

# KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#02 VOGEL STATE 16C-36HZ (615'FSL & 718'FWL, SEC.36)  
Field: WELD COUNTY (KERR MCGEE) Well: VOGEL STATE 16C-36HZ  
Facility: SEC.36-T3N-R68W Wellbore: VOGEL STATE 16C-36HZ PWB

Plot reference wellpath is VOGEL STATE 16C-36HZ (PERMIT REV-1)

True vertical depths are referenced to PERMIT (17 KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PERMIT (17 KB) (RKB)	North Reference: True north
PERMIT (17 KB) (RKB) to Mean Sea Level: 4835 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOTH02 VOGEL STATE 16C-36HZ (615'FSL & 718'FWL, SEC.36)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: robie01 on 01/Oct/2013

## Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.36-T3N-R68W	3151422.828	1307760.543	40°10'36.942"N	104°57'29.129"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
SLOT#02 VOGEL STATE 16C-36HZ (615'FSL & 718'FWL, SEC.36)	-29.95	-2.72	3151420.295	1307730.575
PERMIT (17 KB) (RKB) to Mud line (At Slot: SLOTH02 VOGEL STATE 16C-36HZ (615'FSL & 718'FWL, SEC.36))				4835ft
Mean Sea Level to Mud line (At Slot: SLOTH02 VOGEL STATE 16C-36HZ (615'FSL & 718'FWL, SEC.36))				0ft
PERMIT (17 KB) (RKB) to Mean Sea Level				4835ft

## Survey Program

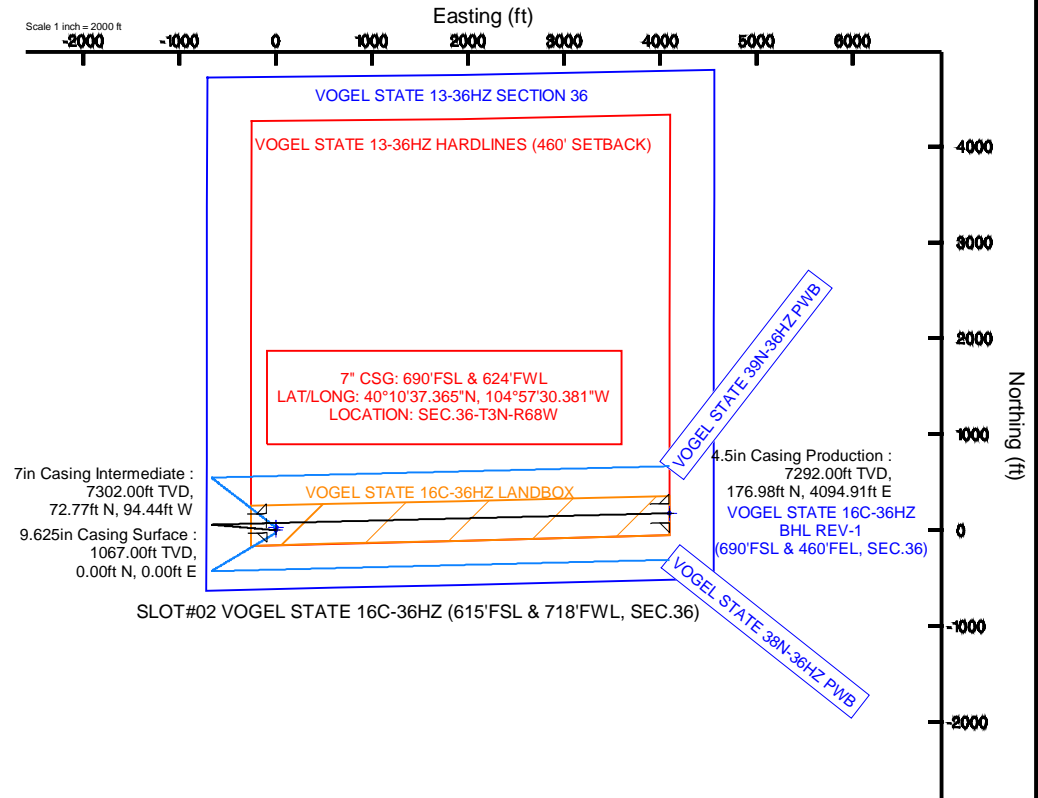
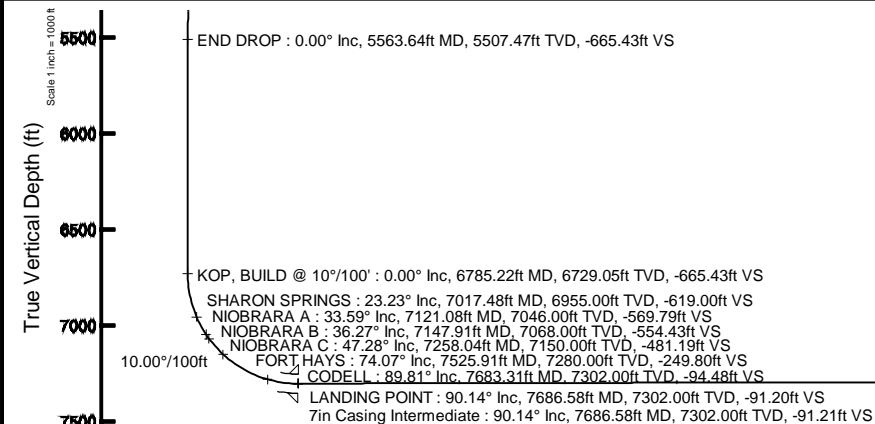
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	7686.58	NaviTrak	NaviTrak (Standard)		VOGEL STATE 16C-36HZ PWB
7686.58	11877.23	OnTrak	OnTrak (Standard)		VOGEL STATE 16C-36HZ PWB

## 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	275.000	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1200.00	0.000	275.000	1200.00	0.00	0.00	0.00	0.00
END NUDGE	1700.00	10.000	275.000	1697.47	3.79	-43.36	2.00	-43.15
BEGIN DROP	5063.64	10.000	275.000	5010.00	54.70	-625.22	0.00	-622.28
END DROP	5563.64	0.000	88.575	5507.47	58.49	-668.58	2.00	-665.43
KOP, BUILD @ 10°/100'	6785.22	0.000	88.575	6729.05	58.49	-668.58	0.00	-665.43
LANDING POINT	7686.58	90.137	88.575	7302.00	72.77	-94.43	10.00	-91.20
TOTAL DEPTH	11877.23	90.137	88.575	7292.00	176.98	4094.91	0.00	4098.73

## Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
VOGEL STATE 13-36HZ HARDLINES (460' SETBACK)		7098.00	29.95	2.72	3151422.83	1307760.54	40°10'36.942"N	104°57'29.129"W
VOGEL STATE 16C-36HZ BHL REV-1 (690'FSL & 460'FEL, SEC.36)	11877.23	7292.00	176.98	4094.91	3155513.86	1307932.57	40°10'38.392"N	104°56'36.409"W
VOGEL STATE 16C-36HZ LANDBOX		7292.00	0.00	0.00	3151420.29	1307730.57	40°10'36.646"N	104°57'29.164"W
VOGEL STATE 13-36HZ SECTION 36		7302.00	29.95	2.72	3151422.83	1307760.54	40°10'36.942"N	104°57'29.129"W



VOGEL STATE 16C-36HZ BHL REV-1 (690'FSL & 460'FEL, SEC.36)

4.5in Casing Production : 90.14° Inc, 11877.23ft MD, 7292.00ft TVD, 4098.73ft VS  
TOTAL DEPTH : 90.14° Inc, 11877.23ft MD, 7292.00ft TVD, 4098.73ft VS

Vertical Section (ft)

Azimuth 87.53° with reference 0.00 N, 0.00 E

Scale 1 inch = 1000 ft



# Planned Wellpath Report

VOGEL STATE 16C-36HZ (PERMIT REV-1)

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## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 VOGEL STATE 16C-36HZ (615'FSL & 718'FWL, SEC.36)
Area	COLORADO	Well	VOGEL STATE 16C-36HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOGEL STATE 16C-36HZ PWB
Facility	SEC.36-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	Robiale01
Scale	0.999958	Report Generated	01/Oct/2013 at 09:19
Convergence at slot	n/a	Database/Source file	WA_ANADARKO/VOGEL_STATE_16C-36HZ_PWB.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-29.95	-2.72	3151420.30	1307730.58	40°10'36.646"N	104°57'29.164"W
Facility Reference Pt			3151422.83	1307760.54	40°10'36.942"N	104°57'29.129"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	4835.00ft
Horizontal Reference Pt	Slot	PERMIT (17' KB) (RKB) to Mean Sea Level	4835.00ft
Vertical Reference Pt	PERMIT (17' KB) (RKB)	PERMIT (17' KB) (RKB) to Mud Line at Slot (SLOT#02 VOGEL STATE 16C-36HZ (615'FSL & 718'FWL, SEC.36))	4835.00ft
MD Reference Pt	PERMIT (17' KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	87.53°



# Planned Wellpath Report

## VOGEL STATE 16C-36HZ (PERMIT REV-1)

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### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 VOGEL STATE 16C-36HZ (615'FSL & 718'FWL, SEC.36)
Area	COLORADO	Well	VOGEL STATE 16C-36HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOGEL STATE 16C-36HZ PWB
Facility	SEC.36-T3N-R68W		

### WELLPATH DATA (136 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	275.000	0.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	
17.00	0.000	275.000	17.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	TIE ON
117.00†	0.000	275.000	117.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	
217.00†	0.000	275.000	217.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	
317.00†	0.000	275.000	317.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	
417.00†	0.000	275.000	417.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	
517.00†	0.000	275.000	517.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	
617.00†	0.000	275.000	617.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	
717.00†	0.000	275.000	717.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	
817.00†	0.000	275.000	817.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	
917.00†	0.000	275.000	917.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	
1017.00†	0.000	275.000	1017.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	FOX HILLS BASE
1117.00†	0.000	275.000	1117.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	
1200.00	0.000	275.000	1200.00	0.00	0.00	0.00	40°10'36.646"N	104°57'29.164"W	0.00	BEGIN NUDGE
1217.00†	0.340	275.000	1217.00	-0.05	0.00	-0.05	40°10'36.646"N	104°57'29.165"W	2.00	
1317.00†	2.340	275.000	1316.97	-2.37	0.21	-2.38	40°10'36.648"N	104°57'29.195"W	2.00	
1417.00†	4.340	275.000	1416.79	-8.14	0.72	-8.18	40°10'36.653"N	104°57'29.269"W	2.00	
1517.00†	6.340	275.000	1516.35	-17.37	1.53	-17.45	40°10'36.661"N	104°57'29.389"W	2.00	
1617.00†	8.340	275.000	1615.53	-30.04	2.64	-30.18	40°10'36.672"N	104°57'29.553"W	2.00	
1700.00	10.000	275.000	1697.47	-43.15	3.79	-43.36	40°10'36.683"N	104°57'29.723"W	2.00	END NUDGE
1717.00†	10.000	275.000	1714.21	-46.08	4.05	-46.30	40°10'36.686"N	104°57'29.760"W	0.00	
1817.00†	10.000	275.000	1812.69	-63.30	5.56	-63.60	40°10'36.701"N	104°57'29.983"W	0.00	
1917.00†	10.000	275.000	1911.17	-80.51	7.08	-80.90	40°10'36.716"N	104°57'30.206"W	0.00	
2017.00†	10.000	275.000	2009.65	-97.73	8.59	-98.19	40°10'36.731"N	104°57'30.429"W	0.00	
2117.00†	10.000	275.000	2108.13	-114.95	10.10	-115.49	40°10'36.746"N	104°57'30.652"W	0.00	
2217.00†	10.000	275.000	2206.61	-132.17	11.62	-132.79	40°10'36.761"N	104°57'30.875"W	0.00	
2317.00†	10.000	275.000	2305.09	-149.38	13.13	-150.09	40°10'36.776"N	104°57'31.098"W	0.00	
2417.00†	10.000	275.000	2403.57	-166.60	14.64	-167.39	40°10'36.791"N	104°57'31.320"W	0.00	
2517.00†	10.000	275.000	2502.05	-183.82	16.16	-184.69	40°10'36.806"N	104°57'31.543"W	0.00	
2617.00†	10.000	275.000	2600.53	-201.03	17.67	-201.99	40°10'36.821"N	104°57'31.766"W	0.00	
2717.00†	10.000	275.000	2699.01	-218.25	19.18	-219.29	40°10'36.836"N	104°57'31.989"W	0.00	
2817.00†	10.000	275.000	2797.50	-235.47	20.70	-236.58	40°10'36.851"N	104°57'32.212"W	0.00	
2917.00†	10.000	275.000	2895.98	-252.69	22.21	-253.88	40°10'36.865"N	104°57'32.435"W	0.00	
3017.00†	10.000	275.000	2994.46	-269.90	23.73	-271.18	40°10'36.880"N	104°57'32.658"W	0.00	
3117.00†	10.000	275.000	3092.94	-287.12	25.24	-288.48	40°10'36.895"N	104°57'32.880"W	0.00	
3217.00†	10.000	275.000	3191.42	-304.34	26.75	-305.78	40°10'36.910"N	104°57'33.103"W	0.00	
3317.00†	10.000	275.000	3289.90	-321.56	28.27	-323.08	40°10'36.925"N	104°57'33.326"W	0.00	
3417.00†	10.000	275.000	3388.38	-338.77	29.78	-340.38	40°10'36.940"N	104°57'33.549"W	0.00	
3517.00†	10.000	275.000	3486.86	-355.99	31.29	-357.68	40°10'36.955"N	104°57'33.772"W	0.00	
3617.00†	10.000	275.000	3585.34	-373.21	32.81	-374.97	40°10'36.970"N	104°57'33.995"W	0.00	
3717.00†	10.000	275.000	3683.82	-390.42	34.32	-392.27	40°10'36.985"N	104°57'34.218"W	0.00	
3817.00†	10.000	275.000	3782.30	-407.64	35.83	-409.57	40°10'37.000"N	104°57'34.440"W	0.00	
3917.00†	10.000	275.000	3880.78	-424.86	37.35	-426.87	40°10'37.015"N	104°57'34.663"W	0.00	
4017.00†	10.000	275.000	3979.26	-442.08	38.86	-444.17	40°10'37.030"N	104°57'34.886"W	0.00	
4080.70†	10.000	275.000	4042.00	-453.04	39.82	-455.19	40°10'37.039"N	104°57'35.028"W	0.00	SUSSEX



# Planned Wellpath Report

## VOGEL STATE 16C-36HZ (PERMIT REV-1)

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### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 VOGEL STATE 16C-36HZ (615'FSL & 718'FWL, SEC.36)
Area	COLORADO	Well	VOGEL STATE 16C-36HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOGEL STATE 16C-36HZ PWB
Facility	SEC.36-T3N-R68W		

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

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4117.00†	10.000	275.000	4077.75	-459.29	40.37	-461.47	40°10'37.045"N	104°57'35.109"W	0.00	
4217.00†	10.000	275.000	4176.23	-476.51	41.89	-478.77	40°10'37.060"N	104°57'35.332"W	0.00	
4317.00†	10.000	275.000	4274.71	-493.73	43.40	-496.06	40°10'37.075"N	104°57'35.555"W	0.00	
4417.00†	10.000	275.000	4373.19	-510.95	44.91	-513.36	40°10'37.090"N	104°57'35.778"W	0.00	
4517.00†	10.000	275.000	4471.67	-528.16	46.43	-530.66	40°10'37.105"N	104°57'36.001"W	0.00	
4617.00†	10.000	275.000	4570.15	-545.38	47.94	-547.96	40°10'37.120"N	104°57'36.223"W	0.00	
4675.74†	10.000	275.000	4628.00	-555.49	48.83	-558.12	40°10'37.128"N	104°57'36.354"W	0.00	SHANNON
4717.00†	10.000	275.000	4668.63	-562.60	49.45	-565.26	40°10'37.135"N	104°57'36.446"W	0.00	
4817.00†	10.000	275.000	4767.11	-579.81	50.97	-582.56	40°10'37.150"N	104°57'36.669"W	0.00	
4917.00†	10.000	275.000	4865.59	-597.03	52.48	-599.86	40°10'37.165"N	104°57'36.892"W	0.00	
5017.00†	10.000	275.000	4964.07	-614.25	53.99	-617.16	40°10'37.179"N	104°57'37.115"W	0.00	
5063.64	10.000	275.000	5010.00	-622.28	54.70	-625.22	40°10'37.186"N	104°57'37.219"W	0.00	BEGIN DROP
5117.00†	8.933	275.000	5062.64	-630.98	55.46	-633.97	40°10'37.194"N	104°57'37.331"W	2.00	
5217.00†	6.933	275.000	5161.67	-644.66	56.67	-647.71	40°10'37.206"N	104°57'37.508"W	2.00	
5317.00†	4.933	275.000	5261.13	-654.91	57.57	-658.01	40°10'37.215"N	104°57'37.641"W	2.00	
5417.00†	2.933	275.000	5360.89	-661.71	58.17	-664.84	40°10'37.221"N	104°57'37.729"W	2.00	
5517.00†	0.933	275.000	5460.83	-665.05	58.46	-668.20	40°10'37.224"N	104°57'37.772"W	2.00	
5563.64	0.000	88.575	5507.47	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	2.00	END DROP
5617.00†	0.000	88.575	5560.83	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	
5717.00†	0.000	88.575	5660.83	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	
5817.00†	0.000	88.575	5760.83	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	
5917.00†	0.000	88.575	5860.83	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	
6017.00†	0.000	88.575	5960.83	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	
6117.00†	0.000	88.575	6060.83	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	
6217.00†	0.000	88.575	6160.83	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	
6317.00†	0.000	88.575	6260.83	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	
6417.00†	0.000	88.575	6360.83	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	
6517.00†	0.000	88.575	6460.83	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	
6617.00†	0.000	88.575	6560.83	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	
6717.00†	0.000	88.575	6660.83	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	
6785.22	0.000	88.575	6729.05	-665.43	58.49	-668.58	40°10'37.224"N	104°57'37.777"W	0.00	KOP, BUILD @ 10°/100'
6817.00†	3.178	88.575	6760.81	-664.55	58.52	-667.70	40°10'37.224"N	104°57'37.766"W	10.00	
6917.00†	13.178	88.575	6859.67	-650.34	58.87	-653.50	40°10'37.228"N	104°57'37.583"W	10.00	
7017.00†	23.178	88.575	6954.56	-619.19	59.64	-622.35	40°10'37.235"N	104°57'37.182"W	10.00	
7017.48†	23.226	88.575	6955.00	-619.00	59.65	-622.16	40°10'37.235"N	104°57'37.179"W	10.00	SHARON SPRINGS
7117.00†	33.178	88.575	7042.60	-572.04	60.82	-575.20	40°10'37.247"N	104°57'36.574"W	10.00	
7121.08†	33.586	88.575	7046.00	-569.79	60.87	-572.96	40°10'37.247"N	104°57'36.545"W	10.00	NIOBRARA A
7147.91†	36.270	88.575	7068.00	-554.43	61.25	-557.60	40°10'37.251"N	104°57'36.348"W	10.00	NIOBRARA B
7217.00†	43.178	88.575	7121.10	-510.32	62.35	-513.49	40°10'37.262"N	104°57'35.779"W	10.00	
7258.04†	47.282	88.575	7150.00	-481.19	63.08	-484.37	40°10'37.269"N	104°57'35.404"W	10.00	NIOBRARA C
7317.00†	53.178	88.575	7187.70	-435.90	64.20	-439.08	40°10'37.280"N	104°57'34.821"W	10.00	
7417.00†	63.178	88.575	7240.36	-351.05	66.31	-354.25	40°10'37.301"N	104°57'33.728"W	10.00	
7517.00†	73.178	88.575	7277.49	-258.35	68.62	-261.56	40°10'37.324"N	104°57'32.534"W	10.00	
7525.91†	74.070	88.575	7280.00	-249.80	68.83	-253.01	40°10'37.326"N	104°57'32.423"W	10.00	FORT HAYS
7617.00†	83.178	88.575	7297.95	-160.61	71.05	-163.83	40°10'37.348"N	104°57'31.275"W	10.00	



# Planned Wellpath Report

VOGEL STATE 16C-36HZ (PERMIT REV-1)

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## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 VOGEL STATE 16C-36HZ (615'FSL & 718'FWL, SEC.36)
Area	COLORADO	Well	VOGEL STATE 16C-36HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOGEL STATE 16C-36HZ PWB
Facility	SEC.36-T3N-R68W		

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

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7683.31†	89.809	88.575	7302.00	-94.48	72.69	-97.71	40°10'37.364"N	104°57'30.423"W	10.00	CODELL
7686.58	90.137	88.575	7302.00	-91.20	72.77	-94.43	40°10'37.365"N	104°57'30.381"W	10.00	LANDING POINT
7687.23†	90.137	88.575	7302.00	-90.55	72.79	-93.78	40°10'37.365"N	104°57'30.372"W	0.00	CODELL
7717.00†	90.137	88.575	7301.93	-60.79	73.53	-64.03	40°10'37.373"N	104°57'29.989"W	0.00	
7817.00†	90.137	88.575	7301.69	39.19	76.02	35.94	40°10'37.397"N	104°57'28.701"W	0.00	
7917.00†	90.137	88.575	7301.45	139.18	78.50	135.91	40°10'37.422"N	104°57'27.413"W	0.00	
8017.00†	90.137	88.575	7301.21	239.16	80.99	235.88	40°10'37.446"N	104°57'26.125"W	0.00	
8117.00†	90.137	88.575	7300.97	339.14	83.48	335.85	40°10'37.471"N	104°57'24.837"W	0.00	
8217.00†	90.137	88.575	7300.74	439.12	85.96	435.82	40°10'37.495"N	104°57'23.549"W	0.00	
8317.00†	90.137	88.575	7300.50	539.11	88.45	535.79	40°10'37.520"N	104°57'22.261"W	0.00	
8417.00†	90.137	88.575	7300.26	639.09	90.94	635.76	40°10'37.545"N	104°57'20.974"W	0.00	
8517.00†	90.137	88.575	7300.02	739.07	93.42	735.72	40°10'37.569"N	104°57'19.686"W	0.00	
8617.00†	90.137	88.575	7299.78	839.06	95.91	835.69	40°10'37.594"N	104°57'18.398"W	0.00	
8717.00†	90.137	88.575	7299.54	939.04	98.40	935.66	40°10'37.618"N	104°57'17.110"W	0.00	
8817.00†	90.137	88.575	7299.30	1039.02	100.88	1035.63	40°10'37.643"N	104°57'15.822"W	0.00	
8917.00†	90.137	88.575	7299.06	1139.00	103.37	1135.60	40°10'37.667"N	104°57'14.534"W	0.00	
9017.00†	90.137	88.575	7298.83	1238.99	105.86	1235.57	40°10'37.692"N	104°57'13.246"W	0.00	
9117.00†	90.137	88.575	7298.59	1338.97	108.34	1335.54	40°10'37.716"N	104°57'11.958"W	0.00	
9217.00†	90.137	88.575	7298.35	1438.95	110.83	1435.51	40°10'37.741"N	104°57'10.670"W	0.00	
9317.00†	90.137	88.575	7298.11	1538.94	113.32	1535.48	40°10'37.765"N	104°57'09.382"W	0.00	
9417.00†	90.137	88.575	7297.87	1638.92	115.80	1635.44	40°10'37.790"N	104°57'08.095"W	0.00	
9517.00†	90.137	88.575	7297.63	1738.90	118.29	1735.41	40°10'37.814"N	104°57'06.807"W	0.00	
9617.00†	90.137	88.575	7297.39	1838.88	120.78	1835.38	40°10'37.839"N	104°57'05.519"W	0.00	
9717.00†	90.137	88.575	7297.16	1938.87	123.26	1935.35	40°10'37.863"N	104°57'04.231"W	0.00	
9817.00†	90.137	88.575	7296.92	2038.85	125.75	2035.32	40°10'37.888"N	104°57'02.943"W	0.00	
9917.00†	90.137	88.575	7296.68	2138.83	128.24	2135.29	40°10'37.912"N	104°57'01.655"W	0.00	
10017.00†	90.137	88.575	7296.44	2238.82	130.72	2235.26	40°10'37.937"N	104°57'00.367"W	0.00	
10117.00†	90.137	88.575	7296.20	2338.80	133.21	2335.23	40°10'37.961"N	104°56'59.079"W	0.00	
10217.00†	90.137	88.575	7295.96	2438.78	135.70	2435.19	40°10'37.986"N	104°56'57.791"W	0.00	
10317.00†	90.137	88.575	7295.72	2538.77	138.18	2535.16	40°10'38.010"N	104°56'56.503"W	0.00	
10417.00†	90.137	88.575	7295.49	2638.75	140.67	2635.13	40°10'38.035"N	104°56'55.216"W	0.00	
10517.00†	90.137	88.575	7295.25	2738.73	143.16	2735.10	40°10'38.059"N	104°56'53.928"W	0.00	
10617.00†	90.137	88.575	7295.01	2838.71	145.64	2835.07	40°10'38.084"N	104°56'52.640"W	0.00	
10717.00†	90.137	88.575	7294.77	2938.70	148.13	2935.04	40°10'38.108"N	104°56'51.352"W	0.00	
10817.00†	90.137	88.575	7294.53	3038.68	150.62	3035.01	40°10'38.133"N	104°56'50.064"W	0.00	
10917.00†	90.137	88.575	7294.29	3138.66	153.10	3134.98	40°10'38.157"N	104°56'48.776"W	0.00	
11017.00†	90.137	88.575	7294.05	3238.65	155.59	3234.94	40°10'38.181"N	104°56'47.488"W	0.00	
11117.00†	90.137	88.575	7293.81	3338.63	158.08	3334.91	40°10'38.206"N	104°56'46.200"W	0.00	
11217.00†	90.137	88.575	7293.58	3438.61	160.56	3434.88	40°10'38.230"N	104°56'44.912"W	0.00	
11317.00†	90.137	88.575	7293.34	3538.59	163.05	3534.85	40°10'38.255"N	104°56'43.624"W	0.00	
11417.00†	90.137	88.575	7293.10	3638.58	165.54	3634.82	40°10'38.279"N	104°56'42.337"W	0.00	
11517.00†	90.137	88.575	7292.86	3738.56	168.02	3734.79	40°10'38.304"N	104°56'41.049"W	0.00	
11617.00†	90.137	88.575	7292.62	3838.54	170.51	3834.76	40°10'38.328"N	104°56'39.761"W	0.00	
11717.00†	90.137	88.575	7292.38	3938.53	173.00	3934.73	40°10'38.352"N	104°56'38.473"W	0.00	
11817.00†	90.137	88.575	7292.14	4038.51	175.48	4034.69	40°10'38.377"N	104°56'37.185"W	0.00	





# Planned Wellpath Report

VOGEL STATE 16C-36HZ (PERMIT REV-1)

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## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 VOGEL STATE 16C-36HZ (615'FSL & 718'FWL, SEC.36)
Area	COLORADO	Well	VOGEL STATE 16C-36HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOGEL STATE 16C-36HZ PWB
Facility	SEC.36-T3N-R68W		

## WELLPATH DATA (136 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11877.23	90.137	88.575	7292.00 <sup>1</sup>	4098.73	176.98	4094.91	40°10'38.392"N	104°56'36.409"W	0.00	TOTAL DEPTH

## HOLE & CASING SECTIONS -

Ref Wellbore: VOGEL STATE 16C-36HZ PWB Ref Wellpath: VOGEL STATE 16C-36HZ (PERMIT REV-1)

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	1067.00	1050.00	17.00	1067.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	17.00	1067.00	1050.00	17.00	1067.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1067.00	7686.58	6619.58	1067.00	7302.00	0.00	0.00	72.77	-94.44
7in Casing Intermediate	17.00	7686.58	7669.58	17.00	7302.00	0.00	0.00	72.77	-94.44
6.125in Open Hole	7686.58	11877.23	4190.65	7302.00	7292.00	72.77	-94.44	176.98	4094.91
4.5in Casing Production	17.00	11877.23	11860.23	17.00	7292.00	0.00	0.00	176.98	4094.91

## TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
VOGEL STATE 13-36HZ HARDLINES (460' SETBACK)		7098.00	29.95	2.72	3151422.83	1307760.54	40°10'36.942"N	104°57'29.129"W	polygon
1) VOGEL STATE 16C-36HZ BHL REV-1 (690'FSL & 460'FEL, SEC.36)	11877.23	7292.00	176.98	4094.91	3155513.86	1307932.57	40°10'38.392"N	104°56'36.409"W	point
VOGEL STATE 16C-36HZ LANDBOX		7292.00	0.00	0.00	3151420.29	1307730.57	40°10'36.646"N	104°57'29.164"W	polygon
VOGEL STATE 13-36HZ SECTION 36		7302.00	29.95	2.72	3151422.83	1307760.54	40°10'36.942"N	104°57'29.129"W	polygon

## SURVEY PROGRAM - Ref Wellbore: VOGEL STATE 16C-36HZ PWB Ref Wellpath: VOGEL STATE 16C-36HZ (PERMIT REV-1)

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	7686.58	NaviTrak (Standard)		VOGEL STATE 16C-36HZ PWB
7686.58	11877.23	OnTrak (Standard)		VOGEL STATE 16C-36HZ PWB



# Planned Wellpath Report

## VOGEL STATE 16C-36HZ (PERMIT REV-1)

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### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 VOGEL STATE 16C-36HZ (615'FSL & 718'FWL, SEC.36)
Area	COLORADO	Well	VOGEL STATE 16C-36HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOGEL STATE 16C-36HZ PWB
Facility	SEC.36-T3N-R68W		

### WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1017.00	0.000	275.000	1017.00	FOX HILLS BASE
4080.70	10.000	275.000	4042.00	SUSSEX
4675.74	10.000	275.000	4628.00	SHANNON
7017.48	23.226	88.575	6955.00	SHARON SPRINGS
7121.08	33.586	88.575	7046.00	NIOBRARA A
7147.91	36.270	88.575	7068.00	NIOBRARA B
7258.04	47.282	88.575	7150.00	NIOBRARA C
7525.91	74.070	88.575	7280.00	FORT HAYS
7683.31	89.809	88.575	7302.00	CODELL
7687.23	90.137	88.575	7302.00	CODELL

### DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	275.000	17.00	TIE ON
1200.00	0.000	275.000	1200.00	BEGIN NUDGE
1700.00	10.000	275.000	1697.47	END NUDGE
5063.64	10.000	275.000	5010.00	BEGIN DROP
5563.64	0.000	88.575	5507.47	END DROP
6785.22	0.000	88.575	6729.05	KOP, BUILD @ 10°/100'
7686.58	90.137	88.575	7302.00	LANDING POINT
11877.23	90.137	88.575	7292.00	TOTAL DEPTH