

WCDSC Permian NM

Lea County (NAD83 New Mexico East)

Sec 03-T23-R33E

North Thistle 3-34 State 1H

Wellbore #1

Plan: Permit Plan 4

Standard Planning Report - Geographic

02 August, 2018

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well North Thistle 3-34 State 1H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3620.90ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3620.90ft
Site:	Sec 03-T23-R33E	North Reference:	Grid
Well:	North Thistle 3-34 State 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 4		

Project	Lea County (NAD83 New Mexico East)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 03-T23-R33E			
Site Position:		Northing:	488,963.77 usft	Latitude: 32.341907
From:	Map	Easting:	777,934.07 usft	Longitude: -103.567243
Position Uncertainty:	5.00 ft	Slot Radius:	13-3/16"	Grid Convergence: 0.41 °

Well	North Thistle 3-34 State 1H			
Well Position	+N/-S	0.00 ft	Northing:	483,599.20 usft
	+E/-W	0.00 ft	Easting:	778,951.10 usft
Position Uncertainty	0.50 ft	Wellhead Elevation:		Ground Level: 3,595.90 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/2/2018	6.86	60.15	47,908.93427005

Design	Permit Plan 4			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	353.57

Plan Survey Tool Program	Date 8/2/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	19,859.76 Permit Plan 4 (Wellbore #1)	MWD+IFR1 OWSG MWD + IFR1	

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Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,899.87	9.00	258.40	2,896.18	-14.18	-69.08	1.00	1.00	0.00	258.40	
8,152.90	9.00	258.40	8,084.55	-179.33	-873.95	0.00	0.00	0.00	0.00	
8,752.81	0.00	0.00	8,682.00	-188.78	-920.00	1.50	-1.50	0.00	180.00	
9,058.85	0.00	0.00	8,988.04	-188.78	-920.00	0.00	0.00	0.00	0.00	
9,923.74	90.00	0.00	9,538.64	361.82	-920.00	10.41	10.41	0.00	0.00	
14,985.16	90.00	0.00	9,538.64	5,423.24	-920.00	0.00	0.00	0.00	0.00	
15,127.77	90.00	357.15	9,538.64	5,565.79	-923.55	2.00	0.00	-2.00	-90.00	North Thistle 3-34 Sta
19,859.76	90.00	357.15	9,538.64	10,291.92	-1,159.00	0.00	0.00	0.00	0.00	North Thistle 3-34 Sta

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Wellbore:	Wellbore #1		
Design:	Permit Plan 4		

Planned Survey:

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
100.00	0.00	0.00	100.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
200.00	0.00	0.00	200.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
300.00	0.00	0.00	300.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
400.00	0.00	0.00	400.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
500.00	0.00	0.00	500.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
600.00	0.00	0.00	600.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
700.00	0.00	0.00	700.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
800.00	0.00	0.00	800.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
900.00	0.00	0.00	900.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
1,000.00	0.00	0.00	1,000.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
1,100.00	0.00	0.00	1,100.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
1,200.00	0.00	0.00	1,200.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
1,300.00	0.00	0.00	1,300.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
1,400.00	0.00	0.00	1,400.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
1,500.00	0.00	0.00	1,500.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
1,600.00	0.00	0.00	1,600.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
1,700.00	0.00	0.00	1,700.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
1,800.00	0.00	0.00	1,800.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
1,900.00	0.00	0.00	1,900.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
2,000.00	0.00	0.00	2,000.00	0.00	0.00	483,599.20	778,951.10	32.327141	-103.564075
2,100.00	1.00	258.40	2,099.99	-0.18	-0.85	483,599.03	778,950.24	32.327141	-103.564077
2,200.00	2.00	258.40	2,199.96	-0.70	-3.42	483,598.50	778,947.68	32.327140	-103.564086
2,300.00	3.00	258.40	2,299.86	-1.58	-7.69	483,597.62	778,943.41	32.327137	-103.564100
2,400.00	4.00	258.40	2,399.68	-2.81	-13.67	483,596.40	778,937.43	32.327134	-103.564119
2,500.00	5.00	258.40	2,499.37	-4.38	-21.36	483,594.82	778,929.74	32.327130	-103.564144
2,600.00	6.00	258.40	2,598.90	-6.31	-30.75	483,592.89	778,920.35	32.327125	-103.564174
2,700.00	7.00	258.40	2,698.26	-8.58	-41.84	483,590.62	778,909.26	32.327119	-103.564210
2,800.00	8.00	258.40	2,797.40	-11.21	-54.62	483,587.99	778,896.48	32.327112	-103.564252
2,899.87	9.00	258.40	2,896.18	-14.18	-69.08	483,585.03	778,882.02	32.327104	-103.564299
2,900.00	9.00	258.40	2,896.30	-14.18	-69.10	483,585.02	778,882.00	32.327104	-103.564299
3,000.00	9.00	258.40	2,995.07	-17.32	-84.42	483,581.88	778,866.68	32.327095	-103.564348
3,100.00	9.00	258.40	3,093.84	-20.47	-99.74	483,578.73	778,851.35	32.327087	-103.564398
3,200.00	9.00	258.40	3,192.61	-23.61	-115.07	483,575.59	778,836.03	32.327079	-103.564448
3,300.00	9.00	258.40	3,291.38	-26.76	-130.39	483,572.45	778,820.71	32.327070	-103.564497
3,400.00	9.00	258.40	3,390.15	-29.90	-145.71	483,569.30	778,805.39	32.327062	-103.564547
3,500.00	9.00	258.40	3,488.92	-33.04	-161.03	483,566.16	778,790.07	32.327054	-103.564597
3,600.00	9.00	258.40	3,587.69	-36.19	-176.35	483,563.01	778,774.74	32.327045	-103.564646
3,700.00	9.00	258.40	3,686.46	-39.33	-191.68	483,559.87	778,759.42	32.327037	-103.564696
3,800.00	9.00	258.40	3,785.23	-42.48	-207.00	483,556.72	778,744.10	32.327029	-103.564746
3,900.00	9.00	258.40	3,884.00	-45.62	-222.32	483,553.58	778,728.78	32.327020	-103.564795
4,000.00	9.00	258.40	3,982.76	-48.76	-237.64	483,550.44	778,713.46	32.327012	-103.564845
4,100.00	9.00	258.40	4,081.53	-51.91	-252.96	483,547.29	778,698.13	32.327004	-103.564895
4,200.00	9.00	258.40	4,180.30	-55.05	-268.29	483,544.15	778,682.81	32.326995	-103.564944
4,300.00	9.00	258.40	4,279.07	-58.20	-283.61	483,541.00	778,667.49	32.326987	-103.564994
4,400.00	9.00	258.40	4,377.84	-61.34	-298.93	483,537.86	778,652.17	32.326979	-103.565044
4,500.00	9.00	258.40	4,476.61	-64.48	-314.25	483,534.72	778,636.85	32.326970	-103.565093
4,600.00	9.00	258.40	4,575.38	-67.63	-329.57	483,531.57	778,621.52	32.326962	-103.565143
4,700.00	9.00	258.40	4,674.15	-70.77	-344.90	483,528.43	778,606.20	32.326954	-103.565193
4,800.00	9.00	258.40	4,772.92	-73.92	-360.22	483,525.28	778,590.88	32.326945	-103.565242
4,900.00	9.00	258.40	4,871.69	-77.06	-375.54	483,522.14	778,575.56	32.326937	-103.565292
5,000.00	9.00	258.40	4,970.46	-80.20	-390.86	483,519.00	778,560.24	32.326929	-103.565342
5,100.00	9.00	258.40	5,069.23	-83.35	-406.18	483,515.85	778,544.92	32.326920	-103.565391
5,200.00	9.00	258.40	5,168.00	-86.49	-421.51	483,512.71	778,529.59	32.326912	-103.565441
5,300.00	9.00	258.40	5,266.76	-89.64	-436.83	483,509.56	778,514.27	32.326904	-103.565491

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North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.00	9.00	258.40	5,365.53	-92.78	-452.15	483,506.42	778,498.95	32.326895	-103.565541
5,500.00	9.00	258.40	5,464.30	-95.93	-467.47	483,503.28	778,483.63	32.326887	-103.565590
5,600.00	9.00	258.40	5,563.07	-99.07	-482.79	483,500.13	778,468.31	32.326879	-103.565640
5,700.00	9.00	258.40	5,661.84	-102.21	-498.11	483,496.99	778,452.98	32.326870	-103.565690
5,800.00	9.00	258.40	5,760.61	-105.36	-513.44	483,493.84	778,437.66	32.326862	-103.565739
5,900.00	9.00	258.40	5,859.38	-108.50	-528.76	483,490.70	778,422.34	32.326854	-103.565789
6,000.00	9.00	258.40	5,958.15	-111.65	-544.08	483,487.56	778,407.02	32.326845	-103.565839
6,100.00	9.00	258.40	6,056.92	-114.79	-559.40	483,484.41	778,391.70	32.326837	-103.565888
6,200.00	9.00	258.40	6,155.69	-117.93	-574.72	483,481.27	778,376.37	32.326829	-103.565938
6,300.00	9.00	258.40	6,254.46	-121.08	-590.05	483,478.12	778,361.05	32.326820	-103.565988
6,400.00	9.00	258.40	6,353.23	-124.22	-605.37	483,474.98	778,345.73	32.326812	-103.566037
6,500.00	9.00	258.40	6,451.99	-127.37	-620.69	483,471.83	778,330.41	32.326804	-103.566087
6,600.00	9.00	258.40	6,550.76	-130.51	-636.01	483,468.69	778,315.09	32.326795	-103.566137
6,700.00	9.00	258.40	6,649.53	-133.65	-651.33	483,465.55	778,299.76	32.326787	-103.566186
6,800.00	9.00	258.40	6,748.30	-136.80	-666.66	483,462.40	778,284.44	32.326779	-103.566236
6,900.00	9.00	258.40	6,847.07	-139.94	-681.98	483,459.26	778,269.12	32.326770	-103.566286
7,000.00	9.00	258.40	6,945.84	-143.09	-697.30	483,456.11	778,253.80	32.326762	-103.566335
7,100.00	9.00	258.40	7,044.61	-146.23	-712.62	483,452.97	778,238.48	32.326754	-103.566385
7,200.00	9.00	258.40	7,143.38	-149.37	-727.94	483,449.83	778,223.16	32.326745	-103.566435
7,300.00	9.00	258.40	7,242.15	-152.52	-743.27	483,446.68	778,207.83	32.326737	-103.566484
7,400.00	9.00	258.40	7,340.92	-155.66	-758.59	483,443.54	778,192.51	32.326729	-103.566534
7,500.00	9.00	258.40	7,439.69	-158.81	-773.91	483,440.39	778,177.19	32.326720	-103.566584
7,600.00	9.00	258.40	7,538.46	-161.95	-789.23	483,437.25	778,161.87	32.326712	-103.566633
7,700.00	9.00	258.40	7,637.22	-165.09	-804.55	483,434.11	778,146.55	32.326703	-103.566683
7,800.00	9.00	258.40	7,735.99	-168.24	-819.88	483,430.96	778,131.22	32.326695	-103.566733
7,900.00	9.00	258.40	7,834.76	-171.38	-835.20	483,427.82	778,115.90	32.326687	-103.566782
8,000.00	9.00	258.40	7,933.53	-174.53	-850.52	483,424.67	778,100.58	32.326678	-103.566832
8,100.00	9.00	258.40	8,032.30	-177.67	-865.84	483,421.53	778,085.26	32.326670	-103.566882
8,152.90	9.00	258.40	8,084.55	-179.33	-873.95	483,419.87	778,077.15	32.326666	-103.566908
8,200.00	8.29	258.40	8,131.12	-180.76	-880.88	483,418.44	778,070.22	32.326662	-103.566930
8,300.00	6.79	258.40	8,230.25	-183.40	-893.74	483,415.81	778,057.36	32.326655	-103.566972
8,400.00	5.29	258.40	8,329.69	-185.51	-904.05	483,413.69	778,047.05	32.326649	-103.567006
8,500.00	3.79	258.40	8,429.37	-187.10	-911.81	483,412.10	778,039.29	32.326645	-103.567031
8,600.00	2.29	258.40	8,529.23	-188.17	-917.01	483,411.03	778,034.09	32.326642	-103.567048
8,700.00	0.79	258.40	8,629.19	-188.71	-919.64	483,410.49	778,031.46	32.326641	-103.567056
8,752.81	0.00	0.00	8,682.00	-188.78	-920.00	483,410.42	778,031.10	32.326641	-103.567057
8,800.00	0.00	0.00	8,729.19	-188.78	-920.00	483,410.42	778,031.10	32.326641	-103.567057
8,900.00	0.00	0.00	8,829.19	-188.78	-920.00	483,410.42	778,031.10	32.326641	-103.567057
9,000.00	0.00	0.00	8,929.19	-188.78	-920.00	483,410.42	778,031.10	32.326641	-103.567057
9,058.85	0.00	0.00	8,988.04	-188.78	-920.00	483,410.42	778,031.10	32.326641	-103.567057
KOP @ 9059' MD, 50' FSL, 539' FWL									
9,100.00	4.28	0.00	9,029.15	-187.25	-920.00	483,411.95	778,031.10	32.326645	-103.567057
9,200.00	14.69	0.00	9,127.65	-170.79	-920.00	483,428.41	778,031.10	32.326690	-103.567057
9,300.00	25.09	0.00	9,221.55	-136.82	-920.00	483,462.39	778,031.10	32.326783	-103.567056
9,313.37	26.49	0.00	9,233.59	-131.00	-920.00	483,468.20	778,031.10	32.326799	-103.567056
First Take Point @ 9313' MD, 100' FSL, 360' FWL									
9,400.00	35.50	0.00	9,307.78	-86.44	-920.00	483,512.76	778,031.10	32.326922	-103.567055
9,500.00	45.91	0.00	9,383.48	-21.31	-920.00	483,577.89	778,031.10	32.327101	-103.567053
9,600.00	56.31	0.00	9,446.18	56.41	-920.00	483,655.61	778,031.10	32.327315	-103.567052
9,700.00	66.72	0.00	9,493.81	144.19	-920.00	483,743.39	778,031.10	32.327556	-103.567050
9,800.00	77.12	0.00	9,524.80	239.12	-920.00	483,838.32	778,031.10	32.327817	-103.567047
9,900.00	87.53	0.00	9,538.13	338.09	-920.00	483,937.29	778,031.10	32.328089	-103.567045
9,923.74	90.00	0.00	9,538.64	361.82	-920.00	483,961.02	778,031.10	32.328154	-103.567045
10,000.00	90.00	0.00	9,538.64	438.08	-920.00	484,037.28	778,031.10	32.328364	-103.567043

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 Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
 Site: Sec 03-T23-R33E
 Well: North Thistle 3-34 State 1H
 Wellbore: Wellbore #1
 Design: Permit Plan 4

Local Co-ordinate Reference: Well North Thistle 3-34 State 1H
 TVD Reference: RKB @ 3620.90ft
 MD Reference: RKB @ 3620.90ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,100.00	90.00	0.00	9,538.64	538.08	-920.00	484,137.28	778,031.10	32.328639	-103.567040
10,200.00	90.00	0.00	9,538.64	638.08	-920.00	484,237.28	778,031.10	32.328913	-103.567038
10,300.00	90.00	0.00	9,538.64	738.08	-920.00	484,337.28	778,031.10	32.329188	-103.567036
10,400.00	90.00	0.00	9,538.64	838.08	-920.00	484,437.28	778,031.10	32.329463	-103.567033
10,500.00	90.00	0.00	9,538.64	938.08	-920.00	484,537.28	778,031.10	32.329738	-103.567031
10,600.00	90.00	0.00	9,538.64	1,038.08	-920.00	484,637.28	778,031.10	32.330013	-103.567029
10,700.00	90.00	0.00	9,538.64	1,138.08	-920.00	484,737.28	778,031.10	32.330288	-103.567027
10,800.00	90.00	0.00	9,538.64	1,238.08	-920.00	484,837.28	778,031.10	32.330563	-103.567024
10,900.00	90.00	0.00	9,538.64	1,338.08	-920.00	484,937.28	778,031.10	32.330837	-103.567022
11,000.00	90.00	0.00	9,538.64	1,438.08	-920.00	485,037.28	778,031.10	32.331112	-103.567020
11,100.00	90.00	0.00	9,538.64	1,538.08	-920.00	485,137.28	778,031.10	32.331387	-103.567017
11,200.00	90.00	0.00	9,538.64	1,638.08	-920.00	485,237.28	778,031.10	32.331662	-103.567015
11,300.00	90.00	0.00	9,538.64	1,738.08	-920.00	485,337.28	778,031.10	32.331937	-103.567013
11,400.00	90.00	0.00	9,538.64	1,838.08	-920.00	485,437.28	778,031.10	32.332212	-103.567010
11,500.00	90.00	0.00	9,538.64	1,938.08	-920.00	485,537.28	778,031.10	32.332487	-103.567008
11,600.00	90.00	0.00	9,538.64	2,038.08	-920.00	485,637.28	778,031.10	32.332761	-103.567006
11,700.00	90.00	0.00	9,538.64	2,138.08	-920.00	485,737.28	778,031.10	32.333036	-103.567003
11,800.00	90.00	0.00	9,538.64	2,238.08	-920.00	485,837.28	778,031.10	32.333311	-103.567001
11,900.00	90.00	0.00	9,538.64	2,338.08	-920.00	485,937.28	778,031.10	32.333586	-103.566999
12,000.00	90.00	0.00	9,538.64	2,438.08	-920.00	486,037.28	778,031.10	32.333861	-103.566996
12,100.00	90.00	0.00	9,538.64	2,538.08	-920.00	486,137.28	778,031.10	32.334136	-103.566994
12,200.00	90.00	0.00	9,538.64	2,638.08	-920.00	486,237.28	778,031.10	32.334411	-103.566992
12,300.00	90.00	0.00	9,538.64	2,738.08	-920.00	486,337.28	778,031.10	32.334685	-103.566989
12,400.00	90.00	0.00	9,538.64	2,838.08	-920.00	486,437.28	778,031.10	32.334960	-103.566987
12,500.00	90.00	0.00	9,538.64	2,938.08	-920.00	486,537.28	778,031.10	32.335235	-103.566985
12,600.00	90.00	0.00	9,538.64	3,038.08	-920.00	486,637.28	778,031.10	32.335510	-103.566983
12,700.00	90.00	0.00	9,538.64	3,138.08	-920.00	486,737.28	778,031.10	32.335785	-103.566980
12,800.00	90.00	0.00	9,538.64	3,238.08	-920.00	486,837.28	778,031.10	32.336060	-103.566978
12,900.00	90.00	0.00	9,538.64	3,338.08	-920.00	486,937.27	778,031.10	32.336335	-103.566976
13,000.00	90.00	0.00	9,538.64	3,438.08	-920.00	487,037.27	778,031.10	32.336609	-103.566973
13,100.00	90.00	0.00	9,538.64	3,538.08	-920.00	487,137.27	778,031.10	32.336884	-103.566971
13,200.00	90.00	0.00	9,538.64	3,638.08	-920.00	487,237.27	778,031.10	32.337159	-103.566969
13,300.00	90.00	0.00	9,538.64	3,738.08	-920.00	487,337.27	778,031.10	32.337434	-103.566966
13,400.00	90.00	0.00	9,538.64	3,838.08	-920.00	487,437.27	778,031.10	32.337709	-103.566964
13,500.00	90.00	0.00	9,538.64	3,938.08	-920.00	487,537.27	778,031.10	32.337984	-103.566962
13,600.00	90.00	0.00	9,538.64	4,038.08	-920.00	487,637.27	778,031.10	32.338259	-103.566959
13,700.00	90.00	0.00	9,538.64	4,138.08	-920.00	487,737.27	778,031.10	32.338533	-103.566957
13,800.00	90.00	0.00	9,538.64	4,238.08	-920.00	487,837.27	778,031.10	32.338808	-103.566955
13,900.00	90.00	0.00	9,538.64	4,338.08	-920.00	487,937.27	778,031.10	32.339083	-103.566952
14,000.00	90.00	0.00	9,538.64	4,438.08	-920.00	488,037.27	778,031.10	32.339358	-103.566950
14,100.00	90.00	0.00	9,538.64	4,538.08	-920.00	488,137.27	778,031.10	32.339633	-103.566948
14,200.00	90.00	0.00	9,538.64	4,638.08	-920.00	488,237.27	778,031.10	32.339908	-103.566945
14,300.00	90.00	0.00	9,538.64	4,738.08	-920.00	488,337.27	778,031.10	32.340183	-103.566943
14,400.00	90.00	0.00	9,538.64	4,838.08	-920.00	488,437.27	778,031.10	32.340458	-103.566941
14,500.00	90.00	0.00	9,538.64	4,938.08	-920.00	488,537.27	778,031.10	32.340732	-103.566939
14,600.00	90.00	0.00	9,538.64	5,038.08	-920.00	488,637.27	778,031.10	32.341007	-103.566936
14,700.00	90.00	0.00	9,538.64	5,138.08	-920.00	488,737.27	778,031.10	32.341282	-103.566934
14,800.00	90.00	0.00	9,538.64	5,238.08	-920.00	488,837.27	778,031.10	32.341557	-103.566932
14,900.00	90.00	0.00	9,538.64	5,338.08	-920.00	488,937.27	778,031.10	32.341832	-103.566929
14,985.16	90.00	0.00	9,538.64	5,423.24	-920.00	489,022.43	778,031.10	32.342066	-103.566927
15,000.00	90.00	359.70	9,538.64	5,438.08	-920.04	489,037.27	778,031.06	32.342107	-103.566927
15,100.00	90.00	357.70	9,538.64	5,538.05	-922.30	489,137.24	778,028.80	32.342381	-103.566932
15,127.77	90.00	357.15	9,538.64	5,565.79	-923.55	489,164.98	778,027.55	32.342458	-103.566935
15,200.00	90.00	357.15	9,538.64	5,637.93	-927.14	489,237.12	778,023.96	32.342656	-103.566945
15,300.00	90.00	357.15	9,538.64	5,737.81	-932.12	489,337.00	778,018.98	32.342931	-103.566959

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well North Thistle 3-34 State 1H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3620.90ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3620.90ft
Site:	Sec 03-T23-R33E	North Reference:	Grid
Well:	North Thistle 3-34 State 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,400.00	90.00	357.15	9,538.64	5,837.68	-937.09	489,436.87	778,014.00	32.343205	-103.566973
15,500.00	90.00	357.15	9,538.64	5,937.56	-942.07	489,536.75	778,009.03	32.343480	-103.566987
15,600.00	90.00	357.15	9,538.64	6,037.44	-947.05	489,636.63	778,004.05	32.343755	-103.567001
15,700.00	90.00	357.15	9,538.64	6,137.31	-952.02	489,736.50	777,999.08	32.344029	-103.567014
15,800.00	90.00	357.15	9,538.64	6,237.19	-957.00	489,836.38	777,994.10	32.344304	-103.567028
15,900.00	90.00	357.15	9,538.64	6,337.07	-961.97	489,936.25	777,989.13	32.344578	-103.567042
16,000.00	90.00	357.15	9,538.64	6,436.94	-966.95	490,036.13	777,984.15	32.344853	-103.567056
16,100.00	90.00	357.15	9,538.64	6,536.82	-971.92	490,136.01	777,979.17	32.345128	-103.567070
16,200.00	90.00	357.15	9,538.64	6,636.69	-976.90	490,235.88	777,974.20	32.345402	-103.567083
16,300.00	90.00	357.15	9,538.64	6,736.57	-981.88	490,335.76	777,969.22	32.345677	-103.567097
16,400.00	90.00	357.15	9,538.64	6,836.45	-986.85	490,435.63	777,964.25	32.345952	-103.567111
16,500.00	90.00	357.15	9,538.64	6,936.32	-991.83	490,535.51	777,959.27	32.346226	-103.567125
16,600.00	90.00	357.15	9,538.64	7,036.20	-996.80	490,635.38	777,954.30	32.346501	-103.567139
16,700.00	90.00	357.15	9,538.64	7,136.07	-1,001.78	490,735.26	777,949.32	32.346775	-103.567152
16,800.00	90.00	357.15	9,538.64	7,235.95	-1,006.76	490,835.14	777,944.34	32.347050	-103.567166
16,900.00	90.00	357.15	9,538.64	7,335.83	-1,011.73	490,935.01	777,939.37	32.347325	-103.567180
17,000.00	90.00	357.15	9,538.64	7,435.70	-1,016.71	491,034.89	777,934.39	32.347599	-103.567194
17,100.00	90.00	357.15	9,538.64	7,535.58	-1,021.68	491,134.76	777,929.42	32.347874	-103.567208
17,200.00	90.00	357.15	9,538.64	7,635.46	-1,026.66	491,234.64	777,924.44	32.348148	-103.567221
17,300.00	90.00	357.15	9,538.64	7,735.33	-1,031.63	491,334.52	777,919.47	32.348423	-103.567235
17,400.00	90.00	357.15	9,538.64	7,835.21	-1,036.61	491,434.39	777,914.49	32.348698	-103.567249
17,500.00	90.00	357.15	9,538.64	7,935.08	-1,041.59	491,534.27	777,909.51	32.348972	-103.567263
17,600.00	90.00	357.15	9,538.64	8,034.96	-1,046.56	491,634.14	777,904.54	32.349247	-103.567277
17,700.00	90.00	357.15	9,538.64	8,134.84	-1,051.54	491,734.02	777,899.56	32.349522	-103.567290
17,800.00	90.00	357.15	9,538.64	8,234.71	-1,056.51	491,833.90	777,894.59	32.349796	-103.567304
17,900.00	90.00	357.15	9,538.64	8,334.59	-1,061.49	491,933.77	777,889.61	32.350071	-103.567318
18,000.00	90.00	357.15	9,538.64	8,434.46	-1,066.46	492,033.65	777,884.63	32.350345	-103.567332
18,100.00	90.00	357.15	9,538.64	8,534.34	-1,071.44	492,133.52	777,879.66	32.350620	-103.567346
18,200.00	90.00	357.15	9,538.64	8,634.22	-1,076.42	492,233.40	777,874.68	32.350895	-103.567359
18,300.00	90.00	357.15	9,538.64	8,734.09	-1,081.39	492,333.28	777,869.71	32.351169	-103.567373
18,400.00	90.00	357.15	9,538.64	8,833.97	-1,086.37	492,433.15	777,864.73	32.351444	-103.567387
18,500.00	90.00	357.15	9,538.64	8,933.84	-1,091.34	492,533.03	777,859.76	32.351719	-103.567401
18,600.00	90.00	357.15	9,538.64	9,033.72	-1,096.32	492,632.90	777,854.78	32.351993	-103.567415
18,700.00	90.00	357.15	9,538.64	9,133.60	-1,101.30	492,732.78	777,849.80	32.352268	-103.567428
18,800.00	90.00	357.15	9,538.64	9,233.47	-1,106.27	492,832.66	777,844.83	32.352542	-103.567442
18,900.00	90.00	357.15	9,538.64	9,333.35	-1,111.25	492,932.53	777,839.85	32.352817	-103.567456
19,000.00	90.00	357.15	9,538.64	9,433.23	-1,116.22	493,032.41	777,834.88	32.353092	-103.567470
19,100.00	90.00	357.15	9,538.64	9,533.10	-1,121.20	493,132.28	777,829.90	32.353366	-103.567484
19,200.00	90.00	357.15	9,538.64	9,632.98	-1,126.17	493,232.16	777,824.93	32.353641	-103.567497
19,300.00	90.00	357.15	9,538.64	9,732.85	-1,131.15	493,332.04	777,819.95	32.353915	-103.567511
19,400.00	90.00	357.15	9,538.64	9,832.73	-1,136.13	493,431.91	777,814.97	32.354190	-103.567525
19,500.00	90.00	357.15	9,538.64	9,932.61	-1,141.10	493,531.79	777,810.00	32.354465	-103.567539
19,600.00	90.00	357.15	9,538.64	10,032.48	-1,146.08	493,631.66	777,805.02	32.354739	-103.567553
19,700.00	90.00	357.15	9,538.64	10,132.36	-1,151.05	493,731.54	777,800.05	32.355014	-103.567566
19,779.76	90.00	357.15	9,538.64	10,212.02	-1,155.02	493,811.20	777,796.08	32.355233	-103.567577
Last Take Point @ 19780' MD, 100' FNL, 380' FWL									
19,800.00	90.00	357.15	9,538.64	10,232.23	-1,156.03	493,831.41	777,795.07	32.355289	-103.567580
19,859.76	90.00	357.15	9,538.64	10,291.92	-1,159.00	493,891.10	777,792.10	32.355453	-103.567588
PBHL; 20' FNL, 380' FWL									

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well North Thistle 3-34 State 1H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3620.90ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3620.90ft
Site:	Sec 03-T23-R33E	North Reference:	Grid
Well:	North Thistle 3-34 State 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 4		

Design Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
North Thistle 3-34 State	0.00	0.00	0.00	10,291.92	-1,159.00	493,891.10	777,792.10	32.355453	-103.567588
- plan misses target center by 9538.64ft at 19859.76ft MD (9538.64 TVD, 10291.92 N, -1159.00 E)									
- Point									
VP - North Thistle 1H	0.00	0.00	8,659.00	-188.78	-1,077.40	483,410.42	777,873.70	32.326644	-103.567567
- plan misses target center by 157.47ft at 8730.88ft MD (8660.07 TVD, -188.77 N, -919.94 E)									
- Point									

Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
9,058.85	8,988.04	-188.78	-920.00	KOP @ 9059' MD, 50' FSL, 539' FWL
9,313.37	9,233.59	-131.00	-920.00	First Take Point @ 9313' MD, 100' FSL, 360' FWL
19,779.76	9,538.64	10,212.02	-1,155.02	Last Take Point @ 19780' MD, 100' FNL, 380' FWL
19,859.76	9,538.64	10,291.92	-1,159.00	PBHL; 20' FNL, 380' FWL