

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31)
Field: WELD COUNTY (KERR MCGEE) Well: SACK 16N-6HZ
Facility: SEC.31-T1N-R67W Wellbore: SACK 16N-6HZ PWB
Plot reference wellpath is SACK 16N-6HZ (REV-D.0) PWP

True vertical depths are referenced to PRECISION 595 (25'KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PRECISION 595 (25'KB) (RKB)	North Reference: True north
PRECISION 595 (25'KB) (RKB) to Mean Sea Level: 5080 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: robale01 on 9/2/2014

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.31-T1N-R67W			3157061.918	1244292.687	40°00'09.382"N	104°55'21.649"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31)	-152.42	3681.78	3160744.453	1244163.549	40°00'07.873"N	104°55'34.338"W
PRECISION 595 (25'KB) (RKB) to Mud line (At Slot: SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31))						5080ft
Mean Sea Level to Mud line (At Slot: SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31))						0ft
PRECISION 595 (25'KB) (RKB) to Mean Sea Level						5080ft

Survey Program

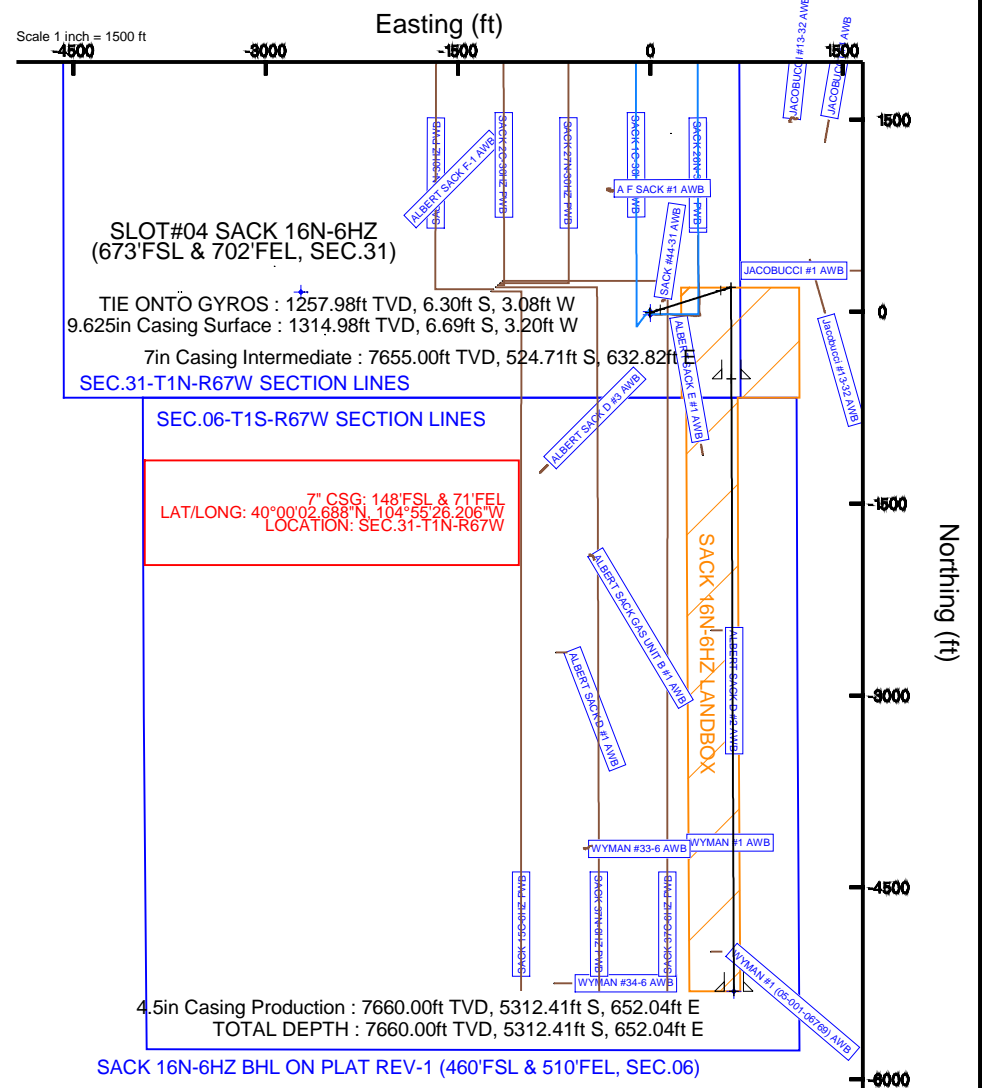
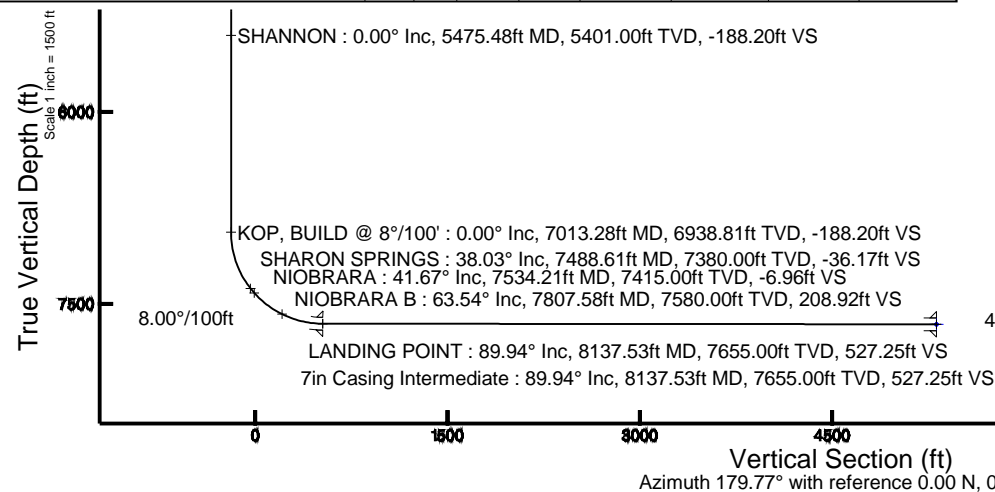
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
25.00	1258.00	Generic gyro - continuous	Generic gyro - continuous (Standard)		SACK 16N-6HZ AWB
1258.00	8137.53	NaviTrak	NaviTrak (MAGCORR,IFR)		SACK 16N-6HZ PWB
8137.53	12925.27	NaviTrak	NaviTrak (MAGCORR,IFR)		SACK 16N-6HZ PWB

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE ONTO GYROS	1258.00	0.410	197.350	1257.98	-6.30	-3.08	0.11	6.29
BEGIN NUDGE	1355.02	0.410	197.350	1355.00	-6.97	-3.29	0.00	6.95
END NUDGE	2066.94	14.000	72.480	2059.96	16.65	78.49	2.00	-16.33
BEGIN DROP	4105.53	14.000	72.480	4038.00	165.11	548.80	0.00	-162.91
END DROP	4805.53	0.000	179.770	4731.06	190.73	629.95	2.00	-188.20
KOP, BUILD @ 8°/100'	7013.28	0.000	179.770	6938.81	190.73	629.95	0.00	-188.20
LANDING POINT	8137.53	89.940	179.770	7655.00	-524.71	632.82	8.00	527.25
TOTAL DEPTH	12925.27	89.940	179.770	7660.00	-5312.41	652.04	0.00	5314.98

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.06-T1S-R67W SECTION LINES		0.00	-23.88	0.00	3160744.61	1244139.57	40°00'07.636"N	104°55'34.338"W
SEC.31-T1N-R67W SECTION LINES		0.00	152.44	-2724.80	3158018.82	1244298.35	40°00'09.378"N	104°55'09.352"W
SACK 16N-6HZ BHL ON PLAT REV-1 (460'FSL & 510'FEL, SEC.06)	12925.27	7660.00	-5312.41	652.04	3161430.83	1238855.66	39°59'15.374"N	104°55'25.961"W
SACK 16N-6HZ LANDBOX		7660.00	0.00	0.00	3160744.45	1244163.55	40°00'07.873"N	104°55'34.338"W



SACK 16N-6HZ BHL ON PLAT REV-1 (460'FSL & 510'FEL, SEC.06)

4.5in Casing Production : 89.94° Inc, 12925.27ft MD, 7660.00ft TVD, 5314.98ft VS

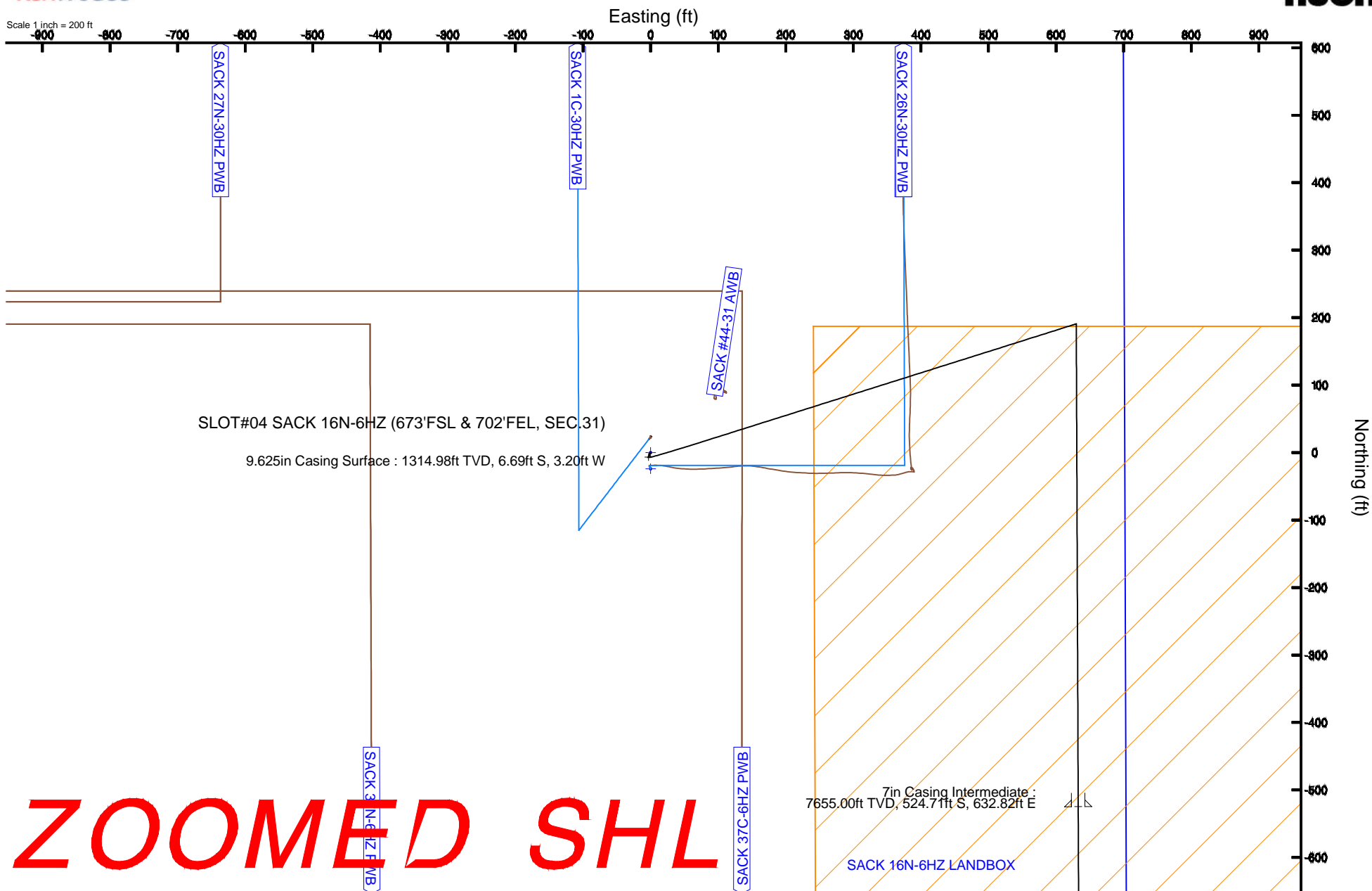
TOTAL DEPTH : 89.94° Inc, 12925.27ft MD, 7660.00ft TVD, 5314.98ft VS

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31)
 Field: WELD COUNTY (KERR MCGEE) Well: SACK 16N-6HZ
 Facility: SEC.31-T1N-R67W Wellbore: SACK 16N-6HZ PWB

Plot reference wellpath is SACK 16N-6HZ (REV-D.0) PWP

True vertical depths are referenced to PRECISION 595 (25'KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PRECISION 595 (25'KB) (RKB)	North Reference: True north
PRECISION 595 (25'KB) (RKB) to Mean Sea Level: 5080 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: robiale01 on 9/2/2014



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31)
Area	COLORADO	Well	SACK 16N-6HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	SACK 16N-6HZ PWB
Facility	SEC.31-T1N-R67W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Robiale01
Scale	0.999966	Report Generated	9/2/2014 at 5:02:19 PM
Convergence at slot	n/a	Database/Source file	WellArchitectDB/SACK_16N-6HZ_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-152.42	3681.78	3160744.45	1244163.55	40°00'07.873"N	104°55'34.338"W
Facility Reference Pt			3157061.92	1244292.69	40°00'09.382"N	104°56'21.649"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	PRECISION 595 (25'KB) (RKB) to Facility Vertical Datum	5080.00ft
Horizontal Reference Pt	Slot	PRECISION 595 (25'KB) (RKB) to Mean Sea Level	5080.00ft
Vertical Reference Pt	PRECISION 595 (25'KB) (RKB)	PRECISION 595 (25'KB) (RKB) to Mud Line at Slot (SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31))	5080.00ft
MD Reference Pt	PRECISION 595 (25'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.77°

Planned Wellpath Report

SACK 16N-6HZ (REV-D.0) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31)
Area	COLORADO	Well	SACK 16N-6HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	SACK 16N-6HZ PWB
Facility	SEC.31-T1N-R67W		

WELLPATH DATA (144 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	198.940	0.00	0.00	0.00	0.00	40°00'07.873"N	104°55'34.338"W	0.00	
25.00	0.000	198.940	25.00	0.00	0.00	0.00	40°00'07.873"N	104°55'34.338"W	0.00	
125.00	0.370	198.940	125.00	0.30	-0.31	-0.10	40°00'07.870"N	104°55'34.339"W	0.37	
225.00	0.310	242.370	225.00	0.73	-0.74	-0.45	40°00'07.866"N	104°55'34.344"W	0.26	
325.00	0.410	221.110	325.00	1.13	-1.13	-0.92	40°00'07.862"N	104°55'34.350"W	0.17	
425.00	0.340	199.640	424.99	1.68	-1.68	-1.26	40°00'07.856"N	104°55'34.354"W	0.16	
525.00	0.390	195.820	524.99	2.28	-2.29	-1.45	40°00'07.850"N	104°55'34.357"W	0.06	
625.00	0.290	202.390	624.99	2.84	-2.85	-1.64	40°00'07.845"N	104°55'34.359"W	0.11	
725.00	0.340	188.140	724.99	3.37	-3.38	-1.78	40°00'07.840"N	104°55'34.361"W	0.09	
825.00	0.290	186.890	824.99	3.91	-3.92	-1.85	40°00'07.834"N	104°55'34.362"W	0.05	
925.00	0.400	193.090	924.99	4.50	-4.51	-1.96	40°00'07.828"N	104°55'34.363"W	0.12	
1025.00	0.350	215.980	1024.98	5.09	-5.10	-2.22	40°00'07.823"N	104°55'34.367"W	0.16	
1125.00	0.390	232.180	1124.98	5.54	-5.56	-2.67	40°00'07.818"N	104°55'34.372"W	0.11	
1225.00	0.380	194.160	1224.98	6.07	-6.09	-3.02	40°00'07.813"N	104°55'34.377"W	0.25	
1235.02†	0.389	195.181	1235.00	6.14	-6.15	-3.03	40°00'07.812"N	104°55'34.377"W	0.11	FOX HILLS MARKER
1258.00	0.410	197.350	1257.98	6.29	-6.30	-3.08	40°00'07.811"N	104°55'34.378"W	0.11	TIE ONTO GYROS
1355.02	0.410	197.350	1355.00	6.95	-6.97	-3.29	40°00'07.804"N	104°55'34.380"W	0.00	BEGIN NUDGE
1358.00†	0.378	190.049	1357.98	6.97	-6.99	-3.29	40°00'07.804"N	104°55'34.380"W	2.00	
1458.00†	1.847	81.468	1457.96	7.07	-7.07	-1.76	40°00'07.803"N	104°55'34.361"W	2.00	
1558.00†	3.832	76.099	1557.83	6.04	-6.03	3.08	40°00'07.813"N	104°55'34.298"W	2.00	
1658.00†	5.827	74.397	1657.47	3.91	-3.86	11.22	40°00'07.835"N	104°55'34.194"W	2.00	
1758.00†	7.824	73.561	1756.76	0.66	-0.57	22.63	40°00'07.867"N	104°55'34.047"W	2.00	
1858.00†	9.823	73.064	1855.57	-3.69	3.84	37.32	40°00'07.911"N	104°55'33.858"W	2.00	
1958.00†	11.822	72.734	1953.79	-9.14	9.37	55.27	40°00'07.966"N	104°55'33.628"W	2.00	
2058.00†	13.821	72.498	2051.29	-15.69	16.00	76.44	40°00'08.031"N	104°55'33.356"W	2.00	
2066.94	14.000	72.480	2059.96	-16.33	16.65	78.49	40°00'08.038"N	104°55'33.329"W	2.00	END NUDGE
2158.00†	14.000	72.480	2148.32	-22.88	23.28	99.50	40°00'08.103"N	104°55'33.059"W	0.00	
2258.00†	14.000	72.480	2245.35	-30.07	30.56	122.57	40°00'08.175"N	104°55'32.763"W	0.00	
2358.00†	14.000	72.480	2342.38	-37.26	37.84	145.64	40°00'08.247"N	104°55'32.466"W	0.00	
2458.00†	14.000	72.480	2439.41	-44.45	45.13	168.71	40°00'08.319"N	104°55'32.170"W	0.00	
2558.00†	14.000	72.480	2536.44	-51.64	52.41	191.78	40°00'08.391"N	104°55'31.874"W	0.00	
2658.00†	14.000	72.480	2633.47	-58.83	59.69	214.85	40°00'08.463"N	104°55'31.577"W	0.00	
2758.00†	14.000	72.480	2730.50	-66.02	66.98	237.92	40°00'08.535"N	104°55'31.281"W	0.00	
2858.00†	14.000	72.480	2827.53	-73.21	74.26	260.99	40°00'08.607"N	104°55'30.984"W	0.00	
2958.00†	14.000	72.480	2924.56	-80.40	81.54	284.06	40°00'08.679"N	104°55'30.688"W	0.00	
3058.00†	14.000	72.480	3021.59	-87.59	88.82	307.13	40°00'08.751"N	104°55'30.391"W	0.00	
3158.00†	14.000	72.480	3118.62	-94.78	96.11	330.20	40°00'08.823"N	104°55'30.095"W	0.00	
3258.00†	14.000	72.480	3215.64	-101.97	103.39	353.27	40°00'08.895"N	104°55'29.798"W	0.00	
3358.00†	14.000	72.480	3312.67	-109.16	110.67	376.34	40°00'08.967"N	104°55'29.502"W	0.00	
3458.00†	14.000	72.480	3409.70	-116.35	117.95	399.41	40°00'09.039"N	104°55'29.206"W	0.00	
3558.00†	14.000	72.480	3506.73	-123.54	125.24	422.48	40°00'09.111"N	104°55'28.909"W	0.00	
3658.00†	14.000	72.480	3603.76	-130.73	132.52	445.55	40°00'09.183"N	104°55'28.613"W	0.00	
3758.00†	14.000	72.480	3700.79	-137.92	139.80	468.62	40°00'09.255"N	104°55'28.316"W	0.00	
3858.00†	14.000	72.480	3797.82	-145.11	147.09	491.69	40°00'09.327"N	104°55'28.020"W	0.00	

3958.00†	14.000	72.480	3894.85	-152.30	154.37	514.76	40°00'09.398"N	104°55'27.723"W	0.00	
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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31)
Area	COLORADO	Well	SACK 16N-6HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	SACK 16N-6HZ PWB
Facility	SEC.31-T1N-R67W		

WELLPATH DATA (144 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4058.00†	14.000	72.480	3991.88	-159.49	161.65	537.83	40°00'09.470"N	104°55'27.427"W	0.00	
4105.53	14.000	72.480	4038.00	-162.91	165.11	548.80	40°00'09.505"N	104°55'27.286"W	0.00	BEGIN DROP
4158.00†	12.951	72.480	4089.02	-166.54	168.79	560.46	40°00'09.541"N	104°55'27.136"W	2.00	
4258.00†	10.951	72.480	4186.85	-172.70	175.03	580.20	40°00'09.603"N	104°55'26.882"W	2.00	
4358.00†	8.951	72.480	4285.34	-177.83	180.23	596.68	40°00'09.654"N	104°55'26.671"W	2.00	
4458.00†	6.951	72.480	4384.38	-181.94	184.39	609.87	40°00'09.695"N	104°55'26.501"W	2.00	
4558.00†	4.951	72.480	4483.83	-185.02	187.51	619.75	40°00'09.726"N	104°55'26.374"W	2.00	
4658.00†	2.951	72.480	4583.59	-187.07	189.59	626.32	40°00'09.746"N	104°55'26.290"W	2.00	
4758.00†	0.951	72.480	4683.53	-188.08	190.61	629.57	40°00'09.757"N	104°55'26.248"W	2.00	
4805.53	0.000	179.770	4731.06	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	2.00	END DROP
4858.00†	0.000	179.770	4783.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
4958.00†	0.000	179.770	4883.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
5058.00†	0.000	179.770	4983.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
5154.48†	0.000	179.770	5080.00	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	SUSSEX
5158.00†	0.000	179.770	5083.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
5258.00†	0.000	179.770	5183.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
5358.00†	0.000	179.770	5283.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
5458.00†	0.000	179.770	5383.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
5475.48†	0.000	179.770	5401.00	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	SHANNON
5558.00†	0.000	179.770	5483.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
5658.00†	0.000	179.770	5583.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
5758.00†	0.000	179.770	5683.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
5858.00†	0.000	179.770	5783.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
5958.00†	0.000	179.770	5883.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
6058.00†	0.000	179.770	5983.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
6158.00†	0.000	179.770	6083.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
6258.00†	0.000	179.770	6183.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
6358.00†	0.000	179.770	6283.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
6458.00†	0.000	179.770	6383.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
6558.00†	0.000	179.770	6483.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
6658.00†	0.000	179.770	6583.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
6758.00†	0.000	179.770	6683.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
6858.00†	0.000	179.770	6783.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
6958.00†	0.000	179.770	6883.52	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	
7013.28	0.000	179.770	6938.81	-188.20	190.73	629.95	40°00'09.758"N	104°55'26.243"W	0.00	KOP, BUILD @ 8°/100'
7058.00†	3.578	179.770	6983.50	-186.80	189.33	629.95	40°00'09.744"N	104°55'26.243"W	8.00	
7158.00†	11.578	179.770	7082.54	-173.63	176.16	630.00	40°00'09.614"N	104°55'26.242"W	8.00	
7258.00†	19.578	179.770	7178.79	-146.80	149.33	630.11	40°00'09.349"N	104°55'26.241"W	8.00	
7358.00†	27.578	179.770	7270.37	-106.83	109.36	630.27	40°00'08.954"N	104°55'26.239"W	8.00	
7458.00†	35.578	179.770	7355.49	-54.51	57.04	630.48	40°00'08.437"N	104°55'26.236"W	8.00	
7488.61†	38.026	179.770	7380.00	-36.17	38.70	630.56	40°00'08.255"N	104°55'26.235"W	8.00	SHARON SPRINGS
7534.21†	41.674	179.770	7415.00	-6.96	9.49	630.67	40°00'07.967"N	104°55'26.234"W	8.00	NIOBRARA
7558.00†	43.578	179.770	7432.51	9.15	-6.62	630.74	40°00'07.807"N	104°55'26.233"W	8.00	
7658.00†	51.578	179.770	7499.91	82.91	-80.38	631.03	40°00'07.079"N	104°55'26.229"W	8.00	

7758.00†	59.578	179.770	7556.39	165.34	-162.80	631.36	40°00'06.264"N	104°55'26.225"W	8.00	
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Planned Wellpath Report

SACK 16N-6HZ (REV-D.0) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31)
Area	COLORADO	Well	SACK 16N-6HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	SACK 16N-6HZ PWB
Facility	SEC.31-T1N-R67W		

WELLPATH DATA (144 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7807.58†	63.544	179.770	7580.00	208.92	-206.39	631.54	40°00'05.833"N	104°55'26.223"W	8.00	NIOBRARA B
7858.00†	67.578	179.770	7600.86	254.82	-252.28	631.72	40°00'05.380"N	104°55'26.220"W	8.00	
7958.00†	75.578	179.770	7632.43	349.61	-347.08	632.10	40°00'04.443"N	104°55'26.216"W	8.00	
8058.00†	83.578	179.770	7650.51	447.89	-445.35	632.50	40°00'03.472"N	104°55'26.210"W	8.00	
8137.53	89.940	179.770	7655.00	527.25	-524.71	632.82	40°00'02.688"N	104°55'26.206"W	8.00	LANDING POINT
8158.00†	89.940	179.770	7655.02	547.72	-545.18	632.90	40°00'02.485"N	104°55'26.205"W	0.00	
8258.00†	89.940	179.770	7655.13	647.72	-645.18	633.30	40°00'01.497"N	104°55'26.200"W	0.00	
8358.00†	89.940	179.770	7655.23	747.72	-745.18	633.70	40°00'00.509"N	104°55'26.195"W	0.00	
8458.00†	89.940	179.770	7655.34	847.72	-845.18	634.11	39°59'59.521"N	104°55'26.190"W	0.00	
8558.00†	89.940	179.770	7655.44	947.72	-945.18	634.51	39°59'58.532"N	104°55'26.185"W	0.00	
8658.00†	89.940	179.770	7655.55	1047.72	-1045.18	634.91	39°59'57.544"N	104°55'26.180"W	0.00	
8758.00†	89.940	179.770	7655.65	1147.72	-1145.18	635.31	39°59'56.556"N	104°55'26.175"W	0.00	
8858.00†	89.940	179.770	7655.75	1247.72	-1245.17	635.71	39°59'55.568"N	104°55'26.169"W	0.00	
8958.00†	89.940	179.770	7655.86	1347.72	-1345.17	636.11	39°59'54.579"N	104°55'26.164"W	0.00	
9058.00†	89.940	179.770	7655.96	1447.72	-1445.17	636.51	39°59'53.591"N	104°55'26.159"W	0.00	
9158.00†	89.940	179.770	7656.07	1547.72	-1545.17	636.92	39°59'52.603"N	104°55'26.154"W	0.00	
9258.00†	89.940	179.770	7656.17	1647.72	-1645.17	637.32	39°59'51.615"N	104°55'26.149"W	0.00	
9358.00†	89.940	179.770	7656.28	1747.72	-1745.17	637.72	39°59'50.627"N	104°55'26.144"W	0.00	
9458.00†	89.940	179.770	7656.38	1847.72	-1845.17	638.12	39°59'49.638"N	104°55'26.139"W	0.00	
9558.00†	89.940	179.770	7656.48	1947.72	-1945.17	638.52	39°59'48.650"N	104°55'26.134"W	0.00	
9658.00†	89.940	179.770	7656.59	2047.72	-2045.17	638.92	39°59'47.662"N	104°55'26.128"W	0.00	
9758.00†	89.940	179.770	7656.69	2147.72	-2145.17	639.33	39°59'46.674"N	104°55'26.123"W	0.00	
9858.00†	89.940	179.770	7656.80	2247.72	-2245.17	639.73	39°59'45.685"N	104°55'26.118"W	0.00	
9958.00†	89.940	179.770	7656.90	2347.72	-2345.17	640.13	39°59'44.697"N	104°55'26.113"W	0.00	
10058.00†	89.940	179.770	7657.01	2447.72	-2445.16	640.53	39°59'43.709"N	104°55'26.108"W	0.00	
10158.00†	89.940	179.770	7657.11	2547.72	-2545.16	640.93	39°59'42.721"N	104°55'26.103"W	0.00	
10258.00†	89.940	179.770	7657.22	2647.72	-2645.16	641.33	39°59'41.733"N	104°55'26.098"W	0.00	
10358.00†	89.940	179.770	7657.32	2747.72	-2745.16	641.73	39°59'40.744"N	104°55'26.093"W	0.00	
10458.00†	89.940	179.770	7657.42	2847.72	-2845.16	642.14	39°59'39.756"N	104°55'26.087"W	0.00	
10558.00†	89.940	179.770	7657.53	2947.72	-2945.16	642.54	39°59'38.768"N	104°55'26.082"W	0.00	
10658.00†	89.940	179.770	7657.63	3047.72	-3045.16	642.94	39°59'37.780"N	104°55'26.077"W	0.00	
10758.00†	89.940	179.770	7657.74	3147.72	-3145.16	643.34	39°59'36.791"N	104°55'26.072"W	0.00	
10858.00†	89.940	179.770	7657.84	3247.72	-3245.16	643.74	39°59'35.803"N	104°55'26.067"W	0.00	
10958.00†	89.940	179.770	7657.95	3347.72	-3345.16	644.14	39°59'34.815"N	104°55'26.062"W	0.00	
11058.00†	89.940	179.770	7658.05	3447.72	-3445.16	644.55	39°59'33.827"N	104°55'26.057"W	0.00	
11158.00†	89.940	179.770	7658.16	3547.72	-3545.15	644.95	39°59'32.839"N	104°55'26.052"W	0.00	
11258.00†	89.940	179.770	7658.26	3647.72	-3645.15	645.35	39°59'31.850"N	104°55'26.046"W	0.00	
11358.00†	89.940	179.770	7658.36	3747.72	-3745.15	645.75	39°59'30.862"N	104°55'26.041"W	0.00	
11458.00†	89.940	179.770	7658.47	3847.72	-3845.15	646.15	39°59'29.874"N	104°55'26.036"W	0.00	
11558.00†	89.940	179.770	7658.57	3947.72	-3945.15	646.55	39°59'28.886"N	104°55'26.031"W	0.00	
11658.00†	89.940	179.770	7658.68	4047.72	-4045.15	646.95	39°59'27.897"N	104°55'26.026"W	0.00	
11758.00†	89.940	179.770	7658.78	4147.72	-4145.15	647.36	39°59'26.909"N	104°55'26.021"W	0.00	
11858.00†	89.940	179.770	7658.89	4247.71	-4245.15	647.76	39°59'25.921"N	104°55'26.016"W	0.00	
11958.00†	89.940	179.770	7658.99	4347.71	-4345.15	648.16	39°59'24.933"N	104°55'26.011"W	0.00	

12058.00†	89.940	179.770	7659.09	4447.71	-4445.15	648.56	39°59'23.945"N	104°55'26.005"W	0.00
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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31)
Area	COLORADO	Well	SACK 16N-6HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	SACK 16N-6HZ PWB
Facility	SEC.31-T1N-R67W		

WELLPATH DATA (144 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12158.00†	89.940	179.770	7659.20	4547.71	-4545.15	648.96	39°59'22.956"N	104°55'26.000"W	0.00	
12258.00†	89.940	179.770	7659.30	4647.71	-4645.15	649.36	39°59'21.968"N	104°55'25.995"W	0.00	
12358.00†	89.940	179.770	7659.41	4747.71	-4745.14	649.77	39°59'20.980"N	104°55'25.990"W	0.00	
12458.00†	89.940	179.770	7659.51	4847.71	-4845.14	650.17	39°59'19.992"N	104°55'25.985"W	0.00	
12558.00†	89.940	179.770	7659.62	4947.71	-4945.14	650.57	39°59'19.003"N	104°55'25.980"W	0.00	
12658.00†	89.940	179.770	7659.72	5047.71	-5045.14	650.97	39°59'18.015"N	104°55'25.975"W	0.00	
12758.00†	89.940	179.770	7659.83	5147.71	-5145.14	651.37	39°59'17.027"N	104°55'25.970"W	0.00	
12858.00†	89.940	179.770	7659.93	5247.71	-5245.14	651.77	39°59'16.039"N	104°55'25.964"W	0.00	
12925.27	89.940	179.770	7660.00 ¹	5314.98	-5312.41	652.04	39°59'15.374"N	104°55'25.961"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS - Ref Wellbore: SACK 16N-6HZ PWB Ref Wellpath: SACK 16N-6HZ (REV-D.0) 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	25.00	1325.00	1300.00	25.00	1324.98	0.00	0.00	-6.76	-3.22
9.625in Casing Surface	25.00	1315.00	1290.00	25.00	1314.98	0.00	0.00	-6.69	-3.20
8.75in Open Hole	1325.00	8137.53	6812.53	1324.98	7655.00	-6.76	-3.22	-524.71	632.82
7in Casing Intermediate	25.00	8137.53	8112.53	25.00	7655.00	0.00	0.00	-524.71	632.82
6.125in Open Hole	8137.53	12925.27	4787.74	7655.00	7660.00	-524.71	632.82	-5312.41	652.04
4.5in Casing Production	25.00	12925.27	12900.27	25.00	7660.00	0.00	0.00	-5312.41	652.04

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31)
Area	COLORADO	Well	SACK 16N-6HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	SACK 16N-6HZ PWB
Facility	SEC.31-T1N-R67W		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.06-T1S-R67W SECTION LINES		0.00	-23.98	0.00	3160744.61	1244139.57	40°00'07.636"N	104°55'34.338"W	polygon
SEC.31-T1N-R67W SECTION LINES		0.00	152.44	-2724.80	3158018.82	1244298.35	40°00'09.378"N	104°56'09.352"W	polygon
1) SACK 16N-6HZ BHL ON PLAT REV-1 (460'FSL & 510'FEL, SEC.06)	12925.27	7660.00	-5312.41	652.04	3161430.83	1238855.66	39°59'15.374"N	104°55'25.961"W	point
SACK 16N-6HZ LANDBOX		7660.00	0.00	0.00	3160744.45	1244163.55	40°00'07.873"N	104°55'34.338"W	polygon

SURVEY PROGRAM - Ref Wellbore: SACK 16N-6HZ PWB					Ref Wellpath: SACK 16N-6HZ (REV-D.0) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment		Wellbore		
25.00	1258.00	Generic gyro - continuous (Standard)					SACK 16N-6HZ AWB		
1258.00	8137.53	NaviTrak (MAGCORR,IFR)					SACK 16N-6HZ PWB		
8137.53	12925.27	NaviTrak (MAGCORR,IFR)					SACK 16N-6HZ PWB		

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 SACK 16N-6HZ (673'FSL & 702'FEL, SEC.31)
Area	COLORADO	Well	SACK 16N-6HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	SACK 16N-6HZ PWB
Facility	SEC.31-T1N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1235.02	0.389	195.181	1235.00	FOX HILLS MARKER
5154.48	0.000	179.770	5080.00	SUSSEX
5475.48	0.000	179.770	5401.00	SHANNON
7488.61	38.026	179.770	7380.00	SHARON SPRINGS
7534.21	41.674	179.770	7415.00	NIORARA
7807.58	63.544	179.770	7580.00	NIORARA B

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1258.00	0.410	197.350	1257.98	TIE ONTO GYROS
1355.02	0.410	197.350	1355.00	BEGIN NUDGE
2066.94	14.000	72.480	2059.96	END NUDGE
4105.53	14.000	72.480	4038.00	BEGIN DROP
4805.53	0.000	179.770	4731.06	END DROP
7013.28	0.000	179.770	6938.81	KOP, BUILD @ 8°/100'
8137.53	89.940	179.770	7655.00	LANDING POINT
12925.27	89.940	179.770	7660.00	TOTAL DEPTH