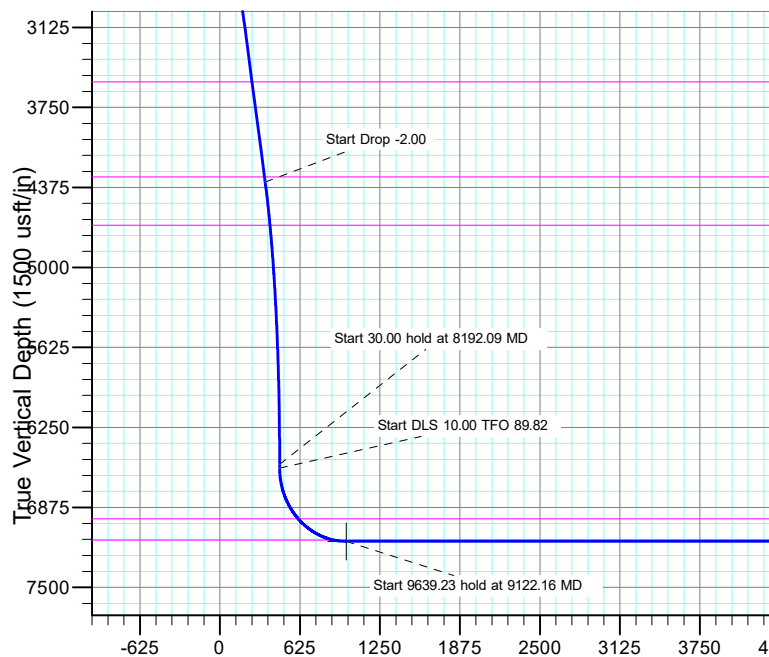
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3550.00	4451.86	PARKMAN
4292.00	5613.18	SUSSEX
4670.00	6158.58	SHANNON
6963.00	8659.30	NIOBRARA
7130.00	9014.95	NIO B

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:
352' FSL, 1252' FWL
Sec 23-T7N-R67W
LP:
880' FNL, 460' FWL
Sec 23-T7N-R67W
BHL:
880' FNL, 460' FEL
Sec 24-T7N-R67W



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well SCHLOTTHAUER 23E-20-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4985.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4985.00usft
Site:	Sec 23-T7N-R67W	North Reference:	True
Well:	SCHLOTTHAUER 23E-20-3N	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 23-T7N-R67W			
Site Position:		Northing:	1,444,710.64 usft	Latitude:	40° 33' 8.723 N
From:	Lat/Long	Easting:	3,175,085.00 usft	Longitude:	104° 52' 11.748 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.41 °

Well	SCHLOTTHAUER 23E-20-3N					
Well Position	+N/-S	347.21 usft	Northing:	1,445,066.74 usft	Latitude:	40° 33' 12.153 N
	+E/-W	1,252.41 usft	Easting:	3,176,334.91 usft	Longitude:	104° 51' 55.523 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,960.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/14/2018	8.18	66.94	52,356.43619663

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	65.25

Plan Survey Tool Program	Date	5/15/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,761.28	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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,814.40	50.29	341.52	2,503.79	981.05	-327.89	2.00	2.00	0.00	341.52	
5,677.69	50.29	341.52	4,333.21	3,070.10	-1,026.10	0.00	0.00	0.00	0.00	
8,192.09	0.00	0.00	6,537.00	4,051.15	-1,353.99	2.00	-2.00	0.00	180.00	
8,222.09	0.00	0.00	6,567.00	4,051.15	-1,353.99	0.00	0.00	0.00	0.00	
9,122.16	90.00	89.82	7,140.00	4,052.98	-780.99	10.00	10.00	9.98	89.82	SCHLOTTHAUER 23
18,761.39	90.00	89.82	7,140.00	4,083.34	8,858.19	0.00	0.00	0.00	0.00	SCHLOTTHAUER 23

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well SCHLOTTHAUER 23E-20-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4985.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4985.00usft
Site:	Sec 23-T7N-R67W	North Reference:	True
Well:	SCHLOTTHAUER 23E-20-3N	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
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
Start Build 2.00									
400.00	2.00	341.52	399.98	1.66	-0.55	0.19	2.00	2.00	0.00
500.00	4.00	341.52	499.84	6.62	-2.21	0.76	2.00	2.00	0.00
600.00	6.00	341.52	599.45	14.88	-4.97	1.71	2.00	2.00	0.00
700.00	8.00	341.52	698.70	26.44	-8.84	3.04	2.00	2.00	0.00
800.00	10.00	341.52	797.47	41.28	-13.80	4.75	2.00	2.00	0.00
900.00	12.00	341.52	895.62	59.37	-19.84	6.83	2.00	2.00	0.00
1,000.00	14.00	341.52	993.06	80.71	-26.97	9.29	2.00	2.00	0.00
1,100.00	16.00	341.52	1,089.64	105.25	-35.18	12.12	2.00	2.00	0.00
1,200.00	18.00	341.52	1,185.27	132.98	-44.45	15.31	2.00	2.00	0.00
1,300.00	20.00	341.52	1,279.82	163.86	-54.77	18.86	2.00	2.00	0.00
1,400.00	22.00	341.52	1,373.17	197.85	-66.12	22.77	2.00	2.00	0.00
1,500.00	24.00	341.52	1,465.21	234.90	-78.51	27.04	2.00	2.00	0.00
1,600.00	26.00	341.52	1,555.84	274.98	-91.91	31.65	2.00	2.00	0.00
1,700.00	28.00	341.52	1,644.94	318.04	-106.30	36.61	2.00	2.00	0.00
1,800.00	30.00	341.52	1,732.39	364.02	-121.66	41.90	2.00	2.00	0.00
1,900.00	32.00	341.52	1,818.11	412.86	-137.99	47.52	2.00	2.00	0.00
2,000.00	34.00	341.52	1,901.97	464.51	-155.25	53.47	2.00	2.00	0.00
2,100.00	36.00	341.52	1,983.88	518.91	-173.43	59.73	2.00	2.00	0.00
2,200.00	38.00	341.52	2,063.74	575.99	-192.51	66.30	2.00	2.00	0.00
2,300.00	40.00	341.52	2,141.45	635.67	-212.46	73.17	2.00	2.00	0.00
2,400.00	42.00	341.52	2,216.92	697.89	-233.25	80.33	2.00	2.00	0.00
2,500.00	44.00	341.52	2,290.05	762.57	-254.87	87.77	2.00	2.00	0.00
2,600.00	46.00	341.52	2,360.76	829.63	-277.28	95.49	2.00	2.00	0.00
2,700.00	48.00	341.52	2,428.95	898.99	-300.46	103.48	2.00	2.00	0.00
2,800.00	50.00	341.52	2,494.55	970.57	-324.39	111.72	2.00	2.00	0.00
2,814.40	50.29	341.52	2,503.79	981.05	-327.89	112.92	2.00	2.00	0.00
Start 2863.29 hold at 2814.40 MD									
2,900.00	50.29	341.52	2,558.48	1,043.50	-348.76	120.11	0.00	0.00	0.00
3,000.00	50.29	341.52	2,622.37	1,116.46	-373.15	128.51	0.00	0.00	0.00
3,100.00	50.29	341.52	2,686.26	1,189.42	-397.53	136.91	0.00	0.00	0.00
3,200.00	50.29	341.52	2,750.15	1,262.38	-421.92	145.30	0.00	0.00	0.00
3,300.00	50.29	341.52	2,814.05	1,335.34	-446.30	153.70	0.00	0.00	0.00
3,400.00	50.29	341.52	2,877.94	1,408.30	-470.69	162.10	0.00	0.00	0.00
3,500.00	50.29	341.52	2,941.83	1,481.26	-495.07	170.50	0.00	0.00	0.00
3,600.00	50.29	341.52	3,005.72	1,554.22	-519.46	178.90	0.00	0.00	0.00
3,700.00	50.29	341.52	3,069.62	1,627.18	-543.84	187.29	0.00	0.00	0.00
3,800.00	50.29	341.52	3,133.51	1,700.14	-568.23	195.69	0.00	0.00	0.00
3,900.00	50.29	341.52	3,197.40	1,773.10	-592.61	204.09	0.00	0.00	0.00
4,000.00	50.29	341.52	3,261.29	1,846.06	-617.00	212.49	0.00	0.00	0.00
4,100.00	50.29	341.52	3,325.19	1,919.02	-641.38	220.89	0.00	0.00	0.00
4,200.00	50.29	341.52	3,389.08	1,991.98	-665.77	229.28	0.00	0.00	0.00
4,300.00	50.29	341.52	3,452.97	2,064.94	-690.15	237.68	0.00	0.00	0.00
4,400.00	50.29	341.52	3,516.86	2,137.90	-714.54	246.08	0.00	0.00	0.00
4,451.86	50.29	341.52	3,550.00	2,175.74	-727.18	250.44	0.00	0.00	0.00
PARKMAN									
4,500.00	50.29	341.52	3,580.76	2,210.86	-738.92	254.48	0.00	0.00	0.00
4,600.00	50.29	341.52	3,644.65	2,283.82	-763.31	262.88	0.00	0.00	0.00
4,700.00	50.29	341.52	3,708.54	2,356.78	-787.69	271.27	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well SCHLOTTHAUER 23E-20-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4985.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4985.00usft
Site:	Sec 23-T7N-R67W	North Reference:	True
Well:	SCHLOTTHAUER 23E-20-3N	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)	
4,800.00	50.29	341.52	3,772.44	2,429.74	-812.08	279.67	0.00	0.00	0.00	
4,900.00	50.29	341.52	3,836.33	2,502.70	-836.46	288.07	0.00	0.00	0.00	
5,000.00	50.29	341.52	3,900.22	2,575.66	-860.85	296.47	0.00	0.00	0.00	
5,100.00	50.29	341.52	3,964.11	2,648.62	-885.23	304.87	0.00	0.00	0.00	
5,200.00	50.29	341.52	4,028.01	2,721.58	-909.61	313.26	0.00	0.00	0.00	
5,300.00	50.29	341.52	4,091.90	2,794.54	-934.00	321.66	0.00	0.00	0.00	
5,400.00	50.29	341.52	4,155.79	2,867.49	-958.38	330.06	0.00	0.00	0.00	
5,500.00	50.29	341.52	4,219.68	2,940.45	-982.77	338.46	0.00	0.00	0.00	
5,600.00	50.29	341.52	4,283.58	3,013.41	-1,007.15	346.86	0.00	0.00	0.00	
5,613.18	50.29	341.52	4,292.00	3,023.03	-1,010.37	347.96	0.00	0.00	0.00	
SUSSEX										
5,677.69	50.29	341.52	4,333.21	3,070.10	-1,026.10	353.38	0.00	0.00	0.00	
Start Drop -2.00										
5,700.00	49.84	341.52	4,347.54	3,086.32	-1,031.52	355.25	2.00	-2.00	0.00	
5,800.00	47.84	341.52	4,413.35	3,157.72	-1,055.39	363.47	2.00	-2.00	0.00	
5,900.00	45.84	341.52	4,481.74	3,226.91	-1,078.51	371.43	2.00	-2.00	0.00	
6,000.00	43.84	341.52	4,552.65	3,293.78	-1,100.86	379.13	2.00	-2.00	0.00	
6,100.00	41.84	341.52	4,625.97	3,358.27	-1,122.41	386.55	2.00	-2.00	0.00	
6,158.58	40.67	341.52	4,670.00	3,394.90	-1,134.66	390.77	2.00	-2.00	0.00	
SHANNON										
6,200.00	39.84	341.52	4,701.61	3,420.29	-1,143.14	393.69	2.00	-2.00	0.00	
6,300.00	37.84	341.52	4,779.50	3,479.77	-1,163.02	400.53	2.00	-2.00	0.00	
6,400.00	35.84	341.52	4,859.52	3,536.64	-1,182.03	407.08	2.00	-2.00	0.00	
6,500.00	33.84	341.52	4,941.59	3,590.82	-1,200.14	413.32	2.00	-2.00	0.00	
6,600.00	31.84	341.52	5,025.60	3,642.25	-1,217.33	419.24	2.00	-2.00	0.00	
6,700.00	29.84	341.52	5,111.46	3,690.87	-1,233.58	424.83	2.00	-2.00	0.00	
6,800.00	27.84	341.52	5,199.05	3,736.62	-1,248.87	430.10	2.00	-2.00	0.00	
6,900.00	25.84	341.52	5,288.27	3,779.45	-1,263.18	435.03	2.00	-2.00	0.00	
7,000.00	23.84	341.52	5,379.01	3,819.29	-1,276.50	439.61	2.00	-2.00	0.00	
7,100.00	21.84	341.52	5,471.17	3,856.10	-1,288.80	443.85	2.00	-2.00	0.00	
7,200.00	19.84	341.52	5,564.62	3,889.85	-1,300.08	447.74	2.00	-2.00	0.00	
7,300.00	17.84	341.52	5,659.25	3,920.48	-1,310.32	451.26	2.00	-2.00	0.00	
7,400.00	15.84	341.52	5,754.96	3,947.95	-1,319.50	454.42	2.00	-2.00	0.00	
7,500.00	13.84	341.52	5,851.62	3,972.25	-1,327.62	457.22	2.00	-2.00	0.00	
7,600.00	11.84	341.52	5,949.11	3,993.32	-1,334.66	459.65	2.00	-2.00	0.00	
7,700.00	9.84	341.52	6,047.32	4,011.16	-1,340.63	461.70	2.00	-2.00	0.00	
7,800.00	7.84	341.52	6,146.13	4,025.74	-1,345.50	463.38	2.00	-2.00	0.00	
7,900.00	5.84	341.52	6,245.41	4,037.04	-1,349.27	464.68	2.00	-2.00	0.00	
8,000.00	3.84	341.52	6,345.05	4,045.04	-1,351.95	465.60	2.00	-2.00	0.00	
8,100.00	1.84	341.52	6,444.92	4,049.75	-1,353.52	466.14	2.00	-2.00	0.00	
8,192.09	0.00	0.00	6,537.00	4,051.15	-1,353.99	466.30	2.00	-2.00	0.00	
Start 30.00 hold at 8192.09 MD										
8,200.00	0.00	0.00	6,544.91	4,051.15	-1,353.99	466.30	0.00	0.00	0.00	
8,222.09	0.00	0.00	6,567.00	4,051.15	-1,353.99	466.30	0.00	0.00	0.00	
Start DLS 10.00 TFO 89.82										
8,250.00	2.79	89.82	6,594.89	4,051.15	-1,353.31	466.92	10.00	10.00	0.00	
8,300.00	7.79	89.82	6,644.67	4,051.17	-1,348.70	471.11	10.00	10.00	0.00	
8,350.00	12.79	89.82	6,693.85	4,051.20	-1,339.77	479.23	10.00	10.00	0.00	
8,400.00	17.79	89.82	6,742.06	4,051.24	-1,326.59	491.22	10.00	10.00	0.00	
8,450.00	22.79	89.82	6,788.94	4,051.29	-1,309.26	506.98	10.00	10.00	0.00	
8,500.00	27.79	89.82	6,834.14	4,051.36	-1,287.91	526.40	10.00	10.00	0.00	
8,550.00	32.79	89.82	6,877.30	4,051.44	-1,262.70	549.33	10.00	10.00	0.00	
8,600.00	37.79	89.82	6,918.10	4,051.53	-1,233.82	575.59	10.00	10.00	0.00	
8,650.00	42.79	89.82	6,956.23	4,051.64	-1,201.50	604.99	10.00	10.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well SCHLOTTHAUER 23E-20-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4985.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4985.00usft
Site:	Sec 23-T7N-R67W	North Reference:	True
Well:	SCHLOTTHAUER 23E-20-3N	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)
8,659.30	43.72	89.82	6,963.00	4,051.66	-1,195.13	610.78	10.00	10.00	0.00
NIOBRARA									
8,700.00	47.79	89.82	6,991.39	4,051.75	-1,165.98	637.29	10.00	10.00	0.00
8,750.00	52.79	89.82	7,023.33	4,051.87	-1,127.53	672.26	10.00	10.00	0.00
8,800.00	57.79	89.82	7,051.80	4,052.00	-1,086.45	709.63	10.00	10.00	0.00
8,850.00	62.79	89.82	7,076.57	4,052.14	-1,043.03	749.11	10.00	10.00	0.00
8,900.00	67.79	89.82	7,097.47	4,052.29	-997.63	790.41	10.00	10.00	0.00
8,950.00	72.79	89.82	7,114.33	4,052.44	-950.57	833.21	10.00	10.00	0.00
9,000.00	77.78	89.82	7,127.03	4,052.59	-902.23	877.18	10.00	10.00	0.00
9,014.95	79.28	89.82	7,130.00	4,052.64	-887.58	890.50	10.00	10.00	0.00
NIO B									
9,050.00	82.78	89.82	7,135.46	4,052.75	-852.96	921.98	10.00	10.00	0.00
9,100.00	87.78	89.82	7,139.57	4,052.91	-803.15	967.29	10.00	10.00	0.00
9,122.16	90.00	89.82	7,140.00	4,052.98	-780.99	987.44	10.00	10.00	0.00
Start 9639.23 hold at 9122.16 MD									
9,200.00	90.00	89.82	7,140.00	4,053.23	-703.15	1,058.23	0.00	0.00	0.00
9,300.00	90.00	89.82	7,140.00	4,053.55	-603.15	1,149.18	0.00	0.00	0.00
9,400.00	90.00	89.82	7,140.00	4,053.87	-503.16	1,240.13	0.00	0.00	0.00
9,500.00	90.00	89.82	7,140.00	4,054.19	-403.16	1,331.08	0.00	0.00	0.00
9,600.00	90.00	89.82	7,140.00	4,054.51	-303.16	1,422.03	0.00	0.00	0.00
9,700.00	90.00	89.82	7,140.00	4,054.83	-203.16	1,512.98	0.00	0.00	0.00
9,800.00	90.00	89.82	7,140.00	4,055.14	-103.16	1,603.93	0.00	0.00	0.00
9,900.00	90.00	89.82	7,140.00	4,055.46	-3.16	1,694.88	0.00	0.00	0.00
10,000.00	90.00	89.82	7,140.00	4,055.78	96.84	1,785.82	0.00	0.00	0.00
10,100.00	90.00	89.82	7,140.00	4,056.10	196.84	1,876.77	0.00	0.00	0.00
10,200.00	90.00	89.82	7,140.00	4,056.42	296.84	1,967.72	0.00	0.00	0.00
10,300.00	90.00	89.82	7,140.00	4,056.74	396.84	2,058.67	0.00	0.00	0.00
10,400.00	90.00	89.82	7,140.00	4,057.06	496.84	2,149.62	0.00	0.00	0.00
10,500.00	90.00	89.82	7,140.00	4,057.38	596.84	2,240.57	0.00	0.00	0.00
10,600.00	90.00	89.82	7,140.00	4,057.70	696.84	2,331.52	0.00	0.00	0.00
10,700.00	90.00	89.82	7,140.00	4,058.02	796.84	2,422.47	0.00	0.00	0.00
10,800.00	90.00	89.82	7,140.00	4,058.34	896.84	2,513.42	0.00	0.00	0.00
10,900.00	90.00	89.82	7,140.00	4,058.66	996.84	2,604.36	0.00	0.00	0.00
11,000.00	90.00	89.82	7,140.00	4,058.98	1,096.84	2,695.31	0.00	0.00	0.00
11,100.00	90.00	89.82	7,140.00	4,059.30	1,196.84	2,786.26	0.00	0.00	0.00
11,200.00	90.00	89.82	7,140.00	4,059.62	1,296.84	2,877.21	0.00	0.00	0.00
11,300.00	90.00	89.82	7,140.00	4,059.94	1,396.84	2,968.16	0.00	0.00	0.00
11,400.00	90.00	89.82	7,140.00	4,060.25	1,496.83	3,059.11	0.00	0.00	0.00
11,500.00	90.00	89.82	7,140.00	4,060.57	1,596.83	3,150.06	0.00	0.00	0.00
11,600.00	90.00	89.82	7,140.00	4,060.89	1,696.83	3,241.01	0.00	0.00	0.00
11,700.00	90.00	89.82	7,140.00	4,061.21	1,796.83	3,331.96	0.00	0.00	0.00
11,800.00	90.00	89.82	7,140.00	4,061.53	1,896.83	3,422.90	0.00	0.00	0.00
11,900.00	90.00	89.82	7,140.00	4,061.85	1,996.83	3,513.85	0.00	0.00	0.00
12,000.00	90.00	89.82	7,140.00	4,062.17	2,096.83	3,604.80	0.00	0.00	0.00
12,100.00	90.00	89.82	7,140.00	4,062.49	2,196.83	3,695.75	0.00	0.00	0.00
12,200.00	90.00	89.82	7,140.00	4,062.81	2,296.83	3,786.70	0.00	0.00	0.00
12,300.00	90.00	89.82	7,140.00	4,063.13	2,396.83	3,877.65	0.00	0.00	0.00
12,400.00	90.00	89.82	7,140.00	4,063.45	2,496.83	3,968.60	0.00	0.00	0.00
12,500.00	90.00	89.82	7,140.00	4,063.77	2,596.83	4,059.55	0.00	0.00	0.00
12,600.00	90.00	89.82	7,140.00	4,064.09	2,696.83	4,150.49	0.00	0.00	0.00
12,700.00	90.00	89.82	7,140.00	4,064.41	2,796.83	4,241.44	0.00	0.00	0.00
12,800.00	90.00	89.82	7,140.00	4,064.73	2,896.83	4,332.39	0.00	0.00	0.00
12,900.00	90.00	89.82	7,140.00	4,065.04	2,996.83	4,423.34	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well SCHLOTTHAUER 23E-20-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4985.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4985.00usft
Site:	Sec 23-T7N-R67W	North Reference:	True
Well:	SCHLOTTHAUER 23E-20-3N	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)
13,000.00	90.00	89.82	7,140.00	4,065.36	3,096.83	4,514.29	0.00	0.00	0.00
13,100.00	90.00	89.82	7,140.00	4,065.68	3,196.83	4,605.24	0.00	0.00	0.00
13,200.00	90.00	89.82	7,140.00	4,066.00	3,296.83	4,696.19	0.00	0.00	0.00
13,300.00	90.00	89.82	7,140.00	4,066.32	3,396.83	4,787.14	0.00	0.00	0.00
13,400.00	90.00	89.82	7,140.00	4,066.64	3,496.82	4,878.09	0.00	0.00	0.00
13,500.00	90.00	89.82	7,140.00	4,066.96	3,596.82	4,969.03	0.00	0.00	0.00
13,600.00	90.00	89.82	7,140.00	4,067.28	3,696.82	5,059.98	0.00	0.00	0.00
13,700.00	90.00	89.82	7,140.00	4,067.60	3,796.82	5,150.93	0.00	0.00	0.00
13,800.00	90.00	89.82	7,140.00	4,067.92	3,896.82	5,241.88	0.00	0.00	0.00
13,900.00	90.00	89.82	7,140.00	4,068.24	3,996.82	5,332.83	0.00	0.00	0.00
14,000.00	90.00	89.82	7,140.00	4,068.56	4,096.82	5,423.78	0.00	0.00	0.00
14,100.00	90.00	89.82	7,140.00	4,068.88	4,196.82	5,514.73	0.00	0.00	0.00
14,200.00	90.00	89.82	7,140.00	4,069.20	4,296.82	5,605.68	0.00	0.00	0.00
14,300.00	90.00	89.82	7,140.00	4,069.52	4,396.82	5,696.63	0.00	0.00	0.00
14,400.00	90.00	89.82	7,140.00	4,069.84	4,496.82	5,787.57	0.00	0.00	0.00
14,500.00	90.00	89.82	7,140.00	4,070.15	4,596.82	5,878.52	0.00	0.00	0.00
14,600.00	90.00	89.82	7,140.00	4,070.47	4,696.82	5,969.47	0.00	0.00	0.00
14,700.00	90.00	89.82	7,140.00	4,070.79	4,796.82	6,060.42	0.00	0.00	0.00
14,800.00	90.00	89.82	7,140.00	4,071.11	4,896.82	6,151.37	0.00	0.00	0.00
14,900.00	90.00	89.82	7,140.00	4,071.43	4,996.82	6,242.32	0.00	0.00	0.00
15,000.00	90.00	89.82	7,140.00	4,071.75	5,096.82	6,333.27	0.00	0.00	0.00
15,100.00	90.00	89.82	7,140.00	4,072.07	5,196.82	6,424.22	0.00	0.00	0.00
15,200.00	90.00	89.82	7,140.00	4,072.39	5,296.82	6,515.17	0.00	0.00	0.00
15,300.00	90.00	89.82	7,140.00	4,072.71	5,396.81	6,606.11	0.00	0.00	0.00
15,400.00	90.00	89.82	7,140.00	4,073.03	5,496.81	6,697.06	0.00	0.00	0.00
15,500.00	90.00	89.82	7,140.00	4,073.35	5,596.81	6,788.01	0.00	0.00	0.00
15,600.00	90.00	89.82	7,140.00	4,073.67	5,696.81	6,878.96	0.00	0.00	0.00
15,700.00	90.00	89.82	7,140.00	4,073.99	5,796.81	6,969.91	0.00	0.00	0.00
15,800.00	90.00	89.82	7,140.00	4,074.31	5,896.81	7,060.86	0.00	0.00	0.00
15,900.00	90.00	89.82	7,140.00	4,074.63	5,996.81	7,151.81	0.00	0.00	0.00
16,000.00	90.00	89.82	7,140.00	4,074.94	6,096.81	7,242.76	0.00	0.00	0.00
16,100.00	90.00	89.82	7,140.00	4,075.26	6,196.81	7,333.71	0.00	0.00	0.00
16,200.00	90.00	89.82	7,140.00	4,075.58	6,296.81	7,424.65	0.00	0.00	0.00
16,300.00	90.00	89.82	7,140.00	4,075.90	6,396.81	7,515.60	0.00	0.00	0.00
16,400.00	90.00	89.82	7,140.00	4,076.22	6,496.81	7,606.55	0.00	0.00	0.00
16,500.00	90.00	89.82	7,140.00	4,076.54	6,596.81	7,697.50	0.00	0.00	0.00
16,600.00	90.00	89.82	7,140.00	4,076.86	6,696.81	7,788.45	0.00	0.00	0.00
16,700.00	90.00	89.82	7,140.00	4,077.18	6,796.81	7,879.40	0.00	0.00	0.00
16,800.00	90.00	89.82	7,140.00	4,077.50	6,896.81	7,970.35	0.00	0.00	0.00
16,900.00	90.00	89.82	7,140.00	4,077.82	6,996.81	8,061.30	0.00	0.00	0.00
17,000.00	90.00	89.82	7,140.00	4,078.14	7,096.81	8,152.25	0.00	0.00	0.00
17,100.00	90.00	89.82	7,140.00	4,078.46	7,196.81	8,243.19	0.00	0.00	0.00
17,200.00	90.00	89.82	7,140.00	4,078.78	7,296.81	8,334.14	0.00	0.00	0.00
17,300.00	90.00	89.82	7,140.00	4,079.10	7,396.80	8,425.09	0.00	0.00	0.00
17,400.00	90.00	89.82	7,140.00	4,079.42	7,496.80	8,516.04	0.00	0.00	0.00
17,500.00	90.00	89.82	7,140.00	4,079.74	7,596.80	8,606.99	0.00	0.00	0.00
17,600.00	90.00	89.82	7,140.00	4,080.05	7,696.80	8,697.94	0.00	0.00	0.00
17,700.00	90.00	89.82	7,140.00	4,080.37	7,796.80	8,788.89	0.00	0.00	0.00
17,800.00	90.00	89.82	7,140.00	4,080.69	7,896.80	8,879.84	0.00	0.00	0.00
17,900.00	90.00	89.82	7,140.00	4,081.01	7,996.80	8,970.79	0.00	0.00	0.00
18,000.00	90.00	89.82	7,140.00	4,081.33	8,096.80	9,061.73	0.00	0.00	0.00
18,100.00	90.00	89.82	7,140.00	4,081.65	8,196.80	9,152.68	0.00	0.00	0.00
18,200.00	90.00	89.82	7,140.00	4,081.97	8,296.80	9,243.63	0.00	0.00	0.00
18,300.00	90.00	89.82	7,140.00	4,082.29	8,396.80	9,334.58	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well SCHLOTTHAUER 23E-20-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4985.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 4985.00usft
Site:	Sec 23-T7N-R67W	North Reference:	True
Well:	SCHLOTTHAUER 23E-20-3N	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)	
18,400.00	90.00	89.82	7,140.00	4,082.61	8,496.80	9,425.53	0.00	0.00	0.00	
18,500.00	90.00	89.82	7,140.00	4,082.93	8,596.80	9,516.48	0.00	0.00	0.00	
18,600.00	90.00	89.82	7,140.00	4,083.25	8,696.80	9,607.43	0.00	0.00	0.00	
18,700.00	90.00	89.82	7,140.00	4,083.57	8,796.80	9,698.38	0.00	0.00	0.00	
18,761.39	90.00	89.82	7,140.00	4,083.34	8,858.19	9,754.03	0.00	0.00	0.00	
TD at 18761.39										

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										
SCHLOTTHAUER 23E-3	0.00	0.00	7,140.00	4,052.98	-780.99	1,449,114.03	3,175,524.93	40° 33' 52.204 N	104° 52' 5.642 W	
- plan hits target center										
- Point										
SCHLOTTHAUER 23E-3	0.00	0.00	7,140.00	4,083.34	8,858.19	1,449,213.37	3,185,163.65	40° 33' 52.488 N	104° 50' 0.744 W	
- plan hits target center										
- Point										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,451.86	3,550.00	PARKMAN				
5,613.18	4,292.00	SUSSEX				
6,158.58	4,670.00	SHANNON				
8,659.30	6,963.00	NIOBRARA				
9,014.95	7,130.00	NIO B				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
300.00	300.00	0.00	0.00	Start Build 2.00	
2,814.40	2,503.79	981.05	-327.89	Start 2863.29 hold at 2814.40 MD	
5,677.69	4,333.21	3,070.10	-1,026.10	Start Drop -2.00	
8,192.09	6,537.00	4,051.15	-1,353.99	Start 30.00 hold at 8192.09 MD	
8,222.09	6,567.00	4,051.15	-1,353.99	Start DLS 10.00 TFO 89.82	
9,122.16	7,140.00	4,052.98	-780.99	Start 9639.23 hold at 9122.16 MD	
18,761.39	7,140.00	4,083.34	8,858.19	TD at 18761.39	