

Anadarko
Petroleum Corporation



**BAKER
HUGHES**

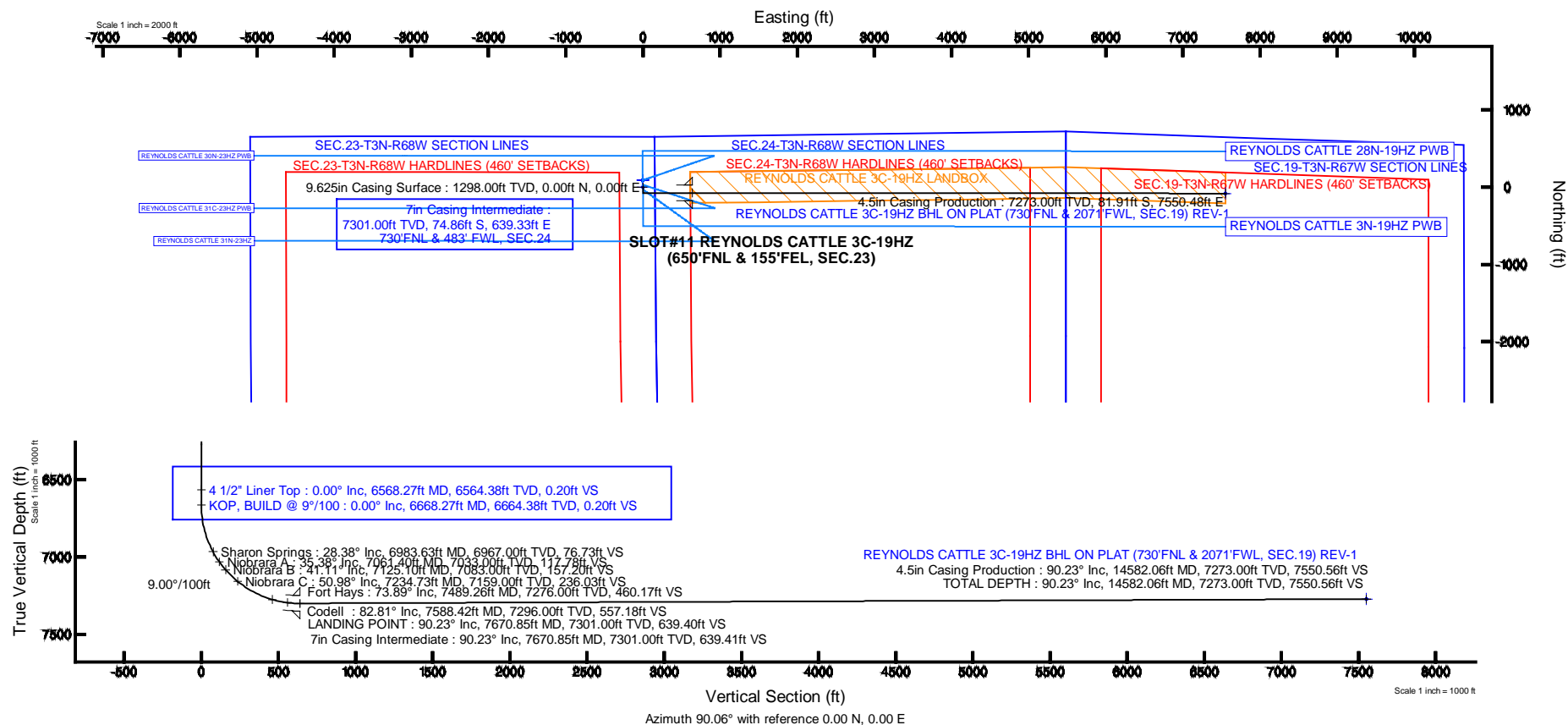
True vertical depths are referenced to PERMIT (17KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PERMIT (17KB) (RKB)	North Reference: True north
PERMIT (17KB) (RKB) to Mean Sea Level: 4948 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOTH11 REYNOLDS CATTLE 3C-19HZ (650FTNL & 155FEL, SEC.23): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: preclin on 09/Dec/2013

Facility Name				Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC 23-T3N-R68W				3147390.982	1322789.280	40°13'05.700"N	104°58'19.920"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
SLOT#11 REYNOLDS CATTLE 3C-19H2 (650FNL & 155FEL, SEC.23)	-406.38	3021.47	3150414.678	1322400.913	40°13'01.682"N	104°57'40.972"W	
PERMT (17KB) (RKB) to Mud line (A Slot: SLOT#11 REYNOLDS CATTLE 3C-19H2 (650FNL & 155FEL, SEC.23))						4948ft	
Mean Sea Level to Mud line (A Slot: SLOT#11 REYNOLDS CATTLE 3C-19H2 (650FNL & 155FEL, SEC.23))						0ft	
PERMT (17KB) (RKB) to Mean Sea Level						4948ft	

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	14582.06	NaviTrak	NaviTrak (Standard)		REYNOLDS CATTLE 3C-19HZ

Design Comment	MD (ft)	Inc (")	Az (")	TVD (ft)	Local N (ft)	Local E (ft)	DLS (/100ft)	VS (ft)
TIE-ON	17.00	0.000	179.900	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	4830.00	0.000	179.900	4830.00	0.00	0.00	0.00	0.00
END NUDGE	5230.00	8.000	179.900	5228.70	-27.88	0.05	2.00	0.08
BEGIN DROP	5362.59	8.000	179.900	5360.00	-46.33	0.08	0.00	0.13
END DROP	5762.59	0.000	90.058	5758.70	-74.21	0.13	2.00	0.20
KOP, BUILD @ 9°/100	6668.27	0.000	90.058	6664.38	-74.21	0.13	0.00	0.20
LANDING POINT	7670.85	90.232	90.058	7301.00	-74.86	639.33	9.00	639.40
TOTAL DEPTH	14582.06	90.232	90.058	7273.00	-81.91	7550.48	0.00	7550.56

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC 19- 10N 16W HARDLINES (460' SETBACKS)	0.00	89.98	-1.12	3150413.01	1322490.88	40°13'02.572"N	104°57'40.988"W	
SEC 19- 10N 16W HARDLINES (460' SETBACKS)	0.00	89.98	-1.12	3150413.01	1322490.88	40°13'02.572"N	104°57'40.988"W	
SEC 23- 10N 16W HARDLINES (460' SETBACKS)	0.00	89.98	-1.12	3150413.01	1322490.88	40°13'02.572"N	104°57'40.988"W	
SEC 23- 10N 16W SECTION LINES	0.00	89.98	-1.12	3150413.01	1322490.88	40°13'02.572"N	104°57'40.988"W	
SEC 24- 10N 16W HARDLINES (460' SETBACKS)	0.00	89.98	-1.12	3150413.01	1322490.88	40°13'02.572"N	104°57'40.988"W	
SEC 24- 10N 16W SECTION LINES	0.00	89.98	-1.12	3150413.01	1322490.88	40°13'02.572"N	104°57'40.988"W	
REYNOLDS CATTLE 3C 1942 BBL ON PLAT (730PNL & 2071WYLN, SEC 16) REV -1	14682.06	7273.00	-01.91	7650.48	1322364.87	40°13'00.862"N	104°56'03.642"W	
REYNOLDS CATTLE 3C 1942 LANDBOX	7273.00	0.00	0.00	3150414.68	1322490.91	40°13'01.682"N	104°57'40.972"W	



REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 REYNOLDS CATTLE 3C-19HZ (650'FNL & 155'FEL, SEC.23)
Area	COLORADO	Well	REYNOLDS CATTLE 3C-19HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	REYNOLDS CATTLE 3C-19HZ
Facility	SEC.23-T3N-R68W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Precain
Scale	0.999957	Report Generated	09/Dec/2013 at 15:06
Convergence at slot	n/a	Database/Source file	WellArchitectDB/REYNOLDS_CATTLE_3C-19HZ_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-406.38	3021.47	3150414.68	1322400.91	40°13'01.682"N	104°57'40.972"W
Facility Reference Pt			3147390.98	1322789.28	40°13'05.700"N	104°58'19.920"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM

Calculation method	Minimum curvature	PERMIT (17'KB) (RKB) to Facility Vertical Datum	4948.00ft
Horizontal Reference Pt	Slot	PERMIT (17'KB) (RKB) to Mean Sea Level	4948.00ft
Vertical Reference Pt	PERMIT (17'KB) (RKB)	PERMIT (17'KB) (RKB) to Mud Line at Slot (SLOT#11 REYNOLDS CATTLE 3C-19HZ (650'FNL & 155'FEL, SEC.23))	4948.00ft
MD Reference Pt	PERMIT (17'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	90.06°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 REYNOLDS CATTLE 3C-19HZ (650'FNL & 155'FEL, SEC.23)
Area	COLORADO	Well	REYNOLDS CATTLE 3C-19HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	REYNOLDS CATTLE 3C-19HZ
Facility	SEC.23-T3N-R68W		

WELLPATH DATA (164 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	179.900	0.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
17.00	0.000	179.900	17.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	TIE-ON
117.00†	0.000	179.900	117.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
217.00†	0.000	179.900	217.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
317.00†	0.000	179.900	317.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
417.00†	0.000	179.900	417.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
517.00†	0.000	179.900	517.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
617.00†	0.000	179.900	617.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
717.00†	0.000	179.900	717.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
817.00†	0.000	179.900	817.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
917.00†	0.000	179.900	917.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
1017.00†	0.000	179.900	1017.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
1117.00†	0.000	179.900	1117.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
1217.00†	0.000	179.900	1217.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
1248.00†	0.000	179.900	1248.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	Fox Hills Marker
1317.00†	0.000	179.900	1317.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
1417.00†	0.000	179.900	1417.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
1517.00†	0.000	179.900	1517.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
1617.00†	0.000	179.900	1617.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
1717.00†	0.000	179.900	1717.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
1817.00†	0.000	179.900	1817.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
1917.00†	0.000	179.900	1917.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
2017.00†	0.000	179.900	2017.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
2117.00†	0.000	179.900	2117.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
2217.00†	0.000	179.900	2217.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
2317.00†	0.000	179.900	2317.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
2417.00†	0.000	179.900	2417.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
2517.00†	0.000	179.900	2517.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
2617.00†	0.000	179.900	2617.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
2717.00†	0.000	179.900	2717.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
2817.00†	0.000	179.900	2817.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
2917.00†	0.000	179.900	2917.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
3017.00†	0.000	179.900	3017.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
3117.00†	0.000	179.900	3117.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
3217.00†	0.000	179.900	3217.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
3317.00†	0.000	179.900	3317.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
3417.00†	0.000	179.900	3417.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
3517.00†	0.000	179.900	3517.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
3617.00†	0.000	179.900	3617.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
3717.00†	0.000	179.900	3717.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
3817.00†	0.000	179.900	3817.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
3917.00†	0.000	179.900	3917.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
4017.00†	0.000	179.900	4017.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
4117.00†	0.000	179.900	4117.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
4158.00†	0.000	179.900	4158.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	Sussex

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 REYNOLDS CATTLE 3C-19HZ (650'FNL & 155'FEL, SEC.23)
Area	COLORADO	Well	REYNOLDS CATTLE 3C-19HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	REYNOLDS CATTLE 3C-19HZ
Facility	SEC.23-T3N-R68W		

WELLPATH DATA (164 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4217.00†	0.000	179.900	4217.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
4317.00†	0.000	179.900	4317.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
4417.00†	0.000	179.900	4417.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
4517.00†	0.000	179.900	4517.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
4617.00†	0.000	179.900	4617.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
4698.00†	0.000	179.900	4698.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	Shannon
4717.00†	0.000	179.900	4717.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
4817.00†	0.000	179.900	4817.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	
4830.00	0.000	179.900	4830.00	0.00	0.00	0.00	40°13'01.682"N	104°57'40.972"W	0.00	BEGIN NUDGE
4917.00†	1.740	179.900	4916.99	0.00	-1.32	0.00	40°13'01.669"N	104°57'40.972"W	2.00	
5017.00†	3.740	179.900	5016.87	0.02	-6.10	0.01	40°13'01.622"N	104°57'40.971"W	2.00	
5117.00†	5.740	179.900	5116.52	0.04	-14.36	0.03	40°13'01.540"N	104°57'40.971"W	2.00	
5217.00†	7.740	179.900	5215.82	0.07	-26.10	0.05	40°13'01.424"N	104°57'40.971"W	2.00	
5230.00	8.000	179.900	5228.70	0.08	-27.88	0.05	40°13'01.407"N	104°57'40.971"W	2.00	END NUDGE
5317.00†	8.000	179.900	5314.85	0.11	-39.99	0.07	40°13'01.287"N	104°57'40.971"W	0.00	
5362.59	8.000	179.900	5360.00	0.13	-46.33	0.08	40°13'01.225"N	104°57'40.971"W	0.00	BEGIN DROP
5417.00†	6.912	179.900	5413.95	0.15	-53.39	0.09	40°13'01.155"N	104°57'40.970"W	2.00	
5517.00†	4.912	179.900	5513.41	0.18	-63.69	0.11	40°13'01.053"N	104°57'40.970"W	2.00	
5617.00†	2.912	179.900	5613.18	0.19	-70.51	0.12	40°13'00.986"N	104°57'40.970"W	2.00	
5717.00†	0.912	179.900	5713.11	0.20	-73.85	0.13	40°13'00.953"N	104°57'40.970"W	2.00	
5762.59	0.000	90.058	5758.70	0.20	-74.21	0.13	40°13'00.949"N	104°57'40.970"W	2.00	END DROP
5817.00†	0.000	90.058	5813.11	0.20	-74.21	0.13	40°13'00.949"N	104°57'40.970"W	0.00	
5917.00†	0.000	90.058	5913.11	0.20	-74.21	0.13	40°13'00.949"N	104°57'40.970"W	0.00	
6017.00†	0.000	90.058	6013.11	0.20	-74.21	0.13	40°13'00.949"N	104°57'40.970"W	0.00	
6117.00†	0.000	90.058	6113.11	0.20	-74.21	0.13	40°13'00.949"N	104°57'40.970"W	0.00	
6217.00†	0.000	90.058	6213.11	0.20	-74.21	0.13	40°13'00.949"N	104°57'40.970"W	0.00	
6317.00†	0.000	90.058	6313.11	0.20	-74.21	0.13	40°13'00.949"N	104°57'40.970"W	0.00	
6417.00†	0.000	90.058	6413.11	0.20	-74.21	0.13	40°13'00.949"N	104°57'40.970"W	0.00	
6517.00†	0.000	90.058	6513.11	0.20	-74.21	0.13	40°13'00.949"N	104°57'40.970"W	0.00	
6568.27†	0.000	90.058	6564.38	0.20	-74.21	0.13	40°13'00.949"N	104°57'40.970"W	0.00	4 1/2" Liner Top
6617.00†	0.000	90.058	6613.11	0.20	-74.21	0.13	40°13'00.949"N	104°57'40.970"W	0.00	
6668.27	0.000	90.058	6664.38	0.20	-74.21	0.13	40°13'00.949"N	104°57'40.970"W	0.00	KOP, BUILD @ 9°/100
6717.00†	4.386	90.058	6713.07	2.07	-74.21	1.99	40°13'00.949"N	104°57'40.946"W	9.00	
6817.00†	13.386	90.058	6811.76	17.50	-74.23	17.42	40°13'00.949"N	104°57'40.747"W	9.00	
6917.00†	22.386	90.058	6906.83	48.18	-74.26	48.10	40°13'00.949"N	104°57'40.352"W	9.00	
6983.63†	28.382	90.058	6967.00	76.73	-74.29	76.65	40°13'00.948"N	104°57'39.983"W	9.00	Sharon Springs
7017.00†	31.386	90.058	6995.93	93.35	-74.31	93.28	40°13'00.948"N	104°57'39.769"W	9.00	
7061.40†	35.382	90.058	7033.00	117.78	-74.33	117.71	40°13'00.948"N	104°57'39.454"W	9.00	Niobrara A
7117.00†	40.386	90.058	7076.87	151.91	-74.37	151.84	40°13'00.948"N	104°57'39.014"W	9.00	
7125.10†	41.114	90.058	7083.00	157.20	-74.37	157.12	40°13'00.947"N	104°57'38.946"W	9.00	Niobrara B
7217.00†	49.386	90.058	7147.65	222.41	-74.44	222.33	40°13'00.947"N	104°57'38.106"W	9.00	
7234.73†	50.982	90.058	7159.00	236.03	-74.45	235.95	40°13'00.947"N	104°57'37.930"W	9.00	Niobrara C
7317.00†	58.386	90.058	7206.53	303.11	-74.52	303.04	40°13'00.946"N	104°57'37.065"W	9.00	
7417.00†	67.386	90.058	7252.05	392.03	-74.61	391.95	40°13'00.945"N	104°57'35.919"W	9.00	
7489.26†	73.889	90.058	7276.00	460.17	-74.68	460.09	40°13'00.944"N	104°57'35.041"W	9.00	Fort Hays

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 REYNOLDS CATTLE 3C-19HZ (650'FNL & 155'FEL, SEC.23)
Area	COLORADO	Well	REYNOLDS CATTLE 3C-19HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	REYNOLDS CATTLE 3C-19HZ
Facility	SEC.23-T3N-R68W		

WELLPATH DATA (164 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7517.00†	76.386	90.058	7283.11	486.98	-74.71	486.90	40°13'00.944"N	104°57'34.695"W	9.00	
7588.42†	82.814	90.058	7296.00	557.18	-74.78	557.11	40°13'00.943"N	104°57'33.790"W	9.00	Codell
7617.00†	85.386	90.058	7298.94	585.61	-74.81	585.54	40°13'00.943"N	104°57'33.424"W	9.00	
7670.85	90.232	90.058	7301.00	639.40	-74.86	639.33	40°13'00.943"N	104°57'32.730"W	9.00	LANDING POINT
7717.00†	90.232	90.058	7300.81	685.56	-74.91	685.48	40°13'00.942"N	104°57'32.135"W	0.00	
7817.00†	90.232	90.058	7300.40	785.55	-75.01	785.48	40°13'00.941"N	104°57'30.846"W	0.00	
7917.00†	90.232	90.058	7300.00	885.55	-75.12	885.48	40°13'00.940"N	104°57'29.557"W	0.00	
8017.00†	90.232	90.058	7299.59	985.55	-75.22	985.48	40°13'00.939"N	104°57'28.268"W	0.00	
8117.00†	90.232	90.058	7299.19	1085.55	-75.32	1085.48	40°13'00.938"N	104°57'26.979"W	0.00	
8217.00†	90.232	90.058	7298.78	1185.55	-75.42	1185.48	40°13'00.937"N	104°57'25.690"W	0.00	
8317.00†	90.232	90.058	7298.38	1285.55	-75.52	1285.47	40°13'00.936"N	104°57'24.401"W	0.00	
8417.00†	90.232	90.058	7297.97	1385.55	-75.62	1385.47	40°13'00.935"N	104°57'23.112"W	0.00	
8517.00†	90.232	90.058	7297.57	1485.55	-75.73	1485.47	40°13'00.934"N	104°57'21.823"W	0.00	
8617.00†	90.232	90.058	7297.16	1585.55	-75.83	1585.47	40°13'00.933"N	104°57'20.534"W	0.00	
8717.00†	90.232	90.058	7296.76	1685.55	-75.93	1685.47	40°13'00.931"N	104°57'19.245"W	0.00	
8817.00†	90.232	90.058	7296.35	1785.55	-76.03	1785.47	40°13'00.930"N	104°57'17.956"W	0.00	
8917.00†	90.232	90.058	7295.95	1885.55	-76.13	1885.47	40°13'00.929"N	104°57'16.667"W	0.00	
9017.00†	90.232	90.058	7295.54	1985.54	-76.24	1985.47	40°13'00.928"N	104°57'15.378"W	0.00	
9117.00†	90.232	90.058	7295.14	2085.54	-76.34	2085.47	40°13'00.927"N	104°57'14.089"W	0.00	
9217.00†	90.232	90.058	7294.73	2185.54	-76.44	2185.47	40°13'00.926"N	104°57'12.800"W	0.00	
9317.00†	90.232	90.058	7294.33	2285.54	-76.54	2285.47	40°13'00.925"N	104°57'11.511"W	0.00	
9417.00†	90.232	90.058	7293.92	2385.54	-76.64	2385.46	40°13'00.924"N	104°57'10.222"W	0.00	
9517.00†	90.232	90.058	7293.52	2485.54	-76.75	2485.46	40°13'00.923"N	104°57'08.933"W	0.00	
9617.00†	90.232	90.058	7293.11	2585.54	-76.85	2585.46	40°13'00.922"N	104°57'07.644"W	0.00	
9717.00†	90.232	90.058	7292.71	2685.54	-76.95	2685.46	40°13'00.921"N	104°57'06.355"W	0.00	
9817.00†	90.232	90.058	7292.30	2785.54	-77.05	2785.46	40°13'00.919"N	104°57'05.066"W	0.00	
9917.00†	90.232	90.058	7291.90	2885.54	-77.15	2885.46	40°13'00.918"N	104°57'03.777"W	0.00	
10017.00†	90.232	90.058	7291.49	2985.54	-77.26	2985.46	40°13'00.917"N	104°57'02.487"W	0.00	
10117.00†	90.232	90.058	7291.09	3085.54	-77.36	3085.46	40°13'00.916"N	104°57'01.198"W	0.00	
10217.00†	90.232	90.058	7290.68	3185.53	-77.46	3185.46	40°13'00.915"N	104°56'59.909"W	0.00	
10317.00†	90.232	90.058	7290.28	3285.53	-77.56	3285.46	40°13'00.914"N	104°56'58.620"W	0.00	
10417.00†	90.232	90.058	7289.87	3385.53	-77.66	3385.46	40°13'00.913"N	104°56'57.331"W	0.00	
10517.00†	90.232	90.058	7289.47	3485.53	-77.77	3485.46	40°13'00.912"N	104°56'56.042"W	0.00	
10617.00†	90.232	90.058	7289.06	3585.53	-77.87	3585.45	40°13'00.910"N	104°56'54.753"W	0.00	
10717.00†	90.232	90.058	7288.66	3685.53	-77.97	3685.45	40°13'00.909"N	104°56'53.464"W	0.00	
10817.00†	90.232	90.058	7288.25	3785.53	-78.07	3785.45	40°13'00.908"N	104°56'52.175"W	0.00	
10917.00†	90.232	90.058	7287.85	3885.53	-78.17	3885.45	40°13'00.907"N	104°56'50.886"W	0.00	
11017.00†	90.232	90.058	7287.44	3985.53	-78.28	3985.45	40°13'00.906"N	104°56'49.597"W	0.00	
11117.00†	90.232	90.058	7287.04	4085.53	-78.38	4085.45	40°13'00.905"N	104°56'48.308"W	0.00	
11217.00†	90.232	90.058	7286.63	4185.53	-78.48	4185.45	40°13'00.903"N	104°56'47.019"W	0.00	
11317.00†	90.232	90.058	7286.23	4285.53	-78.58	4285.45	40°13'00.902"N	104°56'45.730"W	0.00	
11417.00†	90.232	90.058	7285.82	4385.52	-78.68	4385.45	40°13'00.901"N	104°56'44.441"W	0.00	
11517.00†	90.232	90.058	7285.42	4485.52	-78.78	4485.45	40°13'00.900"N	104°56'43.152"W	0.00	
11617.00†	90.232	90.058	7285.01	4585.52	-78.89	4585.45	40°13'00.899"N	104°56'41.863"W	0.00	
11717.00†	90.232	90.058	7284.61	4685.52	-78.99	4685.44	40°13'00.897"N	104°56'40.574"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 REYNOLDS CATTLE 3C-19HZ (650'FNL & 155'FEL, SEC.23)
Area	COLORADO	Well	REYNOLDS CATTLE 3C-19HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	REYNOLDS CATTLE 3C-19HZ
Facility	SEC.23-T3N-R68W		

WELLPATH DATA (164 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11817.00†	90.232	90.058	7284.20	4785.52	-79.09	4785.44	40°13'00.896"N	104°56'39.285"W	0.00	
11917.00†	90.232	90.058	7283.80	4885.52	-79.19	4885.44	40°13'00.895"N	104°56'37.996"W	0.00	
12017.00†	90.232	90.058	7283.39	4985.52	-79.29	4985.44	40°13'00.894"N	104°56'36.707"W	0.00	
12117.00†	90.232	90.058	7282.99	5085.52	-79.40	5085.44	40°13'00.893"N	104°56'35.418"W	0.00	
12217.00†	90.232	90.058	7282.58	5185.52	-79.50	5185.44	40°13'00.891"N	104°56'34.129"W	0.00	
12317.00†	90.232	90.058	7282.18	5285.52	-79.60	5285.44	40°13'00.890"N	104°56'32.840"W	0.00	
12417.00†	90.232	90.058	7281.77	5385.52	-79.70	5385.44	40°13'00.889"N	104°56'31.551"W	0.00	
12517.00†	90.232	90.058	7281.37	5485.52	-79.80	5485.44	40°13'00.888"N	104°56'30.261"W	0.00	
12617.00†	90.232	90.058	7280.96	5585.52	-79.91	5585.44	40°13'00.887"N	104°56'28.972"W	0.00	
12717.00†	90.232	90.058	7280.56	5685.51	-80.01	5685.44	40°13'00.885"N	104°56'27.683"W	0.00	
12817.00†	90.232	90.058	7280.15	5785.51	-80.11	5785.44	40°13'00.884"N	104°56'26.394"W	0.00	
12917.00†	90.232	90.058	7279.74	5885.51	-80.21	5885.43	40°13'00.883"N	104°56'25.105"W	0.00	
13017.00†	90.232	90.058	7279.34	5985.51	-80.31	5985.43	40°13'00.882"N	104°56'23.816"W	0.00	
13117.00†	90.232	90.058	7278.93	6085.51	-80.42	6085.43	40°13'00.880"N	104°56'22.527"W	0.00	
13217.00†	90.232	90.058	7278.53	6185.51	-80.52	6185.43	40°13'00.879"N	104°56'21.238"W	0.00	
13317.00†	90.232	90.058	7278.12	6285.51	-80.62	6285.43	40°13'00.878"N	104°56'19.949"W	0.00	
13417.00†	90.232	90.058	7277.72	6385.51	-80.72	6385.43	40°13'00.877"N	104°56'18.660"W	0.00	
13517.00†	90.232	90.058	7277.31	6485.51	-80.82	6485.43	40°13'00.875"N	104°56'17.371"W	0.00	
13617.00†	90.232	90.058	7276.91	6585.51	-80.93	6585.43	40°13'00.874"N	104°56'16.082"W	0.00	
13717.00†	90.232	90.058	7276.50	6685.51	-81.03	6685.43	40°13'00.873"N	104°56'14.793"W	0.00	
13817.00†	90.232	90.058	7276.10	6785.51	-81.13	6785.43	40°13'00.871"N	104°56'13.504"W	0.00	
13917.00†	90.232	90.058	7275.69	6885.50	-81.23	6885.43	40°13'00.870"N	104°56'12.215"W	0.00	
14017.00†	90.232	90.058	7275.29	6985.50	-81.33	6985.42	40°13'00.869"N	104°56'10.926"W	0.00	
14117.00†	90.232	90.058	7274.88	7085.50	-81.44	7085.42	40°13'00.868"N	104°56'09.637"W	0.00	
14217.00†	90.232	90.058	7274.48	7185.50	-81.54	7185.42	40°13'00.866"N	104°56'08.348"W	0.00	
14317.00†	90.232	90.058	7274.07	7285.50	-81.64	7285.42	40°13'00.865"N	104°56'07.059"W	0.00	
14417.00†	90.232	90.058	7273.67	7385.50	-81.74	7385.42	40°13'00.864"N	104°56'05.770"W	0.00	
14517.00†	90.232	90.058	7273.26	7485.50	-81.84	7485.42	40°13'00.862"N	104°56'04.481"W	0.00	
14582.06	90.232	90.058	7273.00 [†]	7550.56	-81.91	7550.48	40°13'00.862"N	104°56'03.642"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS -									
Ref Wellbore: REYNOLDS CATTLE 3C-19HZ				Ref Wellpath: REYNOLDS CATTLE 3C-19HZ (PERMIT REV-1) PWP					
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
13.5in Open Hole	17.00	1298.00	1281.00	17.00	1298.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	17.00	1298.00	1281.00	17.00	1298.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1298.00	7670.85	6372.85	1298.00	7301.00	0.00	0.00	-74.86	639.33
7in Casing Intermediate	17.00	7670.85	7653.85	17.00	7301.00	0.00	0.00	-74.86	639.33
6.125in Open Hole	7670.85	14582.06	6911.21	7301.00	7273.00	-74.86	639.33	-81.91	7550.48
4.5in Casing Production	17.00	14582.06	14565.06	17.00	7273.00	0.00	0.00	-81.91	7550.48

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 REYNOLDS CATTLE 3C-19HZ (650'FNL & 155'FEL, SEC.23)
Area	COLORADO	Well	REYNOLDS CATTLE 3C-19HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	REYNOLDS CATTLE 3C-19HZ
Facility	SEC.23-T3N-R68W		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.19-T3N-R67W HARDLINES (460' SETBACKS)		0.00	89.98	-1.12	3150413.01	1322490.88	40°13'02.572"N	104°57'40.986"W	polygon
SEC.19-T3N-R67W SECTION LINES		0.00	89.98	-1.12	3150413.01	1322490.88	40°13'02.572"N	104°57'40.986"W	polygon
SEC.23-T3N-R68W HARDLINES (460' SETBACKS)		0.00	89.98	-1.12	3150413.01	1322490.88	40°13'02.572"N	104°57'40.986"W	polygon
SEC.23-T3N-R68W SECTION LINES		0.00	89.98	-1.12	3150413.01	1322490.88	40°13'02.572"N	104°57'40.986"W	polygon
SEC.24-T3N-R68W HARDLINES (460' SETBACKS)		0.00	89.98	-1.12	3150413.01	1322490.88	40°13'02.572"N	104°57'40.986"W	polygon
SEC.24-T3N-R68W SECTION LINES		0.00	89.98	-1.12	3150413.01	1322490.88	40°13'02.572"N	104°57'40.986"W	polygon
1) REYNOLDS CATTLE 3C-19HZ BHL ON PLAT (730'FNL & 2071'FWL, SEC.19) REV-1	14582.06	7273.00	-81.91	7550.48	3157965.18	1322364.87	40°13'00.862"N	104°56'03.642"W	point
REYNOLDS CATTLE 3C-19HZ LANDBOX		7273.00	0.00	0.00	3150414.68	1322400.91	40°13'01.682"N	104°57'40.972"W	polygon

SURVEY PROGRAM - Ref Wellbore: REYNOLDS CATTLE 3C-19HZ					Ref Wellpath: REYNOLDS CATTLE 3C-19HZ (PERMIT REV-1) PWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model		Log Name/Comment		Wellbore
17.00	14582.06	NaviTrak (Standard)				REYNOLDS CATTLE 3C-19HZ

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 REYNOLDS CATTLE 3C-19HZ (650'FNL & 155'FEL, SEC.23)
Area	COLORADO	Well	REYNOLDS CATTLE 3C-19HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	REYNOLDS CATTLE 3C-19HZ
Facility	SEC.23-T3N-R68W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1248.00	0.000	179.900	1248.00	Fox Hills Marker
4158.00	0.000	179.900	4158.00	Sussex
4698.00	0.000	179.900	4698.00	Shannon
6568.27	0.000	90.058	6564.38	4 1/2" Liner Top
6983.63	28.382	90.058	6967.00	Sharon Springs
7061.40	35.382	90.058	7033.00	Niobrara A
7125.10	41.114	90.058	7083.00	Niobrara B
7234.73	50.982	90.058	7159.00	Niobrara C
7489.26	73.889	90.058	7276.00	Fort Hays
7588.42	82.814	90.058	7296.00	Codell

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	179.900	17.00	TIE-ON
4830.00	0.000	179.900	4830.00	BEGIN NUDGE
5230.00	8.000	179.900	5228.70	END NUDGE
5362.59	8.000	179.900	5360.00	BEGIN DROP
5762.59	0.000	90.058	5758.70	END DROP
6668.27	0.000	90.058	6664.38	KOP, BUILD @ 9°/100
7670.85	90.232	90.058	7301.00	LANDING POINT
14582.06	90.232	90.058	7273.00	TOTAL DEPTH