

OPERATOR
WELL/LEASE
COUNTY

YATES PETROLEUM CORPORATION
GEM DANDY BCG STATE COM # 2
EDDY

STATE OF NEW MEXICO
DEVIATION REPORT

205	0.38
386	0.25
623	0.43
937	0.50
1,255	0.48
1,542	0.41
1,797	0.25
2,100	0.18
2,449	0.58
2,735	0.20
3,053	0.90
3,370	0.38
3,720	1.70
4,355	1.14
4,641	0.85
4,959	0.30
5,277	0.52
5,563	0.81
5,850	0.46

30-015-37892

STATE OF TEXAS

COUNTY OF MIDLAND

BY: Cassandra Ramos

The foregoing instrument was acknowledged before me on
Ramos on behalf of Patterson-UTI Drilling Company LLC.

Cynthia Diane Smith
Notary Public for Midland County, Texas
My Commission Expires:





Yates Petroleum Corporation

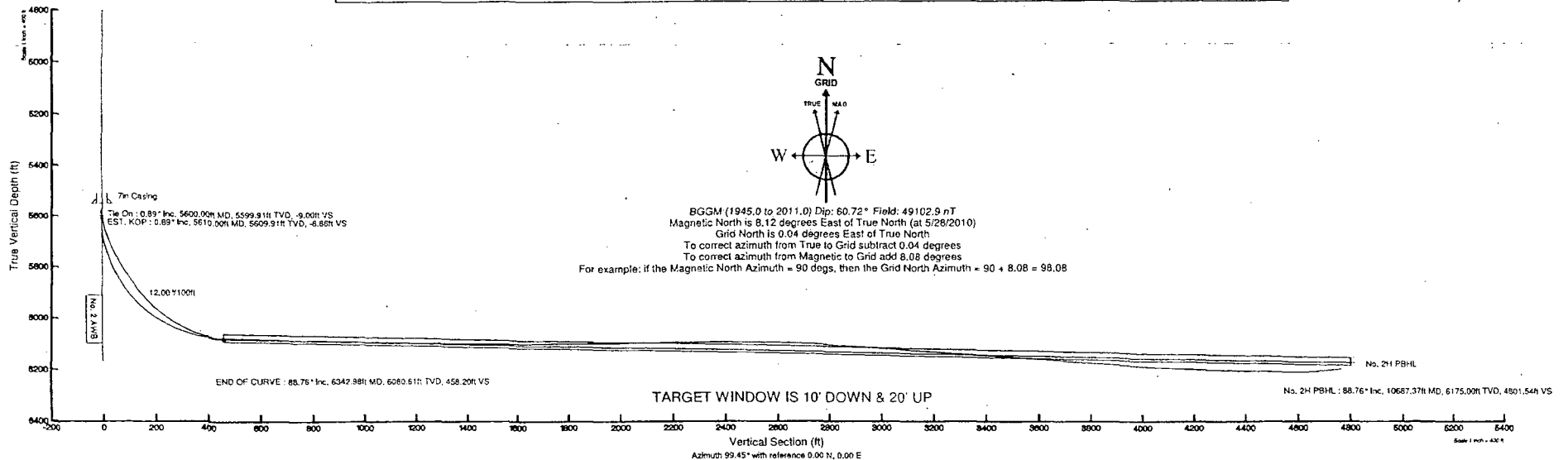
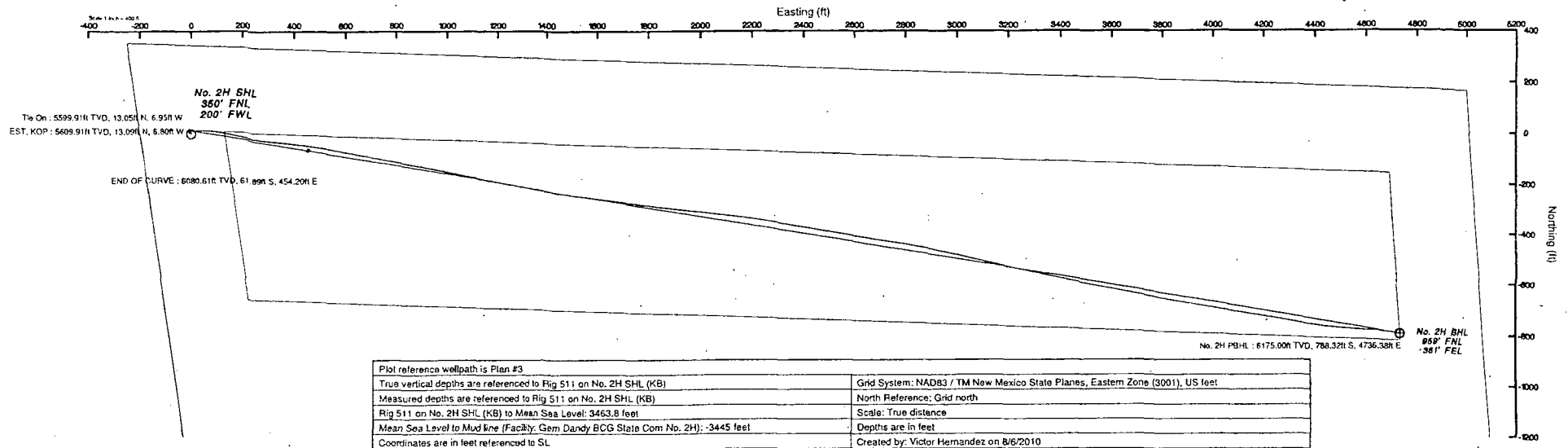
Location: Eddy County, NM
Field: (Gem) Sec 35, T16S, R27E
Facility: Gem Dandy BCG State Com No. 2H

Slot: No. 2H SHL
Well: No. 2H
Wellbore: No. 2H PWB



Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (%100ft)	VS (ft)
Tie On	5600.00	0.890	73.260	5599.91	13.05	-6.95	0.00	-9.00
EST. KOP	5610.00	0.890	73.260	5609.91	13.09	-6.80	0.00	-8.86
END OF CURVE	6342.98	88.755	99.628	6080.61	-61.89	454.20	12.00	458.20
No. 2H PBHL	10687.37	88.755	99.628	6175.00	-788.32	4736.38	0.00	4801.54





Actual Wellpath Report

No. 2H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Yates Petroleum Corporation	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Gem) Sec 35, T16S, R27E	Wellbore	No. 2H AWB
Facility	Gem Dandy BCG State Com No. 2H	Sidetrack from	No. 2 AWB at 5400.00 MD

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.99991	Report Generated	8/6/2010 at 8:52:40 AM
Convergence at slot	0.04° East	Database/Source file	WA_Midland/No. 2H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	564662.81	685872.98	32°53'07.660"N	104°15'26.454"W
Facility Reference Pt			564662.81	685872.98	32°53'07.660"N	104°15'26.454"W
Field Reference Pt			564662.81	685872.98	32°53'07.660"N	104°15'26.454"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig 511 on No. 2H SHL (KB) to GL	18.80ft
Horizontal Reference Pt	SL	Rig 511 on No. 2H SHL (KB) to Mean Sea Level	3463.80ft
Vertical Reference Pt	Rig 511 on No. 2H SHL (KB)	GL to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig 511 on No. 2H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	99.45°



Actual Wellpath Report

No. 2H AWP

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REFERENCE WELLPATH IDENTIFICATION

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Field	(Gem) Sec 35, T16S, R27E	Wellbore	No. 2H AWP
Facility	Gem Dandy BCG State Com No. 2H	Sidetrack from	No. 2 AWP at 5400.00 MD

WELLPATH DATA (103 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
0.00	0.000	51.030	0.00	0.00	0.00	0.00	564662.81	685872.98	32°53'07.660"N	104°15'26.454"W	0.00
200.00	0.140	51.030	200.00	0.16	0.15	0.19	564663.00	685873.14	32°53'07.661"N	104°15'26.451"W	0.07
400.00	0.050	196.920	400.00	0.31	0.22	0.35	564663.16	685873.21	32°53'07.662"N	104°15'26.449"W	0.09
600.00	0.120	238.470	600.00	0.14	0.03	0.15	564662.96	685873.01	32°53'07.660"N	104°15'26.452"W	0.04
800.00	0.220	323.090	800.00	0.29	0.23	0.26	564662.55	685873.21	32°53'07.662"N	104°15'26.457"W	0.12
1000.00	0.180	74.460	1000.00	-0.29	0.62	-0.19	564662.62	685873.60	32°53'07.666"N	104°15'26.456"W	0.17
1200.00	0.290	21.290	1200.00	0.10	1.18	0.30	564663.11	685874.16	32°53'07.671"N	104°15'26.450"W	0.12
1400.00	0.150	52.220	1400.00	0.38	1.81	0.69	564663.50	685874.79	32°53'07.677"N	104°15'26.445"W	0.09
1600.00	0.220	94.430	1599.99	0.94	1.94	1.28	564664.09	685874.92	32°53'07.679"N	104°15'26.439"W	0.07
1800.00	0.070	174.370	1799.99	1.36	1.79	1.68	564664.49	685874.77	32°53'07.677"N	104°15'26.434"W	0.11
2000.00	0.040	41.100	1999.99	1.43	1.72	1.73	564664.54	685874.70	32°53'07.677"N	104°15'26.433"W	0.05
2200.00	0.090	163.060	2199.99	1.53	1.62	1.82	564664.63	685874.60	32°53'07.676"N	104°15'26.432"W	0.06
2400.00	0.110	145.150	2399.99	1.74	1.31	1.98	564664.79	685874.30	32°53'07.673"N	104°15'26.430"W	0.02
2600.00	0.150	107.760	2599.99	2.13	1.07	2.34	564665.15	685874.06	32°53'07.670"N	104°15'26.426"W	0.05
2800.00	0.240	339.040	2799.99	2.14	1.45	2.43	564665.22	685874.43	32°53'07.674"N	104°15'26.425"W	0.20
3000.00	0.340	344.870	2999.99	1.65	2.48	2.08	564664.89	685875.46	32°53'07.684"N	104°15'26.429"W	0.03
3200.00	0.310	308.950	3199.99	0.93	3.39	1.51	564664.32	685876.38	32°53'07.693"N	104°15'26.436"W	0.10
3400.00	0.210	314.750	3399.98	0.16	3.99	0.83	564663.64	685876.97	32°53'07.699"N	104°15'26.444"W	0.05
3600.00	0.300	317.960	3599.98	-0.55	4.64	0.22	564663.03	685877.62	32°53'07.705"N	104°15'26.451"W	0.05
3800.00	0.390	307.310	3799.98	1.56	5.44	0.68	564662.13	685878.42	32°53'07.713"N	104°15'26.461"W	0.06
4000.00	0.460	317.110	3999.97	-2.80	6.44	-1.76	564661.05	685879.42	32°53'07.723"N	104°15'26.474"W	0.05
4200.00	0.370	348.140	4199.97	-3.67	7.66	-2.44	564660.37	685880.64	32°53'07.735"N	104°15'26.482"W	0.12
4400.00	0.620	309.630	4399.96	-4.84	8.98	-3.41	564659.40	685881.97	32°53'07.748"N	104°15'26.493"W	0.20
4600.00	0.720	306.020	4599.95	-6.90	10.41	-5.26	564657.55	685883.39	32°53'07.763"N	104°15'26.515"W	0.05
4800.00	0.520	283.430	4799.94	8.93	11.36	7.16	564655.65	685884.34	32°53'07.772"N	104°15'26.537"W	0.16
5000.00	0.240	290.250	4999.93	-10.24	11.72	-8.43	564654.38	685884.70	32°53'07.776"N	104°15'26.552"W	0.14
5200.00	0.290	302.780	5199.93	-11.12	12.14	-9.25	564653.56	685885.12	32°53'07.780"N	104°15'26.562"W	0.04
5400.00	0.360	81.300	5399.93	-10.99	12.51	-9.06	564653.75	685885.49	32°53'07.783"N	104°15'26.560"W	0.30
5524.00	0.900	87.700	5523.92	-9.66	12.60	-7.70	564655.11	685885.59	32°53'07.784"N	104°15'26.544"W	0.44
5555.00	1.000	79.000	5554.92	9.17	12.67	7.19	564655.62	685885.65	32°53'07.785"N	104°15'26.538"W	0.57



Actual Wellpath Report

No. 2H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Yates Petroleum Corporation	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Gem) Sec 35, T16S, R27E	Wellbore	No. 2H AWB
Facility	Gem Dandy BCG State Com No. 2H	Sidetrack from	No. 2 AWB at 5400.00 MD

WELLPATH DATA (103 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
5587.00	3.900	77.400	5586.88	-7.90	12.96	-5.85	564656.96	685885.94	32°53'07.788"N	104°15'26.522"W	9.06
5619.00	9.400	86.100	5618.66	-4.35	13.37	-2.18	564660.63	685886.35	32°53'07.792"N	104°15'26.479"W	17.42
5651.00	15.400	89.600	5649.90	2.39	13.58	4.68	564667.49	685886.56	32°53'07.794"N	104°15'26.399"W	18.89
5683.00	19.400	86.000	5680.43	11.75	13.98	14.24	564677.04	685886.96	32°53'07.798"N	104°15'26.287"W	12.94
5715.00	23.100	87.700	5710.25	23.07	14.60	25.81	564688.62	685887.58	32°53'07.804"N	104°15'26.151"W	11.72
5745.00	25.400	92.300	5737.60	35.22	14.58	38.13	564700.93	685887.56	32°53'07.804"N	104°15'26.006"W	9.92
5777.00	28.000	92.900	5766.18	49.49	13.92	52.49	564715.29	685886.91	32°53'07.797"N	104°15'25.838"W	8.17
5809.00	31.000	94.000	5794.03	65.16	12.97	68.21	564731.02	685885.95	32°53'07.787"N	104°15'25.654"W	9.53
5840.00	33.000	96.000	5820.32	81.54	11.53	84.58	564747.38	685884.51	32°53'07.773"N	104°15'25.462"W	7.30
5872.00	34.600	98.700	5846.91	99.32	9.24	102.23	564765.03	685882.23	32°53'07.750"N	104°15'25.255"W	6.86
5904.00	36.300	100.800	5872.98	117.88	6.10	120.51	564783.31	685879.08	32°53'07.719"N	104°15'25.040"W	6.53
5936.00	39.000	101.500	5898.32	137.41	2.31	139.69	564802.48	685875.30	32°53'07.681"N	104°15'24.816"W	8.54
5967.00	42.100	102.400	5921.87	157.54	-1.86	159.40	564822.20	685871.12	32°53'07.640"N	104°15'24.584"W	10.18
5999.00	45.200	102.100	5945.02	179.60	-6.55	180.98	564843.78	685866.43	32°53'07.593"N	104°15'24.331"W	9.71
6030.00	48.600	100.900	5966.20	202.22	11.05	203.16	564865.95	685861.93	32°53'07.549"N	104°15'24.071"W	11.33
6062.00	51.700	99.800	5986.70	226.78	-15.46	227.33	564890.12	685857.52	32°53'07.505"N	104°15'23.788"W	10.04
6094.00	55.100	97.500	6005.78	252.46	-19.31	252.72	564915.51	685853.67	32°53'07.467"N	104°15'23.490"W	12.09
6125.00	58.500	97.000	6022.75	278.38	-22.58	278.45	564941.23	685850.40	32°53'07.434"N	104°15'23.189"W	11.05
6156.00	63.600	97.000	6037.75	305.47	-25.89	305.36	564968.14	685847.10	32°53'07.401"N	104°15'22.873"W	16.45
6187.00	67.800	96.400	6050.51	333.68	29.18	333.42	564996.20	685843.80	32°53'07.368"N	104°15'22.544"W	13.66
6219.00	72.900	95.300	6061.26	363.75	-32.25	363.39	565026.16	685840.74	32°53'07.338"N	104°15'22.193"W	16.26
6250.00	78.000	96.600	6069.05	393.69	-35.36	393.22	565055.99	685837.62	32°53'07.307"N	104°15'21.843"W	16.94
6282.00	83.200	97.300	6074.27	425.22	-39.18	424.55	565087.32	685833.80	32°53'07.269"N	104°15'21.476"W	16.39
6314.00	88.400	98.600	6076.62	457.11	-43.60	456.14	565118.91	685829.39	32°53'07.225"N	104°15'21.105"W	16.75
6346.00	88.600	99.000	6077.45	489.10	-48.49	487.76	565150.52	685824.50	32°53'07.176"N	104°15'20.734"W	11.40
6378.00	88.200	99.200	6078.35	521.08	-53.55	519.34	565182.10	685819.44	32°53'07.126"N	104°15'20.364"W	1.40
6412.00	88.600	100.000	6079.30	555.07	-59.22	552.85	565215.61	685813.77	32°53'07.070"N	104°15'19.971"W	2.63
6443.00	88.000	100.700	6080.22	586.05	-64.78	583.33	565246.09	685808.21	32°53'07.014"N	104°15'19.614"W	2.97
6475.00	87.600	101.000	6081.44	618.02	-70.80	614.74	565277.49	685802.19	32°53'06.955"N	104°15'19.246"W	1.56
6507.00	88.900	101.400	6084.38	713.93	-89.44	708.86	565311.61	685783.55	32°53'06.770"N	104°15'18.142"W	1.42



Actual Wellpath Report

No. 2H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Yates Petroleum Corporation	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Gem) Sec 35, T16S, R27E	Wellbore	No. 2H AWB
Facility	Gem Dandy BCG State Com No. 2H	Sidetrack from	No. 2 AWB at 5400.00 MD

WELLPATH DATA (103 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
6669.00	88.700	100.900	6086.43	811.86	-108.39	804.99	565467.73	685764.61	32°53'06.581"N	104°15'17.015"W	0.55
6764.00	88.700	101.200	6088.58	906.80	-126.59	898.21	565560.93	685746.40	32°53'06.401"N	104°15'15.922"W	0.32
6860.00	88.700	102.000	6090.76	1002.71	-145.89	992.22	565654.94	685727.11	32°53'06.209"N	104°15'14.820"W	0.83
6955.00	88.800	101.400	6092.83	1097.61	-165.15	1085.22	565747.93	685707.85	32°53'06.018"N	104°15'13.729"W	0.64
7050.00	88.900	100.500	6094.74	1192.56	-183.19	1178.47	565841.18	685689.81	32°53'05.838"N	104°15'12.636"W	0.95
7146.00	89.500	100.200	6096.08	1288.54	-200.44	1272.90	565935.60	685672.57	32°53'05.667"N	104°15'11.529"W	0.70
7241.00	89.400	100.400	6096.99	1383.52	-217.42	1366.37	566029.05	685655.58	32°53'05.498"N	104°15'10.433"W	0.24
7337.00	89.400	98.900	6098.00	1479.51	-233.51	1461.00	566123.68	685639.49	32°53'05.338"N	104°15'09.323"W	1.56
7432.00	89.500	98.000	6098.91	1574.49	-247.47	1554.96	566217.63	685625.53	32°53'05.200"N	104°15'08.222"W	0.95
7528.00	90.500	97.800	6098.91	1670.46	-260.67	1650.05	566312.71	685612.34	32°53'05.068"N	104°15'07.107"W	1.06
7623.00	90.200	97.600	6098.33	1765.41	-273.39	1744.19	566406.84	685599.61	32°53'04.942"N	104°15'06.003"W	0.38
7718.00	90.300	97.100	6097.92	1860.35	-285.55	1838.41	566501.05	685587.46	32°53'04.821"N	104°15'04.898"W	0.54
7814.00	90.800	96.800	6096.99	1956.25	-297.16	1933.70	566596.33	685575.85	32°53'04.705"N	104°15'03.781"W	0.61
7909.00	91.000	97.000	6095.50	2051.14	-308.58	2028.00	566690.62	685564.44	32°53'04.591"N	104°15'02.675"W	0.30
8005.00	90.200	97.500	6094.50	2147.07	-320.69	2123.23	566785.84	685552.32	32°53'04.471"N	104°15'01.559"W	0.98
8101.00	90.300	99.300	6094.08	2243.05	-334.71	2218.19	566880.80	685538.30	32°53'04.331"N	104°15'00.445"W	1.88
8196.00	90.100	100.500	6093.75	2338.04	-351.05	2311.78	566974.37	685521.97	32°53'04.169"N	104°14'59.348"W	1.28
8289.00	89.700	100.000	6093.91	2431.03	-367.59	2403.29	567065.88	685505.42	32°53'04.005"N	104°14'58.275"W	0.69
8387.00	89.600	99.500	6094.51	2529.03	-384.19	2499.87	567162.45	685488.83	32°53'03.840"N	104°14'57.143"W	0.52
8482.00	88.700	100.600	6095.92	2624.01	-400.77	2593.40	567255.97	685472.25	32°53'03.675"N	104°14'56.046"W	1.50
8578.00	87.100	99.000	6099.43	2719.94	-417.10	2687.93	567350.49	685455.93	32°53'03.513"N	104°14'54.938"W	2.36
8673.00	85.600	99.500	6105.48	2814.74	-432.33	2781.50	567444.06	685440.69	32°53'03.361"N	104°14'53.841"W	1.66
8768.00	87.000	101.600	6111.61	2909.52	-449.69	2874.70	567537.24	685423.33	32°53'03.189"N	104°14'52.748"W	2.65
8864.00	85.800	103.000	6117.64	3005.21	-470.10	2968.30	567630.84	685402.93	32°53'02.986"N	104°14'51.651"W	1.92
8959.00	85.900	103.400	6124.52	3099.75	-491.74	3060.55	567723.08	685381.29	32°53'02.771"N	104°14'50.569"W	0.43
9055.00	86.000	103.600	6131.30	3195.27	-514.09	3153.67	567816.18	685358.94	32°53'02.549"N	104°14'49.478"W	0.23
9150.00	85.800	103.100	6138.09	3289.81	-535.97	3245.86	567908.37	685337.06	32°53'02.332"N	104°14'48.397"W	0.57
9246.00	86.100	102.500	6144.87	3385.41	-557.19	3339.24	568001.74	685315.85	32°53'02.121"N	104°14'47.302"W	0.70
9341.00	85.700	102.200	6151.66	3480.04	-577.45	3431.80	568094.30	685295.58	32°53'01.920"N	104°14'46.217"W	0.53
9436.00	85.700	101.900	6158.78	3574.68	-597.23	3524.45	568186.93	685275.81	32°53'01.724"N	104°14'45.130"W	0.31



Actual Wellpath Report

No. 2H AWP

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Area	Eddy County, NM	Well	No. 2H
Field	(Gem) Sec 35, T16S, R27E	Wellbore	No. 2H AWB
Facility	Gem Dandy BCG State Com No. 2H	Sidetrack from	No. 2 AWB at 5400.00 MD

WELLPATH DATA (103 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
9531.00	85.300	100.700	6166.24	3669.33	-615.79	3617.32	568279.80	685257.25	32°53'01.539"N	104°14'44.042"W	1.33
9634.00	86.200	100.800	6173.87	3772.02	-634.95	3718.23	568380.70	685238.10	32°53'01.349"N	104°14'42.858"W	0.88
9729.00	86.200	100.300	6180.17	3866.80	-652.30	3811.42	568473.88	685220.74	32°53'01.176"N	104°14'41.766"W	0.53
9825.00	86.300	100.500	6186.45	3962.58	-669.59	3905.64	568568.09	685203.45	32°53'01.004"N	104°14'40.661"W	0.23
9921.00	86.700	100.000	6192.31	4058.39	-686.65	3999.93	568662.37	685186.40	32°53'00.835"N	104°14'39.556"W	0.67
10016.00	87.300	99.300	6197.28	4153.26	-702.55	4093.46	568755.89	685170.50	32°53'00.677"N	104°14'38.459"W	0.97
10111.00	88.000	98.700	6201.17	4248.17	-717.40	4187.21	568849.63	685155.65	32°53'00.529"N	104°14'37.360"W	0.97
10207.00	88.200	100.600	6204.36	4344.12	-733.48	4281.79	568944.21	685139.57	32°53'00.369"N	104°14'36.251"W	1.99
10303.00	88.300	99.500	6207.29	4440.06	-750.22	4376.28	569038.68	685122.83	32°53'00.203"N	104°14'35.143"W	1.15
10398.00	88.500	99.600	6209.94	4534.96	-762.70	4470.40	569132.80	685110.36	32°53'00.078"N	104°14'34.040"W	2.11
10492.00	91.900	94.600	6209.61	4628.67	-771.05	4564.01	569226.40	685102.00	32°53'00.000"N	104°14'32.942"W	3.77
10589.00	95.200	94.300	6203.61	4725.10	-778.56	4660.52	569322.90	685094.49	32°52'59.920"N	104°14'31.811"W	3.42
10632.00	95.200	94.300	6199.71	4767.75	-781.78	4703.22	569365.60	685091.28	32°52'59.888"N	104°14'31.310"W	0.00

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
No. 2H PBHL		6175.00	-788.32	4736.38	569398.76	685084.74	32°52'59.823"N	104°14'30.921"W	point

WELLPATH COMPOSITION Ref Wellbore: No. 2H AWB Ref Wellpath: No. 2H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	5400.00	Gyrodatta standard - Drop gyro or Multi-shot	Gyro <200 - 6170>	No. 2 AWB
5400.00	10589.00	NaviTrak (Standard)	MWD <5524 - 10589>	No. 2H AWB
10589.00	10632.00	Blind Drilling (std)	Projection to bit	No. 2H AWB

ACTUAL WELLPATH REPORT (CSV version)

Prepared by Baker Hughes INTEQ

Software System: WellArchitect@2.0

REFERENCE WELLPATH IDENTIFICATION

Operator Yates Petroleum Corporation

Area Eddy County, NM

Field (Gem) Sec 35, T16S, R27E

Facility Gem Dandy BCG State Com No. 2H

Slot No. 2H SHL

Well No. 2H

Wellbore No. 2H AWB

Wellpath No. 2H AWP

Sidetrack No. 2 AWB at 5400.00 MD

REPORT SETUP INFORMATION

Projection : NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet

North Refe Grid

Scale 0.99991

Convergen 0.04° East

Software S WellArchitect@

User Victor Hernandez

Report Ger 8/6/2010 at 8:52:41 AM

DataBase/ WA_Midland/ev139140.xml

WELLPATI	Local North	Local East	Grid East	Grid North	Latitude	Longitude
	[ft]	[ft]	[ft]	[ft]		
Slot Location	0	0	564662.8	685873	32°53'07.6	104°15'26.454"W
Facility Ref			564662.8	685873	32°53'07.6	104°15'26.454"W
Field Refer			564662.8	685873	32°53'07.6	104°15'26.454"W

WELLPATH DATUM

Calculation Minimum curvature

Horizontal SL

Vertical Re Rig 511 on No. 2H SHL (KB)

MD Refere Rig 511 on No. 2H SHL (KB)

Field Vertic Mean Sea Level

Rig 511 on 18.80ft
Rig 511 on 3463.80ft
GL to Mud 0.00ft
Section Ori 0.00ft
Section Ori 0.00ft
Section Az 99.45°

WELL PATH DATA Wellbore: No. 2H AWB Wellpath: No. 2H AWP † = interpolated/extrapolated station												
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	DLS	
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[srv ft]	[srv ft]			[°/100ft]	
0	0	51.03	0	0	0	0	564662.8	685873	32°53'07.6	104°15'26.	0	
200	0.14	51.03	200	0.16	0.15	0.19	564663	685873.1	32°53'07.6	104°15'26.	0.07	
400	0.05	196.92	400	0.31	0.22	0.35	564663.2	685873.2	32°53'07.6	104°15'26.	0.09	
600	0.12	238.47	600	0.14	0.03	0.15	564663	685873	32°53'07.6	104°15'26.	0.04	
800	0.22	323.09	800	-0.29	0.23	-0.26	564662.6	685873.2	32°53'07.6	104°15'26.	0.12	
1000	0.18	74.46	1000	-0.29	0.62	-0.19	564662.6	685873.6	32°53'07.6	104°15'26.	0.17	
1200	0.29	21.29	1200	0.1	1.18	0.3	564663.1	685874.2	32°53'07.6	104°15'26.	0.12	
1400	0.15	52.22	1400	0.38	1.81	0.69	564663.5	685874.8	32°53'07.6	104°15'26.	0.09	
1600	0.22	94.43	1599.99	0.94	1.94	1.28	564664.1	685874.9	32°53'07.6	104°15'26.	0.07	
1800	0.07	174.37	1799.99	1.36	1.79	1.68	564664.5	685874.8	32°53'07.6	104°15'26.	0.11	
2000	0.04	41.1	1999.99	1.43	1.72	1.73	564664.5	685874.7	32°53'07.6	104°15'26.	0.05	
2200	0.09	163.06	2199.99	1.53	1.62	1.82	564664.6	685874.6	32°53'07.6	104°15'26.	0.06	
2400	0.11	145.15	2399.99	1.74	1.31	1.98	564664.8	685874.3	32°53'07.6	104°15'26.	0.02	
2600	0.15	107.76	2599.99	2.13	1.07	2.34	564665.2	685874.1	32°53'07.6	104°15'26.	0.05	
2800	0.28	339.04	2799.99	2.14	1.45	2.41	564665.2	685874.4	32°53'07.6	104°15'26.	0.2	
3000	0.34	344.87	2999.99	1.65	2.48	2.08	564664.9	685875.5	32°53'07.6	104°15'26.	0.03	
3200	0.31	308.95	3199.99	0.93	3.39	1.51	564664.3	685876.4	32°53'07.6	104°15'26.	0.1	
3400	0.21	314.75	3399.98	0.16	3.99	0.83	564663.6	685877	32°53'07.6	104°15'26.	0.05	
3600	0.3	317.96	3599.98	-0.55	4.64	0.22	564663	685877.6	32°53'07.7	104°15'26.	0.05	
3800	0.39	307.31	3799.98	-1.56	5.44	-0.68	564662.1	685878.4	32°53'07.7	104°15'26.	0.06	
4000	0.46	317.11	3999.97	-2.8	6.44	-1.76	564661.1	685879.4	32°53'07.7	104°15'26.	0.05	
4200	0.37	348.14	4199.97	-3.67	7.66	-2.44	564660.4	685880.6	32°53'07.7	104°15'26.	0.12	
4400	0.62	309.63	4399.96	-4.84	8.98	-3.41	564659.4	685882	32°53'07.7	104°15'26.	0.2	
4600	0.72	306.02	4599.95	-6.9	10.41	-5.26	564657.6	685883.4	32°53'07.7	104°15'26.	0.05	
4800	0.52	283.43	4799.94	-8.93	11.36	-7.16	564655.7	685884.3	32°53'07.7	104°15'26.	0.16	
5000	0.24	290.25	4999.93	-10.24	11.72	-8.43	564654.4	685884.7	32°53'07.7	104°15'26.	0.14	

5200	0.29	302.78	5199.93	-11.12	12.14	-9.25	564653.6	685885.1	32°53'07.7" 104°15'26.3"	0.04
5400	0.36	81.3	5399.93	-10.99	12.51	-9.06	564653.8	685885.5	32°53'07.7" 104°15'26.3"	0.3
5524	0.9	87.7	5523.92	-9.66	12.6	-7.7	564655.1	685885.6	32°53'07.7" 104°15'26.3"	0.44
5555	1	79	5554.92	-9.17	12.67	-7.19	564655.6	685885.7	32°53'07.7" 104°15'26.3"	0.57
5587	3.9	77.4	5586.88	-7.9	12.96	-5.85	564657	685885.9	32°53'07.7" 104°15'26.3"	9.06
5619	9.4	86.1	5618.66	-4.35	13.37	-2.18	564660.6	685886.4	32°53'07.7" 104°15'26.3"	17.42
5651	15.4	89.6	5649.9	2.39	13.58	4.68	564667.5	685886.6	32°53'07.7" 104°15'26.3"	18.89
5683	19.4	86	5680.43	11.75	13.98	14.24	564677	685887	32°53'07.7" 104°15'26.3"	12.94
5715	23.1	87.7	5710.25	23.07	14.6	25.81	564688.6	685887.6	32°53'07.8" 104°15'26.3"	11.72
5745	25.4	92.3	5737.6	35.22	14.58	38.13	564700.9	685887.6	32°53'07.8" 104°15'26.3"	9.92
5777	28	92.9	5766.18	49.49	13.92	52.49	564715.3	685886.9	32°53'07.7" 104°15'25.3"	8.17
5809	31	94	5794.03	65.16	12.97	68.21	564731	685886	32°53'07.7" 104°15'25.3"	9.53
5840	33	96	5820.32	81.54	11.53	84.58	564747.4	685884.5	32°53'07.7" 104°15'25.3"	7.3
5872	34.6	98.7	5846.91	99.32	9.24	102.23	564765	685882.2	32°53'07.7" 104°15'25.3"	6.86
5904	36.3	100.8	5872.98	117.88	6.1	120.51	564783.3	685879.1	32°53'07.7" 104°15'25.3"	6.53
5936	39	101.5	5898.32	137.41	2.31	139.69	564802.5	685875.3	32°53'07.6" 104°15'24.3"	8.54
5967	42.1	102.4	5921.87	157.54	-1.86	159.4	564822.2	685871.1	32°53'07.6" 104°15'24.3"	10.18
5999	45.2	102.1	5945.02	179.6	-6.55	180.98	564843.8	685866.4	32°53'07.5" 104°15'24.3"	9.71
6030	48.6	100.9	5966.2	202.22	-11.05	203.16	564866	685861.9	32°53'07.5" 104°15'24.3"	11.33
6062	51.7	99.8	5986.7	226.78	-15.46	227.33	564890.1	685857.5	32°53'07.5" 104°15'23.3"	10.04
6094	55.1	97.5	6005.78	252.46	-19.31	252.72	564915.5	685853.7	32°53'07.4" 104°15'23.3"	12.09
6125	58.5	97	6022.75	278.38	-22.58	278.45	564941.2	685850.4	32°53'07.4" 104°15'23.3"	11.05
6156	63.6	97	6037.75	305.47	-25.89	305.36	564968.1	685847.1	32°53'07.4" 104°15'22.3"	16.45
6187	67.8	96.4	6050.51	333.68	-29.18	333.42	564996.2	685843.8	32°53'07.3" 104°15'22.3"	13.66
6219	72.9	95.3	6061.26	363.75	-32.25	363.39	565026.2	685840.7	32°53'07.3" 104°15'22.3"	16.26
6250	78	96.6	6069.05	393.69	-35.36	393.22	565056	685837.6	32°53'07.3" 104°15'21.3"	16.94
6282	83.2	97.3	6074.27	425.22	-39.18	424.55	565087.3	685833.8	32°53'07.2" 104°15'21.3"	16.39
6314	88.4	98.6	6076.62	457.11	-43.6	456.14	565118.9	685829.4	32°53'07.2" 104°15'21.3"	16.75
6346	88.6	99	6077.45	489.1	-48.49	487.76	565150.5	685824.5	32°53'07.1" 104°15'20.3"	1.4
6378	88.2	99.2	6078.35	521.08	-53.55	519.34	565182.1	685819.4	32°53'07.1" 104°15'20.3"	1.4
6412	88.6	100	6079.3	555.07	-59.22	552.85	565215.6	685813.8	32°53'07.0" 104°15'19.3"	2.63
6443	88	100.7	6080.22	586.05	-64.78	583.33	565246.1	685808.2	32°53'07.0" 104°15'19.3"	2.97
6475	87.6	101	6081.44	618.02	-70.8	614.74	565277.5	685802.2	32°53'06.9" 104°15'19.3"	1.56
6571	88.9	101.4	6084.38	713.93	-89.44	708.86	565371.6	685783.6	32°53'06.7" 104°15'18.3"	1.42
6669	88.7	100.9	6086.43	811.86	-108.39	804.99	565467.7	685764.6	32°53'06.5" 104°15'17.3"	0.55
6764	88.7	101.2	6088.58	906.8	-126.59	898.21	565560.9	685746.4	32°53'06.4" 104°15'15.3"	0.32
6860	88.7	102	6090.76	1002.71	-145.89	992.22	565654.9	685727.1	32°53'06.2" 104°15'14.3"	0.83

6955	88.8	101.4	6092.83	1097.61	-165.15	1085.22	565747.9	685707.9	32°53'06.0	104°15'13.	0.64
7050	88.9	100.5	6094.74	1192.56	-183.19	1178.47	565841.2	685689.8	32°53'05.8	104°15'12.	0.95
7146	89.5	100.2	6096.08	1288.54	-200.44	1272.9	565935.6	685672.6	32°53'05.6	104°15'11.	0.7
7241	89.4	100.4	6096.99	1383.52	-217.42	1366.37	566029.1	685655.6	32°53'05.4	104°15'10.	0.24
7337	89.4	98.9	6098	1479.51	-233.51	1461	566123.7	685639.5	32°53'05.3	104°15'09.	1.56
7432	89.5	98	6098.91	1574.49	-247.47	1554.96	566217.6	685625.5	32°53'05.2	104°15'08.	0.95
7528	90.5	97.8	6098.91	1670.46	-260.67	1650.05	566312.7	685612.3	32°53'05.0	104°15'07.	1.06
7623	90.2	97.6	6098.33	1765.41	-273.39	1744.19	566406.8	685599.6	32°53'04.9	104°15'06.	0.38
7718	90.3	97.1	6097.92	1860.35	-285.55	1838.41	566501.1	685587.5	32°53'04.8	104°15'04.	0.54
7814	90.8	96.8	6096.99	1956.25	-297.16	1933.7	566596.3	685575.9	32°53'04.7	104°15'03.	0.61
7909	91	97	6095.5	2051.14	-308.58	2028	566690.6	685564.4	32°53'04.5	104°15'02.	0.3
8005	90.2	97.5	6094.5	2147.07	-320.69	2123.23	566785.8	685552.3	32°53'04.4	104°15'01.	0.98
8101	90.3	99.3	6094.08	2243.05	-334.71	2218.19	566880.8	685538.3	32°53'04.3	104°15'00.	1.88
8196	90.1	100.5	6093.75	2338.04	-351.05	2311.78	566974.4	685522	32°53'04.1	104°14'59.	1.28
8289	89.7	100	6093.91	2431.03	-367.59	2403.29	567065.9	685505.4	32°53'04.0	104°14'58.	0.69
8387	89.6	99.5	6094.51	2529.03	-384.19	2499.87	567162.5	685488.8	32°53'03.8	104°14'57.	0.52
8482	88.7	100.6	6095.92	2624.01	-400.77	2593.4	567256	685472.3	32°53'03.6	104°14'56.	1.5
8578	87.1	99	6099.43	2719.94	-417.1	2687.93	567350.5	685455.9	32°53'03.5	104°14'54.	2.36
8673	85.6	99.5	6105.48	2814.74	-432.33	2781.5	567444.1	685440.7	32°53'03.3	104°14'53.	1.66
8768	87	101.6	6111.61	2909.52	-449.69	2874.7	567537.2	685423.3	32°53'03.1	104°14'52.	2.65
8864	85.8	103	6117.64	3005.21	-470.1	2968.3	567630.8	685402.9	32°53'02.9	104°14'51.	1.92
8959	85.9	103.4	6124.52	3099.75	-491.74	3060.55	567723.1	685381.3	32°53'02.7	104°14'50.	0.43
9055	86	103.6	6131.3	3195.27	-514.09	3153.67	567816.2	685358.9	32°53'02.5	104°14'49.	0.23
9150	85.8	103.1	6138.09	3289.81	-535.97	3245.86	567908.4	685337.1	32°53'02.3	104°14'48.	0.57
9246	86.1	102.5	6144.87	3385.41	-557.19	3339.24	568001.7	685315.9	32°53'02.1	104°14'47.	0.7
9341	85.7	102.2	6151.66	3480.04	-577.45	3431.8	568094.3	685295.6	32°53'01.9	104°14'46.	0.53
9436	85.7	101.9	6158.78	3574.68	-597.23	3524.45	568186.9	685275.8	32°53'01.7	104°14'45.	0.31
9531	85.3	100.7	6166.24	3669.33	-615.79	3617.32	568279.8	685257.3	32°53'01.5	104°14'44.	1.33
9634	86.2	100.8	6173.87	3772.02	-634.95	3718.23	568380.7	685238.1	32°53'01.3	104°14'42.	0.88
9729	86.2	100.3	6180.17	3866.8	-652.3	3811.42	568473.9	685220.7	32°53'01.1	104°14'41.	0.53
9825	86.3	100.5	6186.45	3962.58	-669.59	3905.64	568568.1	685203.5	32°53'01.0	104°14'40.	0.23
9921	86.7	100	6192.31	4058.39	-686.65	3999.93	568662.4	685186.4	32°53'00.8	104°14'39.	0.67
10016	87.3	99.3	6197.28	4153.26	-702.55	4093.46	568755.9	685170.5	32°53'00.6	104°14'38.	0.97
10111	88	98.7	6201.17	4248.17	-717.4	4187.21	568849.6	685155.7	32°53'00.5	104°14'37.	0.97
10207	88.2	100.6	6204.36	4344.12	-733.48	4281.79	568944.2	685139.6	32°53'00.3	104°14'36.	1.99
10303	88.3	99.5	6207.29	4440.06	-750.22	4376.28	569038.7	685122.8	32°53'00.2	104°14'35.	1.15
10398	88.5	95.6	6209.94	4534.96	-762.7	4470.4	569132.8	685110.4	32°53'00.0	104°14'34.	4.11

10492	91.9	94.6	6209.61	4628.67	-771.05	4564.01	569226.4	685102	32°53'00.0	104°14'32.1	3.77
10589	95.2	94.3	6203.61	4725.1	-778.56	4660.52	569322.9	685094.5	32°52'59.9	104°14'31.1	3.42
10632	95.2	94.3	6199.71	4767.75	-781.78	4703.22	569365.6	685091.3	32°52'59.8	104°14'31.1	0

T A R G E T S

Name	MD	TVD	North	East	Grid East	Grid North	Latitude	Longitude	Shape	Comment
	[ft]	[ft]	[ft]	[ft]	[srv ft]	[srv ft]				
No. 2H PBHL		6175	-788.32	4736.38	569398.8	685084.7	32°52'59.8	104°14'30.1	point	

WELLPATH COMPOSITION Ref Wellbore: No. 2H AWB Ref Wellpath: No. 2H AWP

Log Name/ Start MD End MD Pos Unc Model

Gyro <200	0	5400	Gyrodata standard - Drop gyro or Multi-shot
MWD <552	5400	10589	NaviTrak (Standard)
Projection 1	10589	10632	Blind Drilling (std)