

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

APPLICATION OF CIMAREX ENERGY CO.
FOR A NON-STANDARD OIL SPACING AND
PRORATION UNIT AND FOR COMPULSORY
POOLING, LEA COUNTY, NEW MEXICO.

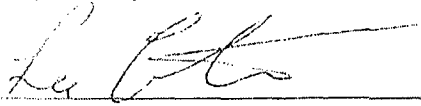
Case No. _____

AFFIDAVIT OF LEE CATALANO

COUNTY OF MIDLAND)
) ss.
STATE OF TEXAS)

Lee Catalano, being duly sworn upon his oath, deposes and states:

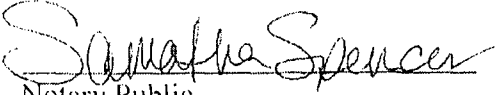
1. I am over the age of 18, and have personal knowledge of the matters stated herein.
2. I am a geologist for Cimarex Energy Co. ("Cimarex").
3. Exhibit A is a structure map on top of the Bone Spring formation. The Bone Spring formation dips to the south. Exhibit A also contains production data from existing, vertical wells in the pool.
4. Exhibit B is a cross section which shows the productive interval and stratigraphic target for horizontal Bone Spring wells in the area.
5. Attached as Exhibit C is the horizontal drilling plan for the proposed well. A horizontal wellbore will test a greater reservoir length, increasing the chances for an economic completion.
6. All four quarter-quarter sections in the well unit are prospective in the Bone Spring, and Cimarex anticipates producing reserves from each quarter-quarter section.



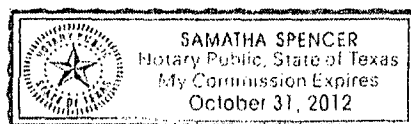
Lee Catalano

SUBSCRIBED AND SWORN TO before me this 10 day of November, 2009 by Lee Catalano.

My Commission Expires: October 31, 2009



Notary Public



Oil Conservation Division
Case No. _____
Exhibit No. 2

[illegible]

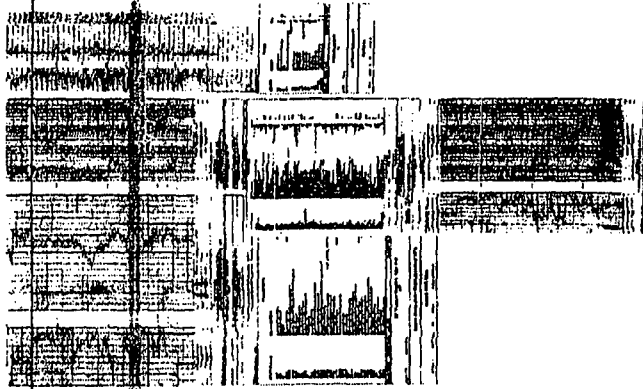
THE FIVE STATIONS OF THE CROSS

ELEV KB: 3.687
32818

CINAREX ENERGY OF COLORADO
COMP DATE: 9/25/1987
MALLON 34 FEDERAL
18

T18S R34E S34
1980 FSL 680 FWL
TARRANT, NEW, G. (GAS) 987
BONESPRINGS, W. 134 745 BBL

SBSG (GDS)



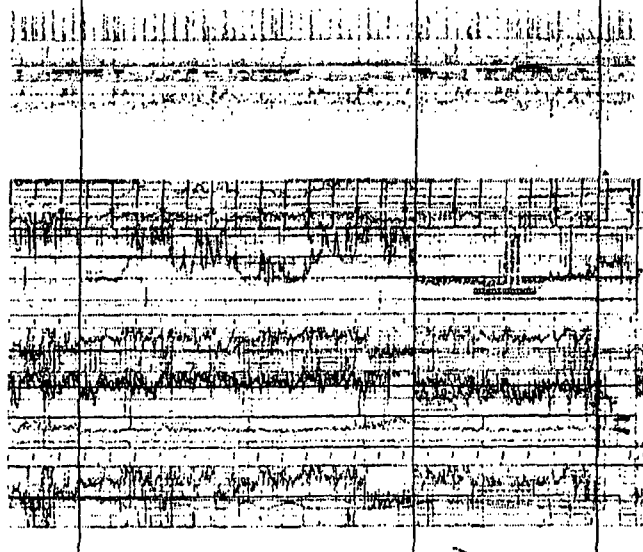
3rd Bone Spring
production interval
horizontal target

ELEV KB: 3.688
39042

SAMSON RESOURCES COMPANY
COMP DATE: 5/1/2007
EAGLE 2 STATE
3

T20S R34E S2
1980 FNL 2130 FWL
TARRANT, NEW, G. (GAS) 987
BONESPRINGS, W. 57 818 BBL

SBSG (GDS)



TBSG (GDS)

WRMP (GDS)

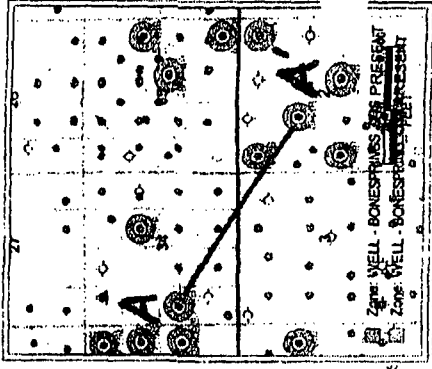


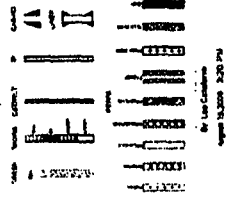
Exhibit B

CINAREX ENERGY

Structural Cross-section

Mallon 34 Fed # 16

LeaCo., NM



Cimarex Energy Co.

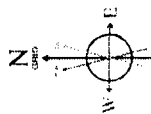
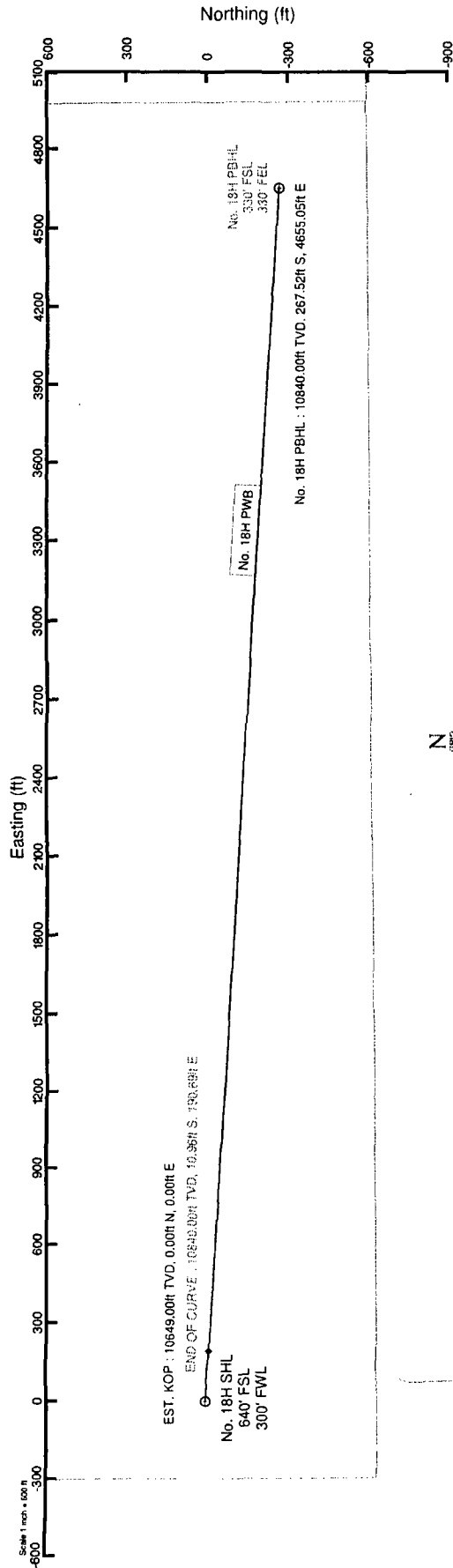
Location: Lea County, NM
Field: (Mallon) Sec 34, T19S, R34E
Facility: Mallon 34 Fed Com No. 18H

Slot: No. 18H SHL
Well: No. 18H
Wellbore: No. 18H PWB



Well Profile Data

Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (%100ft)	VS (ft)
Tie On	0.00	0.000	93.289	0.00	0.00	0.00	0.00	0.00
EST. KOP	10649.00	0.000	93.289	10649.00	0.00	0.00	0.00	0.00
END OF CURVE	10649.02	93.000	93.289	10649.00	-10.96	150.69	30.00	191.03
No. 18H PBHL	15420.76	90.000	93.289	10840.00	-267.52	4655.05	0.00	4662.73



BGM (1945.0 to 2011.0) Der: 60.61° Field: 49081 mT
Magnetic North is 7.86 degrees East of True North (at 10/7/2009)
Grid System: NAD83: TM New Mexico State Planes, Eastern Zone (2011), US feet
To correct azimuth from True to Grid add 0.42 degrees
To correct azimuth from Magnetic to Grid add 7.44 degrees
For example: if the Magnetic North Azimuth = 90 degrees, then the Grid North Azimuth = 90 + 7.44 = 97.44

Grid System: NAD83: TM New Mexico State Planes, Eastern Zone (2011), US feet
North Reference: Grid north
Scale: True distance
Depths are in feet
Created by: Victor Hernandez on 10/7/2009

Vertical Section (ft)
Azimuth 93.29° with reference 0.00 N, 0.00 E

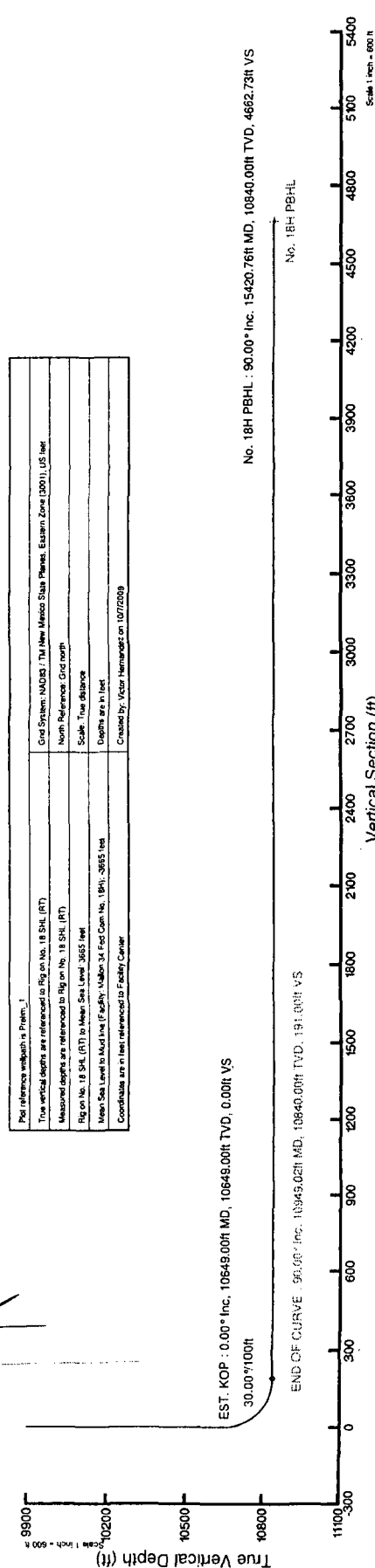


EXHIBIT C



Planned Wellpath Report

Prelim_1
Page 1 of 4



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 18H PWB
Facility	Mallon 34 Fed Com No. 18H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999975	Report Generated	10/7/2009 at 2:24:56 PM
Convergence at slot	0.42° East	Database/Source file	WA_Midland/No. 18H_PWB.xml

WELLPATH LOCATION

	Local coordinates			Grid coordinates			Geographic coordinates	
	North[ft]	East[ft]		Easting[USft]	Northing[USft]		Latitude	Longitude
Slot Location	0.00	0.00		780804.80	586972.60		32°36'40.432"N	103°33'20.286"W
Facility Reference Pt				780804.80	586972.60		32°36'40.432"N	103°33'20.286"W
Field Reference Pt				780804.80	586972.60		32°36'40.432"N	103°33'20.286"W

WELLPATH DATUM

Calculation method	Minimum curvature		Rig on No. 18 SHL (RT) to Facility Vertical Datum	0.00ft
Horizontal Reference Pt	Facility Center		Rig on No. 18 SHL (RT) to Mean Sea Level	3665.00ft
Vertical Reference Pt	Rig on No. 18 SHL (RT)		Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 18 SHL (RT)		Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level		Section Azimuth	93.29°



Planned Wellpath Report

Prelim_1
Page 2 of 4



REFERENCE WELL PATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 18H PWB
Facility	Mallon 34 Fed Com No. 18H		

WELLPATH DATA (51 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	93.289	0.00	0.00	0.00	0.00	780804.80	586972.60	32°36'40.432"N	103°33'20.286"W	0.00	Tie On
10649.00	0.000	93.289	10649.00	0.00	0.00	0.00	780804.80	586972.60	32°36'40.432"N	103°33'20.286"W	0.00	EST. KOP
10749.00†	29.998	93.289	10744.49	25.59	-1.47	25.54	780830.34	586971.13	32°36'40.416"N	103°33'19.988"W	30.00	
10849.00†	59.996	93.289	10814.40	95.49	-5.48	95.33	780900.13	586967.12	32°36'40.371"N	103°33'19.172"W	30.00	
10949.00†	89.993	93.289	10840.00	190.98	-10.96	190.66	780995.46	586961.64	32°36'40.310"N	103°33'18.058"W	30.00	
10949.02	90.000	93.289	10840.00	191.00	-10.96	190.69	780995.48	586961.64	32°36'40.310"N	103°33'18.058"W	30.00	END OF CURVE
11049.00†	90.000	93.289	10840.00	290.98	-16.69	290.50	781095.29	586955.91	32°36'40.246"N	103°33'16.892"W	0.00	
11149.00†	90.000	93.289	10840.00	390.98	-22.43	390.33	781195.12	586950.17	32°36'40.182"N	103°33'15.725"W	0.00	
11249.00†	90.000	93.289	10840.00	490.98	-28.17	490.17	781294.96	586944.43	32°36'40.118"N	103°33'14.558"W	0.00	
11349.00†	90.000	93.289	10840.00	590.98	-33.91	590.00	781394.79	586938.69	32°36'40.054"N	103°33'13.392"W	0.00	
11449.00†	90.000	93.289	10840.00	690.98	-39.64	689.84	781494.62	586932.96	32°36'39.990"N	103°33'12.225"W	0.00	
11549.00†	90.000	93.289	10840.00	790.98	-45.38	789.67	781594.45	586927.22	32°36'39.926"N	103°33'11.059"W	0.00	
11649.00†	90.000	93.289	10840.00	890.98	-51.12	889.51	781694.29	586921.48	32°36'39.862"N	103°33'09.892"W	0.00	
11749.00†	90.000	93.289	10840.00	990.98	-56.86	989.35	781794.12	586915.75	32°36'39.798"N	103°33'08.725"W	0.00	
11849.00†	90.000	93.289	10840.00	1090.98	-62.59	1089.18	781893.95	586910.01	32°36'39.734"N	103°33'07.559"W	0.00	
11949.00†	90.000	93.289	10840.00	1190.98	-68.33	1189.02	781993.78	586904.27	32°36'39.670"N	103°33'06.392"W	0.00	
12049.00†	90.000	93.289	10840.00	1290.98	-74.07	1288.85	782093.62	586898.53	32°36'39.606"N	103°33'05.226"W	0.00	
12149.00†	90.000	93.289	10840.00	1390.98	-79.81	1388.69	782193.45	586892.80	32°36'39.542"N	103°33'04.059"W	0.00	
12249.00†	90.000	93.289	10840.00	1490.98	-85.54	1488.52	782293.28	586887.06	32°36'39.478"N	103°33'02.892"W	0.00	
12349.00†	90.000	93.289	10840.00	1590.98	-91.28	1588.36	782393.11	586881.32	32°36'39.414"N	103°33'01.726"W	0.00	
12449.00†	90.000	93.289	10840.00	1690.98	-97.02	1688.19	782492.95	586875.58	32°36'39.350"N	103°33'00.559"W	0.00	
12549.00†	90.000	93.289	10840.00	1790.98	-102.76	1788.03	782592.78	586869.85	32°36'39.286"N	103°32'59.393"W	0.00	
12649.00†	90.000	93.289	10840.00	1890.98	-108.49	1887.86	782692.61	586864.11	32°36'39.222"N	103°32'58.226"W	0.00	
12749.00†	90.000	93.289	10840.00	1990.98	-114.23	1987.70	782792.44	586858.37	32°36'39.158"N	103°32'57.060"W	0.00	
12849.00†	90.000	93.289	10840.00	2090.98	-119.97	2087.53	782892.28	586852.64	32°36'39.094"N	103°32'55.893"W	0.00	
12949.00†	90.000	93.289	10840.00	2190.98	-125.71	2187.37	782992.11	586846.90	32°36'39.030"N	103°32'54.726"W	0.00	
13049.00†	90.000	93.289	10840.00	2290.98	-131.44	2287.20	783091.94	586841.16	32°36'38.966"N	103°32'53.560"W	0.00	
13149.00†	90.000	93.289	10840.00	2390.98	-137.18	2387.04	783191.77	586835.42	32°36'38.901"N	103°32'52.393"W	0.00	
13249.00†	90.000	93.289	10840.00	2490.98	-142.92	2486.87	783291.61	586829.69	32°36'38.837"N	103°32'51.227"W	0.00	
13349.00†	90.000	93.289	10840.00	2590.98	-148.66	2586.71	783391.44	586823.95	32°36'38.773"N	103°32'50.060"W	0.00	



Planned Wellpath Report

Prelim_1
Page 3 of 4



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 18H PWB
Facility	Mallon 34 Fed Com No. 18H		

WELLPATH DATA (51 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [serv ft]	Grid North [serv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13449.00†	90.000	93.289	10840.00	2690.98	-154.39	2686.55	783491.27	586818.21	32°36'38.709"N	103°32'48.893"W	0.00	
13549.00†	90.000	93.289	10840.00	2790.98	-160.13	2786.38	783591.10	586812.47	32°36'38.645"N	103°32'47.727"W	0.00	
13649.00†	90.000	93.289	10840.00	2890.98	-165.87	2886.22	783690.94	586806.74	32°36'38.581"N	103°32'46.560"W	0.00	
13749.00†	90.000	93.289	10840.00	2990.98	-171.60	2986.05	783790.77	586801.00	32°36'38.517"N	103°32'45.394"W	0.00	
13849.00†	90.000	93.289	10840.00	3090.98	-177.34	3085.89	783890.60	586795.26	32°36'38.453"N	103°32'44.227"W	0.00	
13949.00†	90.000	93.289	10840.00	3190.98	-183.08	3185.72	783990.43	586789.53	32°36'38.389"N	103°32'43.060"W	0.00	
14049.00†	90.000	93.289	10840.00	3290.98	-188.82	3285.56	784090.27	586783.79	32°36'38.325"N	103°32'41.894"W	0.00	
14149.00†	90.000	93.289	10840.00	3390.98	-194.55	3385.39	784190.10	586778.05	32°36'38.261"N	103°32'40.727"W	0.00	
14249.00†	90.000	93.289	10840.00	3490.98	-200.29	3485.23	784289.93	586772.31	32°36'38.197"N	103°32'39.561"W	0.00	
14349.00†	90.000	93.289	10840.00	3590.98	-206.03	3585.06	784389.77	586766.58	32°36'38.132"N	103°32'38.394"W	0.00	
14449.00†	90.000	93.289	10840.00	3690.98	-211.77	3684.90	784489.60	586760.84	32°36'38.068"N	103°32'37.228"W	0.00	
14549.00†	90.000	93.289	10840.00	3790.98	-217.50	3784.73	784589.43	586755.10	32°36'38.004"N	103°32'36.061"W	0.00	
14649.00†	90.000	93.289	10840.00	3890.98	-223.24	3884.57	784689.26	586749.36	32°36'37.940"N	103°32'34.894"W	0.00	
14749.00†	90.000	93.289	10840.00	3990.98	-228.98	3984.40	784789.10	586743.63	32°36'37.876"N	103°32'33.728"W	0.00	
14849.00†	90.000	93.289	10840.00	4090.98	-234.72	4084.24	784888.93	586737.89	32°36'37.812"N	103°32'32.561"W	0.00	
14949.00†	90.000	93.289	10840.00	4190.98	-240.45	4184.07	784988.76	586732.15	32°36'37.748"N	103°32'31.395"W	0.00	
15049.00†	90.000	93.289	10840.00	4290.98	-246.19	4283.91	785088.59	586726.42	32°36'37.684"N	103°32'30.228"W	0.00	
15149.00†	90.000	93.289	10840.00	4390.98	-251.93	4383.74	785188.43	586720.68	32°36'37.620"N	103°32'29.061"W	0.00	
15249.00†	90.000	93.289	10840.00	4490.98	-257.67	4483.58	785288.26	586714.94	32°36'37.555"N	103°32'27.895"W	0.00	
15349.00†	90.000	93.289	10840.00	4590.98	-263.40	4583.42	785388.09	586709.20	32°36'37.491"N	103°32'26.728"W	0.00	
15420.76	90.000	93.289	10840.00†	4662.73	-267.52	4655.05	785459.73	586705.09	32°36'37.445"N	103°32'25.891"W	0.00	No. 18H PBHL



Planned Wellpath Report

Prelim_1
Page 4 of 4



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 18H PWB
Facility	Mallon 34 Fed Com No. 18H		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 18H PBHL	15420.76	10840.00	-267.52	4655.05	785459.73	586705.09	32°36'37.445"N	103°32'25.891"W	point

SURVEY PROGRAM Ref Wellbore: No. 18H PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	15420.76	NaviTrak (Standard)		No. 18H PWB