

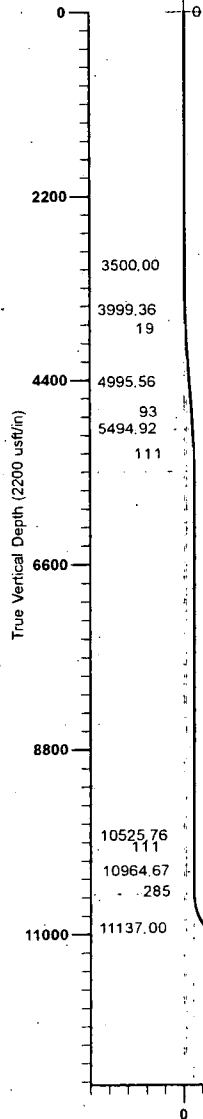
Project: Eddy County, NM (NAD27) NMEZ Grid
Site: PLU 20 Brushy Draw
Well: PLU 20 BD 123H SHL
Wellbore: 123H Lateral
Design: Plan #1



30-015-4562
45622

Azimuths to Grid North
True North: -0.23°
Magnetic North: 6.67°

Magnetic Field
Strength: 47649.2nT
Dip Angle: 59.88°
Date: 04/18/2019
Model: IGRF2015



Start Build 1.00
Start 1000.00 hold at 4000.00 MD
Start Drop -1.00
Start 5030.84 hold at 5500.00 MD

Name TVD +N/-S
PLU 20 BD 123H SHL 0.00 0.00
PLU 20 BD 123H FTP_330FNL_313FWL 11137.00 -1288.80
PLU 20 BD 123H LP 11137.00 -721.66
PLU 20 BD 123H LTP_330FSL_320FWL 11137.00 -11254.40
PLU 20 BD 123H PBHL_200FSL_320FWL 11137.00 -11387.10

Start Build 10.00
Start DLS 10.00 TFO -45.55
Start 10665.53 hold at 11532.35 MD

PLU 20 BD 123H FTP_330FNL_313FWL
PLU 20 BD 123H LP

728

Vertical Section at 181.26° (2200 usft/in)

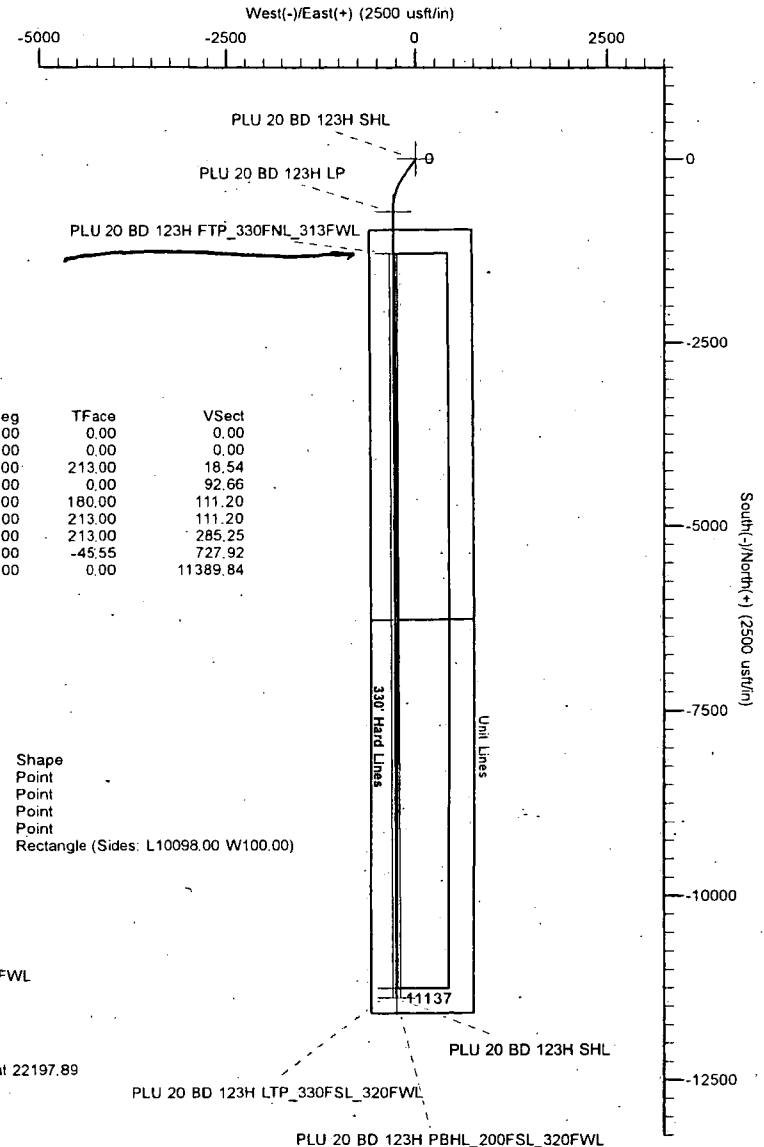
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00	0.00
4000.00	5.00	213.00	3999.36	-18.29	-11.87	1.00	213.00	18.54
5000.00	5.00	213.00	4995.56	-91.38	-59.34	0.00	0.00	92.66
5500.00	0.00	213.00	5494.92	-109.67	-71.22	1.00	180.00	111.20
10530.83	0.00	213.00	10525.76	-109.67	-71.22	0.00	213.00	111.20
11030.83	50.00	213.00	10964.67	-281.31	-182.69	10.00	213.00	285.25
11532.35	90.00	179.77	11137.00	-721.66	-293.45	10.00	-45.55	727.92
22197.89	90.00	179.77	11137.00	-11387.10	-249.90	0.00	0.00	11389.84

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PLU 20 BD 123H SHL	0.00	0.00	0.00	404287.40	632528.30	Point
PLU 20 BD 123H FTP_330FNL_313FWL	11137.00	-1288.80	-289.60	402998.60	632238.70	Point
PLU 20 BD 123H LP	11137.00	-721.66	-293.45	403565.74	632234.85	Point
PLU 20 BD 123H LTP_330FSL_320FWL	11137.00	-11254.40	-250.00	393033.00	632278.30	Point
PLU 20 BD 123H PBHL_200FSL_320FWL	11137.00	-11387.10	-249.90	392900.30	632278.40	Rectangle (Sides: L10098.00 W100.00)

PLU 20 BD 123H PBHL_200FSL_320FWL
PLU 20 BD 123H LTP_330FSL_320FWL
TD at 22197.89



To convert a Magnetic Direction to a Grid Direction, Add 6.67°
To convert a Magnetic Direction to a True Direction, Add 6.90° East
Magnetic North is 6.67° East of Grid North (Magnetic Convergence)
Magnetic North is 6.90° East of True North (Magnetic Declination)

Planning Report

Database: PREDATOR_EDM **Local Co-ordinate Reference:** Well PLU 20 BD 123H SHL - Slot PLU 20 BD 123H SHL
Company: XTO Energy **TVD Reference:** 3162+31 @ 3193.00usft (NabF26)
Project: Eddy County, NM (NAD27) NMEZ Grid **MD Reference:** 3162+31 @ 3193.00usft (NabF26)
Site: PLU 20 Brushy Draw **North Reference:** Grid
Well: PLU 20 BD 123H SHL **Survey Calculation Method:** Minimum Curvature
Wellbore: 123H Lateral
Design: Plan #1

30-015-45622??

Project: Eddy County, NM (NAD27) NMEZ Grid
Map System: US State Plane 1927 (Exact solution) **System Datum:** Mean Sea Level
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

Site: PLU 20 Brushy Draw
Site Position: **From:** Map **Northing:** 404,287.80 usft **Latitude:** 32.11077971
Easting: 632,558.20 usft **Longitude:** -103.90520511
Position Uncertainty: 0.00 usft **Slot Radius:** 13.20 in **Grid Convergence:** 0.23 °

Well: PLU 20 BD 123H SHL - Slot PLU 20 BD 123H SHL
Well Position: **+N/-S:** -0.40 usft **Northing:** 404,287.40 usft **Latitude:** 32.11077894
+E/-W: -29.90 usft **Easting:** 632,528.30 usft **Longitude:** -103.90530169
Position Uncertainty: 0.00 usft **Wellhead Elevation:** **Ground Level:** 3,162.00 usft

Wellbore: 123H Lateral
Magnetics: **Model Name:** IGRF2015 **Sample Date:** 04/18/19 **Declination (°):** 6.90 **Dip Angle (°):** 59.88 **Field Strength (nT):** 47,649.18854610

Design: Plan #1
Audit Notes:
Version: **Phase:** PROTOTYPE **Tie On Depth:** 0.00
Vertical Section: **Depth From (TVD) (usft):** 0.00 **+N/-S (usft):** 0.00 **+E/-W (usft):** 0.00 **Direction (°):** 181.26

Plan Survey Tool Program: **Date:** 04/25/19

Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	22,197.13	Plan #1 (123H Lateral)	MWD+IFR1+MS OWSG MWD + IFR1 + Multi-St

Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #1		

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	
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,000.00	5.00	213.00	3,999.36	-18.29	-11.87	1.00	1.00	0.00	213.00	
5,000.00	5.00	213.00	4,995.56	-91.38	-59.34	0.00	0.00	0.00	0.00	
5,500.00	0.00	213.00	5,494.92	-109.67	-71.22	1.00	-1.00	0.00	180.00	
10,530.83	0.00	213.00	10,525.76	-109.67	-71.22	0.00	0.00	0.00	213.00	
11,030.83	50.00	213.00	10,964.67	-281.31	-182.69	10.00	10.00	0.00	213.00	
11,532.35	90.00	179.77	11,137.00	-721.66	-293.45	10.00	7.98	-6.63	-45.55	
22,197.89	90.00	179.77	11,137.00	-11,387.10	-249.90	0.00	0.00	0.00	0.00	PLU 20 BD 123H PBI

Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #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
PLU 20 BD 123H SHL - PLU 20 BD 154H SHL - PLU 20 BD 124H SHL - PLU 20 BD 163H SHL									
1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
PLU 20 BD 104H SHL									
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
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
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
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	1.00	213.00	3,600.00	-0.73	-0.48	0.74	1.00	1.00	0.00
3,700.00	2.00	213.00	3,699.96	-2.93	-1.90	2.97	1.00	1.00	0.00
3,800.00	3.00	213.00	3,799.86	-6.59	-4.28	6.68	1.00	1.00	0.00
3,900.00	4.00	213.00	3,899.68	-11.71	-7.60	11.87	1.00	1.00	0.00
4,000.00	5.00	213.00	3,999.36	-18.29	-11.87	18.54	1.00	1.00	0.00
4,100.00	5.00	213.00	4,098.99	-25.59	-16.62	25.95	0.00	0.00	0.00
4,200.00	5.00	213.00	4,198.60	-32.90	-21.37	33.37	0.00	0.00	0.00
4,300.00	5.00	213.00	4,298.22	-40.21	-26.12	40.78	0.00	0.00	0.00
4,400.00	5.00	213.00	4,397.84	-47.52	-30.86	48.19	0.00	0.00	0.00
4,500.00	5.00	213.00	4,497.46	-54.83	-35.61	55.60	0.00	0.00	0.00
4,600.00	5.00	213.00	4,597.08	-62.14	-40.36	63.01	0.00	0.00	0.00
4,700.00	5.00	213.00	4,696.70	-69.45	-45.10	70.42	0.00	0.00	0.00
4,800.00	5.00	213.00	4,796.32	-76.76	-49.85	77.84	0.00	0.00	0.00
4,900.00	5.00	213.00	4,895.94	-84.07	-54.60	85.25	0.00	0.00	0.00

Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #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)
5,000.00	5.00	213.00	4,995.56	-91.38	-59.34	92.66	0.00	0.00	0.00
5,100.00	4.00	213.00	5,095.25	-97.96	-63.62	99.33	1.00	-1.00	0.00
5,200.00	3.00	213.00	5,195.06	-103.08	-66.94	104.52	1.00	-1.00	0.00
5,300.00	2.00	213.00	5,294.97	-106.74	-69.32	108.23	1.00	-1.00	0.00
5,400.00	1.00	213.00	5,394.93	-108.93	-70.74	110.46	1.00	-1.00	0.00
5,500.00	0.00	213.00	5,494.92	-109.67	-71.22	111.20	1.00	-1.00	0.00
5,600.00	0.00	213.00	5,594.93	-109.67	-71.22	111.20	0.00	0.00	0.00
5,700.00	0.00	213.00	5,694.93	-109.67	-71.22	111.20	0.00	0.00	0.00
5,800.00	0.00	213.00	5,794.93	-109.67	-71.22	111.20	0.00	0.00	0.00
5,900.00	0.00	213.00	5,894.93	-109.67	-71.22	111.20	0.00	0.00	0.00
6,000.00	0.00	213.00	5,994.93	-109.67	-71.22	111.20	0.00	0.00	0.00
6,100.00	0.00	213.00	6,094.93	-109.67	-71.22	111.20	0.00	0.00	0.00
6,200.00	0.00	213.00	6,194.93	-109.67	-71.22	111.20	0.00	0.00	0.00
6,300.00	0.00	213.00	6,294.93	-109.67	-71.22	111.20	0.00	0.00	0.00
6,400.00	0.00	213.00	6,394.93	-109.67	-71.22	111.20	0.00	0.00	0.00
6,500.00	0.00	213.00	6,494.93	-109.67	-71.22	111.20	0.00	0.00	0.00
6,600.00	0.00	213.00	6,594.93	-109.67	-71.22	111.20	0.00	0.00	0.00
6,700.00	0.00	213.00	6,694.93	-109.67	-71.22	111.20	0.00	0.00	0.00
6,800.00	0.00	213.00	6,794.93	-109.67	-71.22	111.20	0.00	0.00	0.00
6,900.00	0.00	213.00	6,894.93	-109.67	-71.22	111.20	0.00	0.00	0.00
7,000.00	0.00	213.00	6,994.93	-109.67	-71.22	111.20	0.00	0.00	0.00
7,100.00	0.00	213.00	7,094.93	-109.67	-71.22	111.20	0.00	0.00	0.00
7,200.00	0.00	213.00	7,194.93	-109.67	-71.22	111.20	0.00	0.00	0.00
7,300.00	0.00	213.00	7,294.93	-109.67	-71.22	111.20	0.00	0.00	0.00
7,400.00	0.00	213.00	7,394.93	-109.67	-71.22	111.20	0.00	0.00	0.00
7,500.00	0.00	213.00	7,494.93	-109.67	-71.22	111.20	0.00	0.00	0.00
7,600.00	0.00	213.00	7,594.93	-109.67	-71.22	111.20	0.00	0.00	0.00
7,700.00	0.00	213.00	7,694.93	-109.67	-71.22	111.20	0.00	0.00	0.00
7,800.00	0.00	213.00	7,794.93	-109.67	-71.22	111.20	0.00	0.00	0.00
7,900.00	0.00	213.00	7,894.93	-109.67	-71.22	111.20	0.00	0.00	0.00
8,000.00	0.00	213.00	7,994.93	-109.67	-71.22	111.20	0.00	0.00	0.00
8,100.00	0.00	213.00	8,094.93	-109.67	-71.22	111.20	0.00	0.00	0.00
8,200.00	0.00	213.00	8,194.93	-109.67	-71.22	111.20	0.00	0.00	0.00
8,300.00	0.00	213.00	8,294.93	-109.67	-71.22	111.20	0.00	0.00	0.00
8,400.00	0.00	213.00	8,394.93	-109.67	-71.22	111.20	0.00	0.00	0.00
8,500.00	0.00	213.00	8,494.93	-109.67	-71.22	111.20	0.00	0.00	0.00
8,600.00	0.00	213.00	8,594.93	-109.67	-71.22	111.20	0.00	0.00	0.00
8,700.00	0.00	213.00	8,694.93	-109.67	-71.22	111.20	0.00	0.00	0.00
8,800.00	0.00	213.00	8,794.93	-109.67	-71.22	111.20	0.00	0.00	0.00
8,900.00	0.00	213.00	8,894.93	-109.67	-71.22	111.20	0.00	0.00	0.00
9,000.00	0.00	213.00	8,994.93	-109.67	-71.22	111.20	0.00	0.00	0.00
9,100.00	0.00	213.00	9,094.93	-109.67	-71.22	111.20	0.00	0.00	0.00
9,200.00	0.00	213.00	9,194.93	-109.67	-71.22	111.20	0.00	0.00	0.00
9,300.00	0.00	213.00	9,294.93	-109.67	-71.22	111.20	0.00	0.00	0.00
9,400.00	0.00	213.00	9,394.93	-109.67	-71.22	111.20	0.00	0.00	0.00
9,500.00	0.00	213.00	9,494.93	-109.67	-71.22	111.20	0.00	0.00	0.00
9,600.00	0.00	213.00	9,594.93	-109.67	-71.22	111.20	0.00	0.00	0.00
9,700.00	0.00	213.00	9,694.93	-109.67	-71.22	111.20	0.00	0.00	0.00
9,800.00	0.00	213.00	9,794.93	-109.67	-71.22	111.20	0.00	0.00	0.00
9,900.00	0.00	213.00	9,894.93	-109.67	-71.22	111.20	0.00	0.00	0.00
10,000.00	0.00	213.00	9,994.93	-109.67	-71.22	111.20	0.00	0.00	0.00
10,100.00	0.00	213.00	10,094.93	-109.67	-71.22	111.20	0.00	0.00	0.00
10,200.00	0.00	213.00	10,194.93	-109.67	-71.22	111.20	0.00	0.00	0.00

Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #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)
10,300.00	0.00	213.00	10,294.93	-109.67	-71.22	111.20	0.00	0.00	0.00
10,400.00	0.00	213.00	10,394.93	-109.67	-71.22	111.20	0.00	0.00	0.00
10,500.00	0.00	213.00	10,494.93	-109.67	-71.22	111.20	0.00	0.00	0.00
10,530.83	0.00	213.00	10,525.76	-109.67	-71.22	111.20	0.00	0.00	0.00
10,550.00	1.92	213.00	10,544.92	-109.93	-71.39	111.47	10.00	10.00	0.00
10,600.00	6.92	213.00	10,594.76	-113.16	-73.49	114.75	10.00	10.00	0.00
10,650.00	11.92	213.00	10,644.07	-120.02	-77.94	121.70	10.00	10.00	0.00
10,700.00	16.92	213.00	10,692.48	-130.46	-84.72	132.29	10.00	10.00	0.00
10,750.00	21.92	213.00	10,739.62	-144.39	-93.77	146.42	10.00	10.00	0.00
10,800.00	26.92	213.00	10,785.13	-161.72	-105.02	163.99	10.00	10.00	0.00
10,850.00	31.92	213.00	10,828.67	-182.31	-118.39	184.87	10.00	10.00	0.00
10,900.00	36.92	213.00	10,869.91	-206.01	-133.78	208.89	10.00	10.00	0.00
10,950.00	41.92	213.00	10,908.52	-232.62	-151.07	235.88	10.00	10.00	0.00
11,000.00	46.92	213.00	10,944.23	-261.96	-170.12	265.63	10.00	10.00	0.00
11,030.83	50.00	213.00	10,964.67	-281.31	-182.69	285.25	10.00	10.00	0.00
11,050.00	51.36	211.25	10,976.82	-293.87	-190.57	297.98	10.00	7.07	-9.14
11,100.00	55.00	206.98	11,006.79	-328.84	-210.00	333.37	10.00	7.30	-8.54
11,150.00	58.79	203.08	11,034.09	-366.79	-227.68	371.69	10.00	7.57	-7.80
11,200.00	62.69	199.48	11,058.54	-407.42	-243.48	412.67	10.00	7.79	-7.19
11,250.00	66.67	196.13	11,079.92	-450.44	-257.28	455.98	10.00	7.96	-6.70
11,300.00	70.71	192.98	11,098.09	-495.52	-268.96	501.30	10.00	8.09	-6.30
11,350.00	74.81	189.98	11,112.91	-542.30	-278.45	548.28	10.00	8.20	-6.00
11,400.00	78.95	187.10	11,124.26	-590.44	-285.66	596.57	10.00	8.27	-5.77
11,450.00	83.11	184.29	11,132.06	-639.57	-290.55	645.79	10.00	8.33	-5.61
11,500.00	87.29	181.54	11,136.24	-689.32	-293.08	695.58	10.00	8.36	-5.51
11,532.36	90.00	179.77	11,137.00	-721.66	-293.45	727.92	10.00	8.37	-5.47
PLU 20 BD 123H LP									
11,600.00	90.00	179.77	11,137.00	-789.30	-293.17	795.54	0.00	0.00	0.00
11,700.00	90.00	179.77	11,137.00	-889.30	-292.76	895.51	0.00	0.00	0.00
11,800.00	90.00	179.77	11,137.00	-989.30	-292.36	995.48	0.00	0.00	0.00
11,900.00	90.00	179.77	11,137.00	-1,089.30	-291.95	1,095.44	0.00	0.00	0.00
12,000.00	90.00	179.77	11,137.00	-1,189.30	-291.54	1,195.41	0.00	0.00	0.00
12,094.20	90.00	179.77	11,137.00	-1,283.50	-291.16	1,289.58	0.00	0.00	0.00
PLU 20 BD 154H FTP_330FNL_363FEL - PLU 20 BD 124H FTP_330FNL_363FEL									
12,096.76	90.00	179.77	11,137.00	-1,286.05	-291.14	1,292.13	0.00	0.00	0.00
PLU 20 BD 104H FTP_330FNL_644FWL									
12,099.51	90.00	179.77	11,137.00	-1,288.81	-291.13	1,294.88	0.00	0.00	0.00
PLU 20 BD 163H FTP_330FNL_313FWL - PLU 20 BD 123H FTP_330FNL_313FWL									
12,100.00	90.00	179.77	11,137.00	-1,289.30	-291.13	1,295.38	0.00	0.00	0.00
12,200.00	90.00	179.77	11,137.00	-1,389.30	-290.72	1,395.34	0.00	0.00	0.00
12,300.00	90.00	179.77	11,137.00	-1,489.30	-290.31	1,495.31	0.00	0.00	0.00
12,400.00	90.00	179.77	11,137.00	-1,589.30	-289.91	1,595.27	0.00	0.00	0.00
12,500.00	90.00	179.77	11,137.00	-1,689.29	-289.50	1,695.24	0.00	0.00	0.00
12,600.00	90.00	179.77	11,137.00	-1,789.29	-289.09	1,795.21	0.00	0.00	0.00
12,700.00	90.00	179.77	11,137.00	-1,889.29	-288.68	1,895.17	0.00	0.00	0.00
12,800.00	90.00	179.77	11,137.00	-1,989.29	-288.27	1,995.14	0.00	0.00	0.00
12,900.00	90.00	179.77	11,137.00	-2,089.29	-287.87	2,095.10	0.00	0.00	0.00
13,000.00	90.00	179.77	11,137.00	-2,189.29	-287.46	2,195.07	0.00	0.00	0.00
13,100.00	90.00	179.77	11,137.00	-2,289.29	-287.05	2,295.04	0.00	0.00	0.00
13,200.00	90.00	179.77	11,137.00	-2,389.29	-286.64	2,395.00	0.00	0.00	0.00
13,300.00	90.00	179.77	11,137.00	-2,489.29	-286.23	2,494.97	0.00	0.00	0.00
13,400.00	90.00	179.77	11,137.00	-2,589.29	-285.82	2,594.94	0.00	0.00	0.00

Planning Report

Database: PREDATOR_EDM Local Co-ordinate Reference: Well PLU 20 BD 123H SHL - Slot PLU 20 BD 123H SHL
 Company: XTO Energy TVD Reference: 3162+31 @ 3193.00usft (NabF26)
 Project: Eddy County, NM (NAD27) NMEZ Grid MD Reference: 3162+31 @ 3193.00usft (NabF26)
 Site: PLU 20 Brushy Draw North Reference: Grid
 Well: PLU 20 BD 123H SHL Survey Calculation Method: Minimum Curvature
 Wellbore: 123H Lateral
 Design: Plan #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)
13,500.00	90.00	179.77	11,137.00	-2,689.29	-285.42	2,694.90	0.00	0.00	0.00
13,600.00	90.00	179.77	11,137.00	-2,789.29	-285.01	2,794.87	0.00	0.00	0.00
13,700.00	90.00	179.77	11,137.00	-2,889.28	-284.60	2,894.83	0.00	0.00	0.00
13,800.00	90.00	179.77	11,137.00	-2,989.28	-284.19	2,994.80	0.00	0.00	0.00
13,900.00	90.00	179.77	11,137.00	-3,089.28	-283.78	3,094.77	0.00	0.00	0.00
14,000.00	90.00	179.77	11,137.00	-3,189.28	-283.37	3,194.73	0.00	0.00	0.00
14,100.00	90.00	179.77	11,137.00	-3,289.28	-282.97	3,294.70	0.00	0.00	0.00
14,200.00	90.00	179.77	11,137.00	-3,389.28	-282.56	3,394.66	0.00	0.00	0.00
14,300.00	90.00	179.77	11,137.00	-3,489.28	-282.15	3,494.63	0.00	0.00	0.00
14,400.00	90.00	179.77	11,137.00	-3,589.28	-281.74	3,594.60	0.00	0.00	0.00
14,500.00	90.00	179.77	11,137.00	-3,689.28	-281.33	3,694.56	0.00	0.00	0.00
14,600.00	90.00	179.77	11,137.00	-3,789.28	-280.92	3,794.53	0.00	0.00	0.00
14,700.00	90.00	179.77	11,137.00	-3,889.28	-280.52	3,894.49	0.00	0.00	0.00
14,800.00	90.00	179.77	11,137.00	-3,989.28	-280.11	3,994.46	0.00	0.00	0.00
14,900.00	90.00	179.77	11,137.00	-4,089.27	-279.70	4,094.43	0.00	0.00	0.00
15,000.00	90.00	179.77	11,137.00	-4,189.27	-279.29	4,194.39	0.00	0.00	0.00
15,100.00	90.00	179.77	11,137.00	-4,289.27	-278.88	4,294.36	0.00	0.00	0.00
15,200.00	90.00	179.77	11,137.00	-4,389.27	-278.47	4,394.33	0.00	0.00	0.00
15,300.00	90.00	179.77	11,137.00	-4,489.27	-278.07	4,494.29	0.00	0.00	0.00
15,400.00	90.00	179.77	11,137.00	-4,589.27	-277.66	4,594.26	0.00	0.00	0.00
15,500.00	90.00	179.77	11,137.00	-4,689.27	-277.25	4,694.22	0.00	0.00	0.00
15,600.00	90.00	179.77	11,137.00	-4,789.27	-276.84	4,794.19	0.00	0.00	0.00
15,700.00	90.00	179.77	11,137.00	-4,889.27	-276.43	4,894.16	0.00	0.00	0.00
15,800.00	90.00	179.77	11,137.00	-4,989.27	-276.02	4,994.12	0.00	0.00	0.00
15,900.00	90.00	179.77	11,137.00	-5,089.27	-275.62	5,094.09	0.00	0.00	0.00
16,000.00	90.00	179.77	11,137.00	-5,189.27	-275.21	5,194.05	0.00	0.00	0.00
16,100.00	90.00	179.77	11,137.00	-5,289.26	-274.80	5,294.02	0.00	0.00	0.00
16,200.00	90.00	179.77	11,137.00	-5,389.26	-274.39	5,393.99	0.00	0.00	0.00
16,300.00	90.00	179.77	11,137.00	-5,489.26	-273.98	5,493.95	0.00	0.00	0.00
16,400.00	90.00	179.77	11,137.00	-5,589.26	-273.57	5,593.92	0.00	0.00	0.00
16,500.00	90.00	179.77	11,137.00	-5,689.26	-273.17	5,693.89	0.00	0.00	0.00
16,600.00	90.00	179.77	11,137.00	-5,789.26	-272.76	5,793.85	0.00	0.00	0.00
16,700.00	90.00	179.77	11,137.00	-5,889.26	-272.35	5,893.82	0.00	0.00	0.00
16,800.00	90.00	179.77	11,137.00	-5,989.26	-271.94	5,993.78	0.00	0.00	0.00
16,900.00	90.00	179.77	11,137.00	-6,089.26	-271.53	6,093.75	0.00	0.00	0.00
17,000.00	90.00	179.77	11,137.00	-6,189.26	-271.12	6,193.72	0.00	0.00	0.00
17,100.00	90.00	179.77	11,137.00	-6,289.26	-270.72	6,293.68	0.00	0.00	0.00
17,200.00	90.00	179.77	11,137.00	-6,389.26	-270.31	6,393.65	0.00	0.00	0.00
17,300.00	90.00	179.77	11,137.00	-6,489.25	-269.90	6,493.61	0.00	0.00	0.00
17,400.00	90.00	179.77	11,137.00	-6,589.25	-269.49	6,593.58	0.00	0.00	0.00
17,500.00	90.00	179.77	11,137.00	-6,689.25	-269.08	6,693.55	0.00	0.00	0.00
17,600.00	90.00	179.77	11,137.00	-6,789.25	-268.67	6,793.51	0.00	0.00	0.00
17,700.00	90.00	179.77	11,137.00	-6,889.25	-268.27	6,893.48	0.00	0.00	0.00
17,800.00	90.00	179.77	11,137.00	-6,989.25	-267.86	6,993.45	0.00	0.00	0.00
17,900.00	90.00	179.77	11,137.00	-7,089.25	-267.45	7,093.41	0.00	0.00	0.00
18,000.00	90.00	179.77	11,137.00	-7,189.25	-267.04	7,193.38	0.00	0.00	0.00
18,100.00	90.00	179.77	11,137.00	-7,289.25	-266.63	7,293.34	0.00	0.00	0.00
18,200.00	90.00	179.77	11,137.00	-7,389.25	-266.22	7,393.31	0.00	0.00	0.00
18,300.00	90.00	179.77	11,137.00	-7,489.25	-265.82	7,493.28	0.00	0.00	0.00
18,400.00	90.00	179.77	11,137.00	-7,589.25	-265.41	7,593.24	0.00	0.00	0.00
18,500.00	90.00	179.77	11,137.00	-7,689.24	-265.00	7,693.21	0.00	0.00	0.00
18,600.00	90.00	179.77	11,137.00	-7,789.24	-264.59	7,793.17	0.00	0.00	0.00
18,700.00	90.00	179.77	11,137.00	-7,889.24	-264.18	7,893.14	0.00	0.00	0.00

Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #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)
18,800.00	90.00	179.77	11,137.00	-7,989.24	-263.77	7,993.11	0.00	0.00	0.00
18,900.00	90.00	179.77	11,137.00	-8,089.24	-263.37	8,093.07	0.00	0.00	0.00
19,000.00	90.00	179.77	11,137.00	-8,189.24	-262.96	8,193.04	0.00	0.00	0.00
19,100.00	90.00	179.77	11,137.00	-8,289.24	-262.55	8,293.00	0.00	0.00	0.00
19,200.00	90.00	179.77	11,137.00	-8,389.24	-262.14	8,392.97	0.00	0.00	0.00
19,300.00	90.00	179.77	11,137.00	-8,489.24	-261.73	8,492.94	0.00	0.00	0.00
19,400.00	90.00	179.77	11,137.00	-8,589.24	-261.32	8,592.90	0.00	0.00	0.00
19,500.00	90.00	179.77	11,137.00	-8,689.24	-260.92	8,692.87	0.00	0.00	0.00
19,600.00	90.00	179.77	11,137.00	-8,789.24	-260.51	8,792.84	0.00	0.00	0.00
19,700.00	90.00	179.77	11,137.00	-8,889.23	-260.10	8,892.80	0.00	0.00	0.00
19,800.00	90.00	179.77	11,137.00	-8,989.23	-259.69	8,992.77	0.00	0.00	0.00
19,900.00	90.00	179.77	11,137.00	-9,089.23	-259.28	9,092.73	0.00	0.00	0.00
20,000.00	90.00	179.77	11,137.00	-9,189.23	-258.87	9,192.70	0.00	0.00	0.00
20,100.00	90.00	179.77	11,137.00	-9,289.23	-258.47	9,292.67	0.00	0.00	0.00
20,200.00	90.00	179.77	11,137.00	-9,389.23	-258.06	9,392.63	0.00	0.00	0.00
20,300.00	90.00	179.77	11,137.00	-9,489.23	-257.65	9,492.60	0.00	0.00	0.00
20,400.00	90.00	179.77	11,137.00	-9,589.23	-257.24	9,592.56	0.00	0.00	0.00
20,500.00	90.00	179.77	11,137.00	-9,689.23	-256.83	9,692.53	0.00	0.00	0.00
20,600.00	90.00	179.77	11,137.00	-9,789.23	-256.42	9,792.50	0.00	0.00	0.00
20,700.00	90.00	179.77	11,137.00	-9,889.23	-256.02	9,892.46	0.00	0.00	0.00
20,800.00	90.00	179.77	11,137.00	-9,989.23	-255.61	9,992.43	0.00	0.00	0.00
20,900.00	90.00	179.77	11,137.00	-10,089.22	-255.20	10,092.40	0.00	0.00	0.00
21,000.00	90.00	179.77	11,137.00	-10,189.22	-254.79	10,192.36	0.00	0.00	0.00
21,100.00	90.00	179.77	11,137.00	-10,289.22	-254.38	10,292.33	0.00	0.00	0.00
21,200.00	90.00	179.77	11,137.00	-10,389.22	-253.97	10,392.29	0.00	0.00	0.00
21,300.00	90.00	179.77	11,137.00	-10,489.22	-253.57	10,492.26	0.00	0.00	0.00
21,400.00	90.00	179.77	11,137.00	-10,589.22	-253.16	10,592.23	0.00	0.00	0.00
21,500.00	90.00	179.77	11,137.00	-10,689.22	-252.75	10,692.19	0.00	0.00	0.00
21,600.00	90.00	179.77	11,137.00	-10,789.22	-252.34	10,792.16	0.00	0.00	0.00
21,700.00	90.00	179.77	11,137.00	-10,889.22	-251.93	10,892.12	0.00	0.00	0.00
21,800.00	90.00	179.77	11,137.00	-10,989.22	-251.52	10,992.09	0.00	0.00	0.00
21,900.00	90.00	179.77	11,137.00	-11,089.22	-251.12	11,092.06	0.00	0.00	0.00
22,000.00	90.00	179.77	11,137.00	-11,189.22	-250.71	11,192.02	0.00	0.00	0.00
22,065.18	90.00	179.77	11,137.00	-11,254.40	-250.44	11,257.18	0.00	0.00	0.00
PLU 20 BD 154H LTP_330FSL_350FEL - PLU 20 BD 124H LTP_330FSL_350FEL									
22,065.19	90.00	179.77	11,137.00	-11,254.40	-250.44	11,257.19	0.02	0.00	0.00
PLU 20 BD 123H LTP_330FSL_320FWL									
22,066.53	90.00	179.77	11,137.00	-11,255.75	-250.44	11,258.53	0.00	0.00	0.00
PLU 20 BD 104H LTP_330FSL_650FWL									
22,067.89	90.00	179.77	11,137.00	-11,257.10	-250.43	11,259.89	0.00	0.00	0.00
PLU 20 BD 163H LTP_330FSL_320FWL									
22,100.00	90.00	179.77	11,137.00	-11,289.21	-250.30	11,291.99	0.00	0.00	0.00
22,195.18	90.00	179.77	11,137.00	-11,384.40	-249.91	11,387.14	0.00	0.00	0.00
PLU 20 BD 124H PBHL_200FSL_350FEL - PLU 20 BD 154H PBHL_200FSL_350FEL									
22,196.53	90.00	179.77	11,137.00	-11,385.75	-249.91	11,388.49	0.00	0.00	0.00
PLU 20 BD 104H PBHL_200FSL_650FWL									
22,197.89	90.00	179.77	11,137.00	-11,387.10	-249.90	11,389.84	0.00	0.00	0.00
PLU 20 BD 163H PBHL_200FSL_320FWL - PLU 20 BD 123H PBHL_200FSL_320FWL									

Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
PLU 20 BD 123H SHL	0.00	0.00	0.00	0.00	0.00	404,287.40	632,528.30	32.11077894	-103.90530169
- plan hits target center									
- Point									
PLU 20 BD 123H LP	0.00	0.00	11,137.00	-721.66	-293.45	403,565.74	632,234.85	32.10879832	-103.90625866
- plan hits target center									
- Point									
PLU 20 BD 123H LTP_3	0.00	0.00	11,137.00	-11,254.40	-250.00	393,033.00	632,278.30	32.07984361	-103.90625306
- plan misses target center by 0.44usft at 22065.19usft MD (11137.00 TVD, -11254.40 N, -250.44 E)									
- Point									
PLU 20 BD 123H PBHL	0.00	0.00	11,137.00	-11,387.10	-249.90	392,900.30	632,278.40	32.07947881	-103.90625443
- plan hits target center									
- Rectangle (sides W100.00 H10,098.00 D0.00)									
PLU 20 BD 123H FTP_3	0.00	0.00	11,137.00	-1,288.80	-289.60	402,998.60	632,238.70	32.10723922	-103.90625349
- plan misses target center by 1.53usft at 12099.51usft MD (11137.00 TVD, -1288.81 N, -291.13 E)									
- Point									

16. When setting the top out cement plug in production, intermediate and surface casing, wellbores should remain full at least 30 minutes after plugs are set
17. **A CIBP is to be set within 100' of production perforations, capped with 100' of cement, WOC 4 hours and tag.**
18. A CIBP with 35' of cement may be used in lieu of the 100' plug if set with a bailer. This plug will be placed within 100' of the top perforation, **(WOC 4 hrs and tag).**
19. **No more than 3000' is allowed between cement plugs in cased hole and 2000' in open hole.**
20. Some of the Formations to be isolated with cement plugs are: These plugs to be set to isolate formation tops
 - A) Fusselman
 - B) Devonian
 - C) Morrow
 - D) Wolfcamp
 - E) Bone Springs
 - F) Delaware
 - G) Any salt sections
 - H) Abo
 - I) Glorieta
 - J) Yates.
 - K) **Potash---** (In the R-111-P Area (Potash Mine Area), a solid cement plug must be set across the salt section. Fluid used to mix the cement shall be saturated with the salts that are common to the section penetrated and in suitable proportions, not more than 3% calcium chloride (by weight of cement) will be considered the desired mixture whenever possible, **WOC 4 hours and tag, this plug will be 50' below the bottom and 50' above the top of the Formation.**
21. **If cement does not exist behind casing strings at recommended formation depths, the casing can be cut and pulled with plugs set at recommended depths. If casing is not pulled, perforations will be shot and cement squeezed behind casing, WOC and tagged. These plugs will be set 50' below formation bottom to 50' above formation top inside the casing**

DRY HOLE MARKER REQUIREMENTS

The operator shall mark the exact location of the plugged and abandoned well with a steel marker not less than four inches in diameter, 3' below ground level with a plate of at least ¼" welded to the top of the casing and the dry hole marker welded on the plate with the following information welded on the dry hole marker:

1. Operator name 2. Lease and Well Number 3.API Number 4. Unit Letter 5. Quarter Section (feet from the North, South, East or West) 6. Section, Township and Range 7. Plugging Date 8. County (SPECIAL CASES)-----AGRICULTURE OR PRARIE CHICKEN BREEDING AREAS

In these areas, a below ground marker is required with all pertinent information mentioned above on a plate, set 3' below ground level, a picture of the plate will be supplied to NMOCD for record, the exact location of the marker (longitude and latitude by GPS) will be provided to NMOCD (We typically require a current survey to verify the GPS)