

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)
Field: WELD COUNTY (KERR MCGEE) Well: MORNING FRESH 29C-15HZ
Facility: SEC.22-T3N-R66W Wellbore: MORNING FRESH 29C-15HZ pwb

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	17.00	0.000	22.000	17.00	0.00	0.00	0.00	0.00
End of Tangent	1037.00	0.000	22.000	1037.00	0.00	0.00	0.00	0.00
End of Build	1212.00	3.500	22.000	1211.89	4.95	2.00	2.00	5.02
End of Tangent	6842.30	3.500	22.000	6831.69	323.65	130.76	0.00	327.68
End of 3D Arc (J)	7708.20	89.841	0.288	7372.01	894.02	145.82	10.00	898.25
End of Tangent (J)	12025.57	89.841	0.288	7384.00	5211.33	167.53	0.00	5214.02

Location Information

Facility Name				Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.22-T3N-R66W				3204544.215	1321607.091	40°12'50.004"N	104°46'03.288"W
Shot	Local N (ft)	Local E (ft)		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)	1010.23	332.03		3204887.873	1322619.981	40°12'59.987"N	104°46'59.008"W
Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (R#0) to Mud line (At Slot: SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22))							4901ft
Mean Sea Level to Mud line (At Slot: SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22))							0ft
Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (R#0) to Mean Sea Level							4901ft

Targets

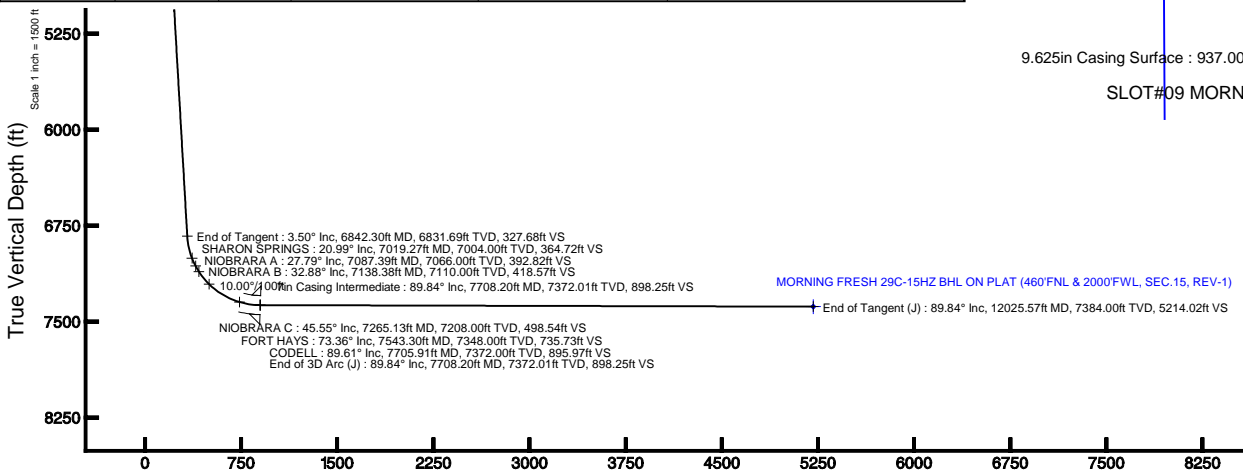
Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
MORNING FRESH 3 PAD SECTION 15 SECTION LINES		0.00	0.00	0.00	3204887.87	1322619.98	40°12'59.987"N	104°45'59.008"W
MORNING FRESH 3 PAD SECTION 22 SECTION LINES		0.00	0.00	0.00	3204887.87	1322619.98	40°12'59.987"N	104°45'59.008"W
MORNING FRESH 29C-15HZ BHL ON PLAT (460'FNL & 2000'FWL, SEC.15, REV-1)	12025.57	7384.00	5211.33	167.53	3204992.28	13217932.28	40°13'51.485"N	104°45'56.848"W
MORNING FRESH 3 PAD SECTION 15 HARDLINES (460' SETBACKS)		7384.00	0.00	0.00	3204887.87	1322619.98	40°12'59.987"N	104°45'59.008"W
MORNING FRESH 3 PAD SECTION 22 HARDLINES (460' SETBACKS)		7384.00	0.00	0.00	3204887.87	1322619.98	40°12'59.987"N	104°45'59.008"W

Plot reference wellpath is MORNING FRESH 29C-15HZ (PERMIT) PWP

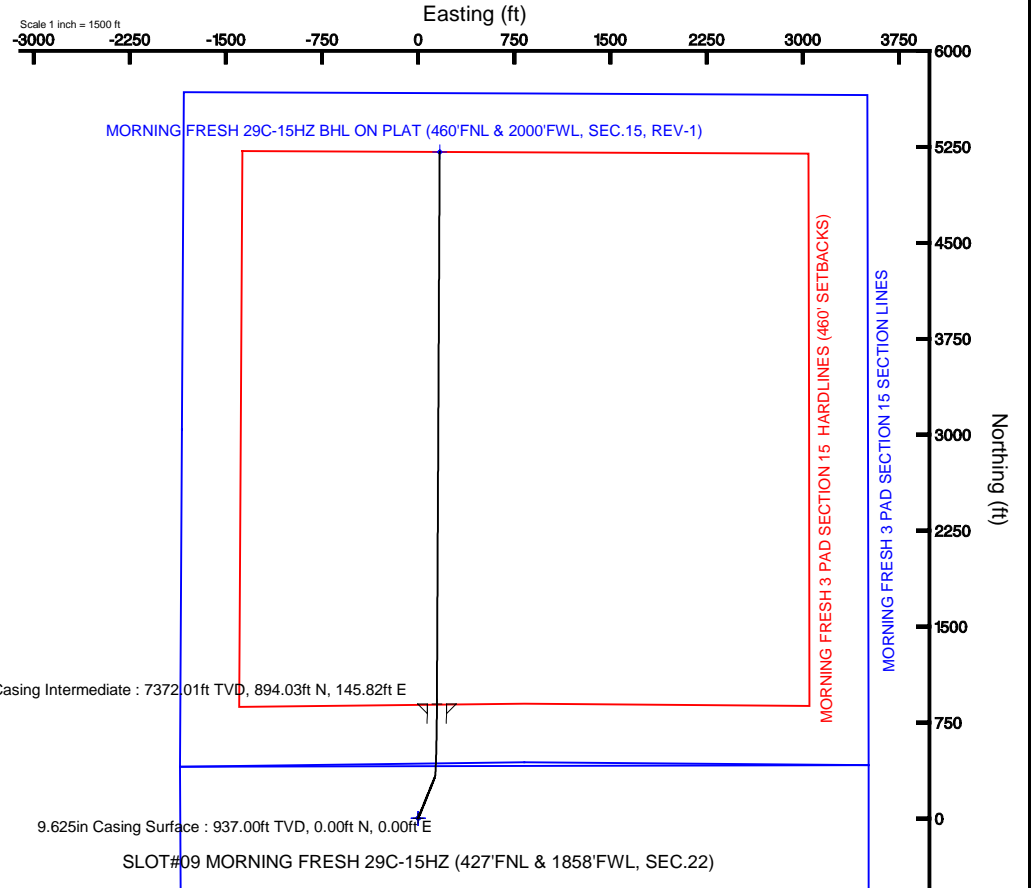
True vertical depths are referenced to Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (RKB)	North Reference: True north
Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) to Mean Sea Level: 4901 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: cookdarn on 9/18/2012

Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	12025.57	NaviTrak	NaviTrak (Standard)		MORNING FRESH 29C-15HZ pwb



Azimuth 1.84° with reference 0.00 N, 0.00 E



BGGM (1945.0 to 2014.0) Dip: 66.84° Field: 52825.1 nT
Magnetic North is 8.73 degrees East of True North (at 9/14/2012)

To correct azimuth from Magnetic to True add 8.73 degrees
For example: if the Magnetic North Azimuth = 90 degs, then the True North Azimuth = 90 + 8.73 = 98.73



Planned Wellpath Report

MORNING FRESH 29C-15HZ (PERMIT) PWP

Page 1 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)
Area	COLORADO	Well	MORNING FRESH 29C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	MORNING FRESH 29C-15HZ pwb
Facility	SEC.22-T3N-R66W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Cookdannm
Scale	0.999957	Report Generated	9/18/2012 at 12:12:12 PM
Convergence at slot	0.47° East	Database/Source file	WA_ANADARKO/MORNING_FRESH_29C-15HZ_pwb.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	1010.23	332.03	3204867.87	1322619.98	40°12'59.987"N	104°45'59.008"W
Facility Reference Pt			3204544.22	1321607.09	40°12'50.004"N	104°46'03.288"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM		
Calculation method	Minimum curvature	Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (RKB) to Facility Vertical Datum
Horizontal Reference Pt	Slot	Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (RKB) to Mean Sea Level
Vertical Reference Pt	Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (RKB)	Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (RKB) to Mud Line at Slot (SLO)
MD Reference Pt	Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (RKB)	Section Origin
Field Vertical Reference	Mean Sea Level	Section Azimuth

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)
Area	COLORADO	Well	MORNING FRESH 29C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	MORNING FRESH 29C-15HZ pwb
Facility	SEC.22-T3N-R66W		

WELLPATH DATA (136 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00†	0.000	22.000	0.00	0.00	0.00	0.00	0.00	
17.00	0.000	22.000	17.00	0.00	0.00	0.00	0.00	Tie On
117.00†	0.000	22.000	117.00	0.00	0.00	0.00	0.00	
217.00†	0.000	22.000	217.00	0.00	0.00	0.00	0.00	
317.00†	0.000	22.000	317.00	0.00	0.00	0.00	0.00	
417.00†	0.000	22.000	417.00	0.00	0.00	0.00	0.00	
517.00†	0.000	22.000	517.00	0.00	0.00	0.00	0.00	
617.00†	0.000	22.000	617.00	0.00	0.00	0.00	0.00	
717.00†	0.000	22.000	717.00	0.00	0.00	0.00	0.00	
751.00†	0.000	22.000	751.00	0.00	0.00	0.00	0.00	FOX HILLS
817.00†	0.000	22.000	817.00	0.00	0.00	0.00	0.00	
917.00†	0.000	22.000	917.00	0.00	0.00	0.00	0.00	
1017.00†	0.000	22.000	1017.00	0.00	0.00	0.00	0.00	
1037.00	0.000	22.000	1037.00	0.00	0.00	0.00	0.00	End of Tangent
1117.00†	1.600	22.000	1116.99	1.05	1.04	0.42	2.00	
1212.00	3.500	22.000	1211.89	5.02	4.95	2.00	2.00	End of Build
1217.00†	3.500	22.000	1216.88	5.30	5.24	2.12	0.00	
1317.00†	3.500	22.000	1316.70	11.03	10.90	4.40	0.00	
1417.00†	3.500	22.000	1416.51	16.76	16.56	6.69	0.00	
1517.00†	3.500	22.000	1516.32	22.50	22.22	8.98	0.00	
1617.00†	3.500	22.000	1616.14	28.23	27.88	11.26	0.00	
1717.00†	3.500	22.000	1715.95	33.96	33.54	13.55	0.00	
1817.00†	3.500	22.000	1815.76	39.69	39.20	15.84	0.00	
1917.00†	3.500	22.000	1915.58	45.42	44.86	18.12	0.00	
2017.00†	3.500	22.000	2015.39	51.15	50.52	20.41	0.00	
2117.00†	3.500	22.000	2115.20	56.88	56.18	22.70	0.00	
2217.00†	3.500	22.000	2215.02	62.61	61.84	24.99	0.00	
2317.00†	3.500	22.000	2314.83	68.34	67.50	27.27	0.00	
2417.00†	3.500	22.000	2414.64	74.07	73.16	29.56	0.00	
2517.00†	3.500	22.000	2514.46	79.80	78.82	31.85	0.00	
2617.00†	3.500	22.000	2614.27	85.53	84.48	34.13	0.00	
2717.00†	3.500	22.000	2714.08	91.27	90.14	36.42	0.00	
2817.00†	3.500	22.000	2813.90	97.00	95.80	38.71	0.00	
2917.00†	3.500	22.000	2913.71	102.73	101.46	40.99	0.00	
3017.00†	3.500	22.000	3013.52	108.46	107.12	43.28	0.00	
3117.00†	3.500	22.000	3113.34	114.19	112.78	45.57	0.00	
3217.00†	3.500	22.000	3213.15	119.92	118.44	47.85	0.00	
3317.00†	3.500	22.000	3312.96	125.65	124.10	50.14	0.00	
3417.00†	3.500	22.000	3412.78	131.38	129.76	52.43	0.00	
3517.00†	3.500	22.000	3512.59	137.11	135.42	54.72	0.00	
3617.00†	3.500	22.000	3612.41	142.84	141.09	57.00	0.00	
3717.00†	3.500	22.000	3712.22	148.57	146.75	59.29	0.00	
3817.00†	3.500	22.000	3812.03	154.31	152.41	61.58	0.00	
3917.00†	3.500	22.000	3911.85	160.04	158.07	63.86	0.00	
3938.19†	3.500	22.000	3933.00	161.25	159.27	64.35	0.00	PARKMAN

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)
Area	COLORADO	Well	MORNING FRESH 29C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	MORNING FRESH 29C-15HZ pwb
Facility	SEC.22-T3N-R66W		

WELLPATH DATA (136 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
4017.00†	3.500	22.000	4011.66	165.77	163.73	66.15	0.00	
4117.00†	3.500	22.000	4111.47	171.50	169.39	68.44	0.00	
4217.00†	3.500	22.000	4211.29	177.23	175.05	70.72	0.00	
4317.00†	3.500	22.000	4311.10	182.96	180.71	73.01	0.00	
4417.00†	3.500	22.000	4410.91	188.69	186.37	75.30	0.00	
4432.11†	3.500	22.000	4426.00	189.56	187.22	75.64	0.00	SUSSEX
4517.00†	3.500	22.000	4510.73	194.42	192.03	77.58	0.00	
4617.00†	3.500	22.000	4610.54	200.15	197.69	79.87	0.00	
4717.00†	3.500	22.000	4710.35	205.88	203.35	82.16	0.00	
4817.00†	3.500	22.000	4810.17	211.61	209.01	84.45	0.00	
4917.00†	3.500	22.000	4909.98	217.35	214.67	86.73	0.00	
5017.00†	3.500	22.000	5009.79	223.08	220.33	89.02	0.00	
5117.00†	3.500	22.000	5109.61	228.81	225.99	91.31	0.00	
5217.00†	3.500	22.000	5209.42	234.54	231.65	93.59	0.00	
5317.00†	3.500	22.000	5309.23	240.27	237.31	95.88	0.00	
5417.00†	3.500	22.000	5409.05	246.00	242.97	98.17	0.00	
5517.00†	3.500	22.000	5508.86	251.73	248.63	100.45	0.00	
5617.00†	3.500	22.000	5608.67	257.46	254.29	102.74	0.00	
5717.00†	3.500	22.000	5708.49	263.19	259.95	105.03	0.00	
5817.00†	3.500	22.000	5808.30	268.92	265.61	107.31	0.00	
5917.00†	3.500	22.000	5908.12	274.65	271.27	109.60	0.00	
6017.00†	3.500	22.000	6007.93	280.38	276.93	111.89	0.00	
6117.00†	3.500	22.000	6107.74	286.12	282.59	114.18	0.00	
6217.00†	3.500	22.000	6207.56	291.85	288.25	116.46	0.00	
6317.00†	3.500	22.000	6307.37	297.58	293.91	118.75	0.00	
6417.00†	3.500	22.000	6407.18	303.31	299.57	121.04	0.00	
6517.00†	3.500	22.000	6507.00	309.04	305.23	123.32	0.00	
6617.00†	3.500	22.000	6606.81	314.77	310.89	125.61	0.00	
6717.00†	3.500	22.000	6706.62	320.50	316.56	127.90	0.00	
6817.00†	3.500	22.000	6806.44	326.23	322.22	130.18	0.00	
6842.30	3.500	22.000	6831.69	327.68	323.65	130.76	0.00	End of Tangent
6917.00†	10.799	7.099	6905.76	336.80	332.72	132.48	10.00	
7017.00†	20.760	3.707	7001.88	363.91	359.77	134.79	10.00	
7019.27†	20.987	3.667	7004.00	364.72	360.58	134.84	10.00	SHARON SPRINGS
7087.39†	27.788	2.746	7066.00	392.82	388.64	136.39	10.00	NIOBRARA A
7117.00†	30.746	2.465	7091.83	407.30	403.10	137.04	10.00	
7138.38†	32.882	2.291	7110.00	418.57	414.37	137.51	10.00	NIOBRARA B
7217.00†	40.738	1.790	7172.89	465.64	461.40	139.17	10.00	
7265.13†	45.549	1.557	7208.00	498.54	494.29	140.13	10.00	NIOBRARA C
7317.00†	50.733	1.345	7242.60	537.16	532.90	141.10	10.00	
7417.00†	60.730	1.011	7298.84	619.69	615.42	142.78	10.00	
7517.00†	70.726	0.738	7339.89	710.72	706.45	144.16	10.00	
7543.30†	73.356	0.672	7348.00	735.73	731.46	144.47	10.00	FORT HAYS
7617.00†	80.724	0.496	7364.52	807.49	803.24	145.20	10.00	
7705.91†	89.613	0.293	7372.00	895.97	891.74	145.81	10.00	CODELL

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)
Area	COLORADO	Well	MORNING FRESH 29C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	MORNING FRESH 29C-15HZ pwb
Facility	SEC.22-T3N-R66W		

WELLPATH DATA (136 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
7708.20	89.841	0.288	7372.01	898.25	894.02	145.82	10.00	End of 3D Arc (I)
7717.00†	89.841	0.288	7372.04	907.05	902.83	145.87	0.00	
7817.00†	89.841	0.288	7372.31	1007.01	1002.83	146.37	0.00	
7917.00†	89.841	0.288	7372.59	1106.97	1102.83	146.87	0.00	
8017.00†	89.841	0.288	7372.87	1206.94	1202.82	147.37	0.00	
8117.00†	89.841	0.288	7373.15	1306.90	1302.82	147.88	0.00	
8217.00†	89.841	0.288	7373.42	1406.86	1402.82	148.38	0.00	
8317.00†	89.841	0.288	7373.70	1506.83	1502.82	148.88	0.00	
8417.00†	89.841	0.288	7373.98	1606.79	1602.82	149.39	0.00	
8517.00†	89.841	0.288	7374.26	1706.75	1702.82	149.89	0.00	
8617.00†	89.841	0.288	7374.53	1806.71	1802.81	150.39	0.00	
8717.00†	89.841	0.288	7374.81	1906.68	1902.81	150.89	0.00	
8817.00†	89.841	0.288	7375.09	2006.64	2002.81	151.40	0.00	
8917.00†	89.841	0.288	7375.37	2106.60	2102.81	151.90	0.00	
9017.00†	89.841	0.288	7375.65	2206.57	2202.81	152.40	0.00	
9117.00†	89.841	0.288	7375.92	2306.53	2302.81	152.91	0.00	
9217.00†	89.841	0.288	7376.20	2406.49	2402.80	153.41	0.00	
9317.00†	89.841	0.288	7376.48	2506.46	2502.80	153.91	0.00	
9417.00†	89.841	0.288	7376.76	2606.42	2602.80	154.41	0.00	
9517.00†	89.841	0.288	7377.03	2706.38	2702.80	154.92	0.00	
9617.00†	89.841	0.288	7377.31	2806.34	2802.80	155.42	0.00	
9717.00†	89.841	0.288	7377.59	2906.31	2902.80	155.92	0.00	
9817.00†	89.841	0.288	7377.87	3006.27	3002.79	156.43	0.00	
9917.00†	89.841	0.288	7378.14	3106.23	3102.79	156.93	0.00	
10017.00†	89.841	0.288	7378.42	3206.20	3202.79	157.43	0.00	
10117.00†	89.841	0.288	7378.70	3306.16	3302.79	157.93	0.00	
10217.00†	89.841	0.288	7378.98	3406.12	3402.79	158.44	0.00	
10317.00†	89.841	0.288	7379.26	3506.08	3502.79	158.94	0.00	
10417.00†	89.841	0.288	7379.53	3606.05	3602.78	159.44	0.00	
10517.00†	89.841	0.288	7379.81	3706.01	3702.78	159.95	0.00	
10617.00†	89.841	0.288	7380.09	3805.97	3802.78	160.45	0.00	
10717.00†	89.841	0.288	7380.37	3905.94	3902.78	160.95	0.00	
10817.00†	89.841	0.288	7380.64	4005.90	4002.78	161.45	0.00	
10917.00†	89.841	0.288	7380.92	4105.86	4102.78	161.96	0.00	
11017.00†	89.841	0.288	7381.20	4205.82	4202.77	162.46	0.00	
11117.00†	89.841	0.288	7381.48	4305.79	4302.77	162.96	0.00	
11217.00†	89.841	0.288	7381.75	4405.75	4402.77	163.46	0.00	
11317.00†	89.841	0.288	7382.03	4505.71	4502.77	163.97	0.00	
11417.00†	89.841	0.288	7382.31	4605.68	4602.77	164.47	0.00	
11517.00†	89.841	0.288	7382.59	4705.64	4702.77	164.97	0.00	
11617.00†	89.841	0.288	7382.87	4805.60	4802.76	165.48	0.00	
11717.00†	89.841	0.288	7383.14	4905.56	4902.76	165.98	0.00	
11817.00†	89.841	0.288	7383.42	5005.53	5002.76	166.48	0.00	
11917.00†	89.841	0.288	7383.70	5105.49	5102.76	166.98	0.00	
12017.00†	89.841	0.288	7383.98	5205.45	5202.76	167.49	0.00	



Planned Wellpath Report

MORNING FRESH 29C-15HZ (PERMIT) PWP

Page 5 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)
Area	COLORADO	Well	MORNING FRESH 29C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	MORNING FRESH 29C-15HZ pwb
Facility	SEC.22-T3N-R66W		

WELLPATH DATA (136 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
12025.57	89.841	0.288	7384.00 ¹	5214.02	5211.33	167.53	0.00	End of Tangent (J)

HOLE & CASING SECTIONS - Ref Wellbore: MORNING FRESH 29C-15HZ pwb Ref Wellpath: MORNING FRESH 29C-15HZ (PERMIT) 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]
9.625in Casing Surface	17.00	937.00	920.00	17.00	937.00	0.00	0.00	0.00	0.00
7in Casing Intermediate	17.00	7708.20	7691.20	17.00	7372.01	0.00	0.00	894.03	145.82

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
MORNING FRESH 3 PAD SECTION 15 SECTION LINES		0.00	0.00	0.00	3204867.87	1322619.98	40°12'59.987"N	104°45'59.008"W	polygon
MORNING FRESH 3 PAD SECTION 22 SECTION LINES		0.00	0.00	0.00	3204867.87	1322619.98	40°12'59.987"N	104°45'59.008"W	polygon
1) MORNING FRESH 29C-15HZ BHL ON PLAT (460'FNL & 2000'FWL, SEC.15, REV-1)	12025.57	7384.00	5211.33	167.53	3204992.28	1327832.28	40°13'51.485"N	104°45'56.848"W	point
MORNING FRESH 3 PAD SECTION 15 HARDLINES (460' SETBACKS)		7384.00	0.00	0.00	3204867.87	1322619.98	40°12'59.987"N	104°45'59.008"W	polygon
MORNING FRESH 3 PAD SECTION 22 HARDLINES (460' SETBACKS)		7384.00	0.00	0.00	3204867.87	1322619.98	40°12'59.987"N	104°45'59.008"W	polygon

SURVEY PROGRAM - Ref Wellbore: MORNING FRESH 29C-15HZ pwb Ref Wellpath: MORNING FRESH 29C-15HZ (PERMIT) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	12025.57	NaviTrak (Standard)		MORNING FRESH 29C-15HZ pwb



Planned Wellpath Report
MORNING FRESH 29C-15HZ (PERMIT) PWP
Page 6 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)
Area	COLORADO	Well	MORNING FRESH 29C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	MORNING FRESH 29C-15HZ pwb
Facility	SEC.22-T3N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
751.00	0.000	22.000	751.00	FOX HILLS
3938.19	3.500	22.000	3933.00	PARKMAN
4432.11	3.500	22.000	4426.00	SUSSEX
7019.27	20.987	3.667	7004.00	SHARON SPRINGS
7087.39	27.788	2.746	7066.00	NIOBRARA A
7138.38	32.882	2.291	7110.00	NIOBRARA B
7265.13	45.549	1.557	7208.00	NIOBRARA C
7543.30	73.356	0.672	7348.00	FORT HAYS
7705.91	89.613	0.293	7372.00	CODELL



Planned Wellpath Report

MORNING FRESH 29C-15HZ (PERMIT) PWP

Page 1 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)
Area	COLORADO	Well	MORNING FRESH 29C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	MORNING FRESH 29C-15HZ pwb
Facility	SEC.22-T3N-R66W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Cookdannm
Scale	0.999957	Report Generated	9/18/2012 at 12:12:12 PM
Convergence at slot	0.47° East	Database/Source file	WA_ANADARKO/MORNING_FRESH_29C-15HZ_pwb.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	1010.23	332.03	3204867.87	1322619.98	40°12'59.987"N	104°45'59.008"W
Facility Reference Pt			3204544.22	1321607.09	40°12'50.004"N	104°46'03.288"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM		
Calculation method	Minimum curvature	Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (RKB) to Facility Vertical Datum
Horizontal Reference Pt	Slot	Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (RKB) to Mean Sea Level
Vertical Reference Pt	Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (RKB)	Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (RKB) to Mud Line at Slot (SLO)
MD Reference Pt	Rig on SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22) (RKB)	Section Origin
Field Vertical Reference	Mean Sea Level	Section Azimuth

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)
Area	COLORADO	Well	MORNING FRESH 29C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	MORNING FRESH 29C-15HZ pwb
Facility	SEC.22-T3N-R66W		

WELLPATH DATA (136 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00†	0.000	22.000	0.00	0.00	0.00	0.00	0.00	
17.00	0.000	22.000	17.00	0.00	0.00	0.00	0.00	Tie On
117.00†	0.000	22.000	117.00	0.00	0.00	0.00	0.00	
217.00†	0.000	22.000	217.00	0.00	0.00	0.00	0.00	
317.00†	0.000	22.000	317.00	0.00	0.00	0.00	0.00	
417.00†	0.000	22.000	417.00	0.00	0.00	0.00	0.00	
517.00†	0.000	22.000	517.00	0.00	0.00	0.00	0.00	
617.00†	0.000	22.000	617.00	0.00	0.00	0.00	0.00	
717.00†	0.000	22.000	717.00	0.00	0.00	0.00	0.00	
751.00†	0.000	22.000	751.00	0.00	0.00	0.00	0.00	FOX HILLS
817.00†	0.000	22.000	817.00	0.00	0.00	0.00	0.00	
917.00†	0.000	22.000	917.00	0.00	0.00	0.00	0.00	
1017.00†	0.000	22.000	1017.00	0.00	0.00	0.00	0.00	
1037.00	0.000	22.000	1037.00	0.00	0.00	0.00	0.00	End of Tangent
1117.00†	1.600	22.000	1116.99	1.05	1.04	0.42	2.00	
1212.00	3.500	22.000	1211.89	5.02	4.95	2.00	2.00	End of Build
1217.00†	3.500	22.000	1216.88	5.30	5.24	2.12	0.00	
1317.00†	3.500	22.000	1316.70	11.03	10.90	4.40	0.00	
1417.00†	3.500	22.000	1416.51	16.76	16.56	6.69	0.00	
1517.00†	3.500	22.000	1516.32	22.50	22.22	8.98	0.00	
1617.00†	3.500	22.000	1616.14	28.23	27.88	11.26	0.00	
1717.00†	3.500	22.000	1715.95	33.96	33.54	13.55	0.00	
1817.00†	3.500	22.000	1815.76	39.69	39.20	15.84	0.00	
1917.00†	3.500	22.000	1915.58	45.42	44.86	18.12	0.00	
2017.00†	3.500	22.000	2015.39	51.15	50.52	20.41	0.00	
2117.00†	3.500	22.000	2115.20	56.88	56.18	22.70	0.00	
2217.00†	3.500	22.000	2215.02	62.61	61.84	24.99	0.00	
2317.00†	3.500	22.000	2314.83	68.34	67.50	27.27	0.00	
2417.00†	3.500	22.000	2414.64	74.07	73.16	29.56	0.00	
2517.00†	3.500	22.000	2514.46	79.80	78.82	31.85	0.00	
2617.00†	3.500	22.000	2614.27	85.53	84.48	34.13	0.00	
2717.00†	3.500	22.000	2714.08	91.27	90.14	36.42	0.00	
2817.00†	3.500	22.000	2813.90	97.00	95.80	38.71	0.00	
2917.00†	3.500	22.000	2913.71	102.73	101.46	40.99	0.00	
3017.00†	3.500	22.000	3013.52	108.46	107.12	43.28	0.00	
3117.00†	3.500	22.000	3113.34	114.19	112.78	45.57	0.00	
3217.00†	3.500	22.000	3213.15	119.92	118.44	47.85	0.00	
3317.00†	3.500	22.000	3312.96	125.65	124.10	50.14	0.00	
3417.00†	3.500	22.000	3412.78	131.38	129.76	52.43	0.00	
3517.00†	3.500	22.000	3512.59	137.11	135.42	54.72	0.00	
3617.00†	3.500	22.000	3612.41	142.84	141.09	57.00	0.00	
3717.00†	3.500	22.000	3712.22	148.57	146.75	59.29	0.00	
3817.00†	3.500	22.000	3812.03	154.31	152.41	61.58	0.00	
3917.00†	3.500	22.000	3911.85	160.04	158.07	63.86	0.00	
3938.19†	3.500	22.000	3933.00	161.25	159.27	64.35	0.00	PARKMAN

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)
Area	COLORADO	Well	MORNING FRESH 29C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	MORNING FRESH 29C-15HZ pwb
Facility	SEC.22-T3N-R66W		

WELLPATH DATA (136 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
4017.00†	3.500	22.000	4011.66	165.77	163.73	66.15	0.00	
4117.00†	3.500	22.000	4111.47	171.50	169.39	68.44	0.00	
4217.00†	3.500	22.000	4211.29	177.23	175.05	70.72	0.00	
4317.00†	3.500	22.000	4311.10	182.96	180.71	73.01	0.00	
4417.00†	3.500	22.000	4410.91	188.69	186.37	75.30	0.00	
4432.11†	3.500	22.000	4426.00	189.56	187.22	75.64	0.00	SUSSEX
4517.00†	3.500	22.000	4510.73	194.42	192.03	77.58	0.00	
4617.00†	3.500	22.000	4610.54	200.15	197.69	79.87	0.00	
4717.00†	3.500	22.000	4710.35	205.88	203.35	82.16	0.00	
4817.00†	3.500	22.000	4810.17	211.61	209.01	84.45	0.00	
4917.00†	3.500	22.000	4909.98	217.35	214.67	86.73	0.00	
5017.00†	3.500	22.000	5009.79	223.08	220.33	89.02	0.00	
5117.00†	3.500	22.000	5109.61	228.81	225.99	91.31	0.00	
5217.00†	3.500	22.000	5209.42	234.54	231.65	93.59	0.00	
5317.00†	3.500	22.000	5309.23	240.27	237.31	95.88	0.00	
5417.00†	3.500	22.000	5409.05	246.00	242.97	98.17	0.00	
5517.00†	3.500	22.000	5508.86	251.73	248.63	100.45	0.00	
5617.00†	3.500	22.000	5608.67	257.46	254.29	102.74	0.00	
5717.00†	3.500	22.000	5708.49	263.19	259.95	105.03	0.00	
5817.00†	3.500	22.000	5808.30	268.92	265.61	107.31	0.00	
5917.00†	3.500	22.000	5908.12	274.65	271.27	109.60	0.00	
6017.00†	3.500	22.000	6007.93	280.38	276.93	111.89	0.00	
6117.00†	3.500	22.000	6107.74	286.12	282.59	114.18	0.00	
6217.00†	3.500	22.000	6207.56	291.85	288.25	116.46	0.00	
6317.00†	3.500	22.000	6307.37	297.58	293.91	118.75	0.00	
6417.00†	3.500	22.000	6407.18	303.31	299.57	121.04	0.00	
6517.00†	3.500	22.000	6507.00	309.04	305.23	123.32	0.00	
6617.00†	3.500	22.000	6606.81	314.77	310.89	125.61	0.00	
6717.00†	3.500	22.000	6706.62	320.50	316.56	127.90	0.00	
6817.00†	3.500	22.000	6806.44	326.23	322.22	130.18	0.00	
6842.30	3.500	22.000	6831.69	327.68	323.65	130.76	0.00	End of Tangent
6917.00†	10.799	7.099	6905.76	336.80	332.72	132.48	10.00	
7017.00†	20.760	3.707	7001.88	363.91	359.77	134.79	10.00	
7019.27†	20.987	3.667	7004.00	364.72	360.58	134.84	10.00	SHARON SPRINGS
7087.39†	27.788	2.746	7066.00	392.82	388.64	136.39	10.00	NIOBRARA A
7117.00†	30.746	2.465	7091.83	407.30	403.10	137.04	10.00	
7138.38†	32.882	2.291	7110.00	418.57	414.37	137.51	10.00	NIOBRARA B
7217.00†	40.738	1.790	7172.89	465.64	461.40	139.17	10.00	
7265.13†	45.549	1.557	7208.00	498.54	494.29	140.13	10.00	NIOBRARA C
7317.00†	50.733	1.345	7242.60	537.16	532.90	141.10	10.00	
7417.00†	60.730	1.011	7298.84	619.69	615.42	142.78	10.00	
7517.00†	70.726	0.738	7339.89	710.72	706.45	144.16	10.00	
7543.30†	73.356	0.672	7348.00	735.73	731.46	144.47	10.00	FORT HAYS
7617.00†	80.724	0.496	7364.52	807.49	803.24	145.20	10.00	
7705.91†	89.613	0.293	7372.00	895.97	891.74	145.81	10.00	CODELL

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)
Area	COLORADO	Well	MORNING FRESH 29C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	MORNING FRESH 29C-15HZ pwb
Facility	SEC.22-T3N-R66W		

WELLPATH DATA (136 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
7708.20	89.841	0.288	7372.01	898.25	894.02	145.82	10.00	End of 3D Arc (I)
7717.00†	89.841	0.288	7372.04	907.05	902.83	145.87	0.00	
7817.00†	89.841	0.288	7372.31	1007.01	1002.83	146.37	0.00	
7917.00†	89.841	0.288	7372.59	1106.97	1102.83	146.87	0.00	
8017.00†	89.841	0.288	7372.87	1206.94	1202.82	147.37	0.00	
8117.00†	89.841	0.288	7373.15	1306.90	1302.82	147.88	0.00	
8217.00†	89.841	0.288	7373.42	1406.86	1402.82	148.38	0.00	
8317.00†	89.841	0.288	7373.70	1506.83	1502.82	148.88	0.00	
8417.00†	89.841	0.288	7373.98	1606.79	1602.82	149.39	0.00	
8517.00†	89.841	0.288	7374.26	1706.75	1702.82	149.89	0.00	
8617.00†	89.841	0.288	7374.53	1806.71	1802.81	150.39	0.00	
8717.00†	89.841	0.288	7374.81	1906.68	1902.81	150.89	0.00	
8817.00†	89.841	0.288	7375.09	2006.64	2002.81	151.40	0.00	
8917.00†	89.841	0.288	7375.37	2106.60	2102.81	151.90	0.00	
9017.00†	89.841	0.288	7375.65	2206.57	2202.81	152.40	0.00	
9117.00†	89.841	0.288	7375.92	2306.53	2302.81	152.91	0.00	
9217.00†	89.841	0.288	7376.20	2406.49	2402.80	153.41	0.00	
9317.00†	89.841	0.288	7376.48	2506.46	2502.80	153.91	0.00	
9417.00†	89.841	0.288	7376.76	2606.42	2602.80	154.41	0.00	
9517.00†	89.841	0.288	7377.03	2706.38	2702.80	154.92	0.00	
9617.00†	89.841	0.288	7377.31	2806.34	2802.80	155.42	0.00	
9717.00†	89.841	0.288	7377.59	2906.31	2902.80	155.92	0.00	
9817.00†	89.841	0.288	7377.87	3006.27	3002.79	156.43	0.00	
9917.00†	89.841	0.288	7378.14	3106.23	3102.79	156.93	0.00	
10017.00†	89.841	0.288	7378.42	3206.20	3202.79	157.43	0.00	
10117.00†	89.841	0.288	7378.70	3306.16	3302.79	157.93	0.00	
10217.00†	89.841	0.288	7378.98	3406.12	3402.79	158.44	0.00	
10317.00†	89.841	0.288	7379.26	3506.08	3502.79	158.94	0.00	
10417.00†	89.841	0.288	7379.53	3606.05	3602.78	159.44	0.00	
10517.00†	89.841	0.288	7379.81	3706.01	3702.78	159.95	0.00	
10617.00†	89.841	0.288	7380.09	3805.97	3802.78	160.45	0.00	
10717.00†	89.841	0.288	7380.37	3905.94	3902.78	160.95	0.00	
10817.00†	89.841	0.288	7380.64	4005.90	4002.78	161.45	0.00	
10917.00†	89.841	0.288	7380.92	4105.86	4102.78	161.96	0.00	
11017.00†	89.841	0.288	7381.20	4205.82	4202.77	162.46	0.00	
11117.00†	89.841	0.288	7381.48	4305.79	4302.77	162.96	0.00	
11217.00†	89.841	0.288	7381.75	4405.75	4402.77	163.46	0.00	
11317.00†	89.841	0.288	7382.03	4505.71	4502.77	163.97	0.00	
11417.00†	89.841	0.288	7382.31	4605.68	4602.77	164.47	0.00	
11517.00†	89.841	0.288	7382.59	4705.64	4702.77	164.97	0.00	
11617.00†	89.841	0.288	7382.87	4805.60	4802.76	165.48	0.00	
11717.00†	89.841	0.288	7383.14	4905.56	4902.76	165.98	0.00	
11817.00†	89.841	0.288	7383.42	5005.53	5002.76	166.48	0.00	
11917.00†	89.841	0.288	7383.70	5105.49	5102.76	166.98	0.00	
12017.00†	89.841	0.288	7383.98	5205.45	5202.76	167.49	0.00	



Planned Wellpath Report

MORNING FRESH 29C-15HZ (PERMIT) PWP

Page 5 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP		Slot
Area	COLORADO		Well
Field	WELD COUNTY (KERR MCGEE)		Wellbore
Facility	SEC.22-T3N-R66W		MORNING FRESH 29C-15HZ pwb

WELLPATH DATA (136 stations)								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
12025.57	89.841	0.288	7384.00 ¹	5214.02	5211.33	167.53	0.00	End of Tangent (J)

HOLE & CASING SECTIONS - Ref Wellbore: MORNING FRESH 29C-15HZ pwb Ref Wellpath: MORNING FRESH 29C-15HZ (PERMIT) 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]
9.625in Casing Surface	17.00	937.00	920.00	17.00	937.00	0.00	0.00	0.00	0.00
7in Casing Intermediate	17.00	7708.20	7691.20	17.00	7372.01	0.00	0.00	894.03	145.82

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
MORNING FRESH 3 PAD SECTION 15 SECTION LINES		0.00	0.00	0.00	3204867.87	1322619.98	40°12'59.987"N	104°45'59.008"W	polygon
MORNING FRESH 3 PAD SECTION 22 SECTION LINES		0.00	0.00	0.00	3204867.87	1322619.98	40°12'59.987"N	104°45'59.008"W	polygon
1) MORNING FRESH 29C-15HZ BHL ON PLAT (460'FNL & 2000'FWL, SEC.15, REV-1)	12025.57	7384.00	5211.33	167.53	3204992.28	1327832.28	40°13'51.485"N	104°45'56.848"W	point
MORNING FRESH 3 PAD SECTION 15 HARDLINES (460' SETBACKS)		7384.00	0.00	0.00	3204867.87	1322619.98	40°12'59.987"N	104°45'59.008"W	polygon
MORNING FRESH 3 PAD SECTION 22 HARDLINES (460' SETBACKS)		7384.00	0.00	0.00	3204867.87	1322619.98	40°12'59.987"N	104°45'59.008"W	polygon

SURVEY PROGRAM - Ref Wellbore: MORNING FRESH 29C-15HZ pwb Ref Wellpath: MORNING FRESH 29C-15HZ (PERMIT) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	12025.57	NaviTrak (Standard)		MORNING FRESH 29C-15HZ pwb



Planned Wellpath Report
MORNING FRESH 29C-15HZ (PERMIT) PWP
Page 6 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 MORNING FRESH 29C-15HZ (427'FNL & 1858'FWL, SEC.22)
Area	COLORADO	Well	MORNING FRESH 29C-15HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	MORNING FRESH 29C-15HZ pwb
Facility	SEC.22-T3N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
751.00	0.000	22.000	751.00	FOX HILLS
3938.19	3.500	22.000	3933.00	PARKMAN
4432.11	3.500	22.000	4426.00	SUSSEX
7019.27	20.987	3.667	7004.00	SHARON SPRINGS
7087.39	27.788	2.746	7066.00	NIOBRARA A
7138.38	32.882	2.291	7110.00	NIOBRARA B
7265.13	45.549	1.557	7208.00	NIOBRARA C
7543.30	73.356	0.672	7348.00	FORT HAYS
7705.91	89.613	0.293	7372.00	CODELL