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FOR TECHNICAL

Plot reference wellpath is Karakoram H1532 PVWP

True vertical depths are referenced to Ensign 7 (RT)

Measured depths are referenced to Ensign 7 (RT)

Ensign 7 (RT) to Mean Sea Level: 4853 feet

Mean Sea Level to Mud line (Facility - SEC.13-T3N-R6)

Coordinates are in feet referenced to 5510

Grid System: NAD83 / Lambert Colorado State Planes, Northern Zone (501), US feet

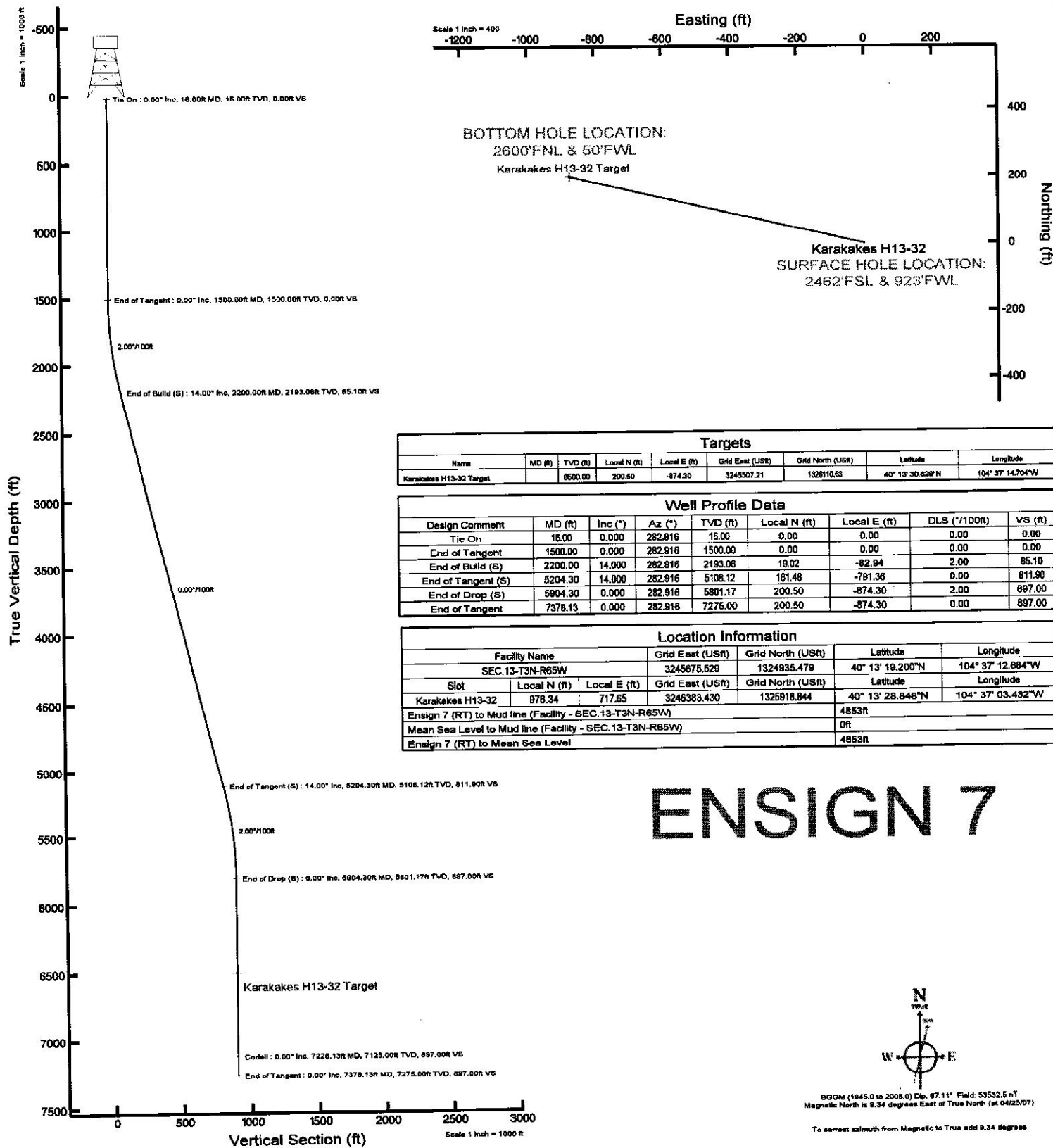
North Reference: True north

Scale: True distance

Depths are in feet

Created by: Suzanne Thompson on 4/25/2007

INTEO



ENSIGN 7



BGM (1945.0 to 2008.0) Dip: 67.11° Field: 53532.5 nT
Magnetic North is 8.34 degrees East of True North (at 04/25/07)

To convert azimuth from Magnetic to True add 9.34 degrees



Planned Wellpath Report

Karakakes H13-32 PWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	Karakakes H13-32
Area	COLORADO	Well	Karakakes H13-32
Field	WELD COUNTY (NOBLE NAD 83)	Wellbore	Karakakes H13-32 PWB
Facility	SEC.13-T3N-R65W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado State Planes, Northern Zone (501), US feet	Software System	WellArchitect™ 1.2
North Reference	True	User	Suzanne Thompson
Scale	0.999957	Report Generated	04/25/07 at 09:26:12
Wellbore last revised	04/25/07	Database/Source file	WA_Denver/Karakak

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North [feet]	East [feet]	Easting [US feet]	Northing [US feet]	Latitude [°]	Longitude [°]
Slot Location	976.34	717.65	3246383.43	1325918.84	40 13 28.848N	104 37 03.432W
Facility Reference Pt			3245675.53	1324935.48	40 13 19.200N	104 37 12.684W
Field Reference Pt			3000000.00	4454105.15	48 46 34.315N	105 30 00.000W

WELLPATH DATUM

Calculation method	Minimum curvature	Ensign 7 (RT) to Facility Vertical Datum	4853.00 feet
Horizontal Reference Pt	Slot	Ensign 7 (RT) to Mean Sea Level	4853.00 feet
Vertical Reference Pt	Ensign 7 (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00 feet
MD Reference Pt	Ensign 7 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	282.92°

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Facility	SEC.13-T3N-R65W		

WELLPATH DATA (80 stations) † = interpolated/extrapolated station

MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [%/100ft]
0.00†	0.000	282.916	0.00	0.00	0.00	0.00	0.00
16.00	0.000	282.916	16.00	0.00	0.00	0.00	0.00
116.00†	0.000	0.000	116.00	0.00	0.00	0.00	0.00
216.00†	0.000	0.000	216.00	0.00	0.00	0.00	0.00
316.00†	0.000	0.000	316.00	0.00	0.00	0.00	0.00
416.00†	0.000	0.000	416.00	0.00	0.00	0.00	0.00
516.00†	0.000	0.000	516.00	0.00	0.00	0.00	0.00
616.00†	0.000	0.000	616.00	0.00	0.00	0.00	0.00
716.00†	0.000	0.000	716.00	0.00	0.00	0.00	0.00
816.00†	0.000	0.000	816.00	0.00	0.00	0.00	0.00
916.00†	0.000	0.000	916.00	0.00	0.00	0.00	0.00
1016.00†	0.000	0.000	1016.00	0.00	0.00	0.00	0.00
1116.00†	0.000	0.000	1116.00	0.00	0.00	0.00	0.00
1216.00†	0.000	0.000	1216.00	0.00	0.00	0.00	0.00
1316.00†	0.000	0.000	1316.00	0.00	0.00	0.00	0.00
1416.00†	0.000	0.000	1416.00	0.00	0.00	0.00	0.00
1500.00	0.000	282.916	1500.00	0.00	0.00	0.00	0.00
1516.00†	0.320	282.916	1516.00	0.04	0.01	-0.04	2.00
1616.00†	2.320	282.916	1615.97	2.35	0.52	-2.29	2.00
1716.00†	4.320	282.916	1715.80	8.14	1.82	-7.93	2.00
1816.00†	6.320	282.916	1815.36	17.41	3.89	-16.97	2.00
1916.00†	8.320	282.916	1914.54	30.15	6.74	-29.39	2.00
2016.00†	10.320	282.916	2013.21	46.34	10.36	-45.17	2.00
2116.00†	12.320	282.916	2111.26	65.97	14.75	-64.30	2.00
2200.00	14.000	282.916	2193.06	85.10	19.02	-82.94	2.00
2216.00†	14.000	282.916	2208.58	88.97	19.89	-86.72	0.00
2316.00†	14.000	282.916	2305.61	113.16	25.29	-110.30	0.00
2416.00†	14.000	282.916	2402.64	137.35	30.70	-133.88	0.00
2516.00†	14.000	282.916	2499.67	161.54	36.11	-157.46	0.00
2616.00†	14.000	282.916	2596.70	185.74	41.52	-181.04	0.00
2716.00†	14.000	282.916	2693.73	209.93	46.92	-204.62	0.00
2816.00†	14.000	282.916	2790.76	234.12	52.33	-228.20	0.00
2916.00†	14.000	282.916	2887.79	258.31	57.74	-251.78	0.00
3016.00†	14.000	282.916	2984.82	282.50	63.15	-275.36	0.00
3116.00†	14.000	282.916	3081.85	306.70	68.55	-298.94	0.00
3216.00†	14.000	282.916	3178.88	330.89	73.96	-322.52	0.00
3316.00†	14.000	282.916	3275.91	355.08	79.37	-346.10	0.00
3416.00†	14.000	282.916	3372.93	379.27	84.78	-369.68	0.00
3516.00†	14.000	282.916	3469.96	403.47	90.18	-393.26	0.00
3616.00†	14.000	282.916	3566.99	427.66	95.59	-416.84	0.00

REFERENCE WELLPATH IDENTIFICATION			
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Field	WELD COUNTY (NOBLE NAD 83)	Wellbore	Karakakes H13-32 PWB
Facility	SEC.13-T3N-R65W		

WELLPATH DATA (80 stations) † = interpolated/extrapolated station

MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]
3716.00†	14.000	282.916	3664.02	451.85	101.00	-440.42	0.00
3816.00†	14.000	282.916	3761.05	476.04	106.41	-464.00	0.00
3916.00†	14.000	282.916	3858.08	500.23	111.81	-487.58	0.00
4016.00†	14.000	282.916	3955.11	524.43	117.22	-511.16	0.00
4116.00†	14.000	282.916	4052.14	548.62	122.63	-534.74	0.00
4216.00†	14.000	282.916	4149.17	572.81	128.04	-558.32	0.00
4316.00†	14.000	282.916	4246.20	597.00	133.44	-581.90	0.00
4416.00†	14.000	282.916	4343.23	621.20	138.85	-605.48	0.00
4516.00†	14.000	282.916	4440.26	645.39	144.26	-629.06	0.00
4616.00†	14.000	282.916	4537.29	669.58	149.67	-652.64	0.00
4716.00†	14.000	282.916	4634.32	693.77	155.07	-676.22	0.00
4816.00†	14.000	282.916	4731.35	717.96	160.48	-699.80	0.00
4916.00†	14.000	282.916	4828.38	742.16	165.89	-723.38	0.00
5016.00†	14.000	282.916	4925.41	766.35	171.30	-746.96	0.00
5116.00†	14.000	282.916	5022.44	790.54	176.70	-770.54	0.00
5204.30	14.000	282.916	5108.12	811.90	181.48	-791.36	0.00
5216.00†	13.766	282.916	5119.47	814.71	182.11	-794.10	2.00
5316.00†	11.766	282.916	5217.00	836.81	187.04	-815.63	2.00
5416.00†	9.766	282.916	5315.23	855.48	191.22	-833.84	2.00
5516.00†	7.766	282.916	5414.06	870.72	194.63	-848.69	2.00
5616.00†	5.766	282.916	5513.36	882.51	197.26	-860.18	2.00
5716.00†	3.766	282.916	5613.01	890.81	199.12	-868.27	2.00
5816.00†	1.766	282.916	5712.88	895.64	200.20	-872.98	2.00
5904.30	0.000	282.916	5801.17 [†]	897.00	200.50	-874.30	2.00
5916.00†	0.000	0.000	5812.87	897.00	200.50	-874.30	0.00
6016.00†	0.000	0.000	5912.87	897.00	200.50	-874.30	0.00
6116.00†	0.000	0.000	6012.87	897.00	200.50	-874.30	0.00
6216.00†	0.000	0.000	6112.87	897.00	200.50	-874.30	0.00
6316.00†	0.000	0.000	6212.87	897.00	200.50	-874.30	0.00
6416.00†	0.000	0.000	6312.87	897.00	200.50	-874.30	0.00
6516.00†	0.000	0.000	6412.87	897.00	200.50	-874.30	0.00
6616.00†	0.000	0.000	6512.87	897.00	200.50	-874.30	0.00
6716.00†	0.000	0.000	6612.87	897.00	200.50	-874.30	0.00
6816.00†	0.000	0.000	6712.87	897.00	200.50	-874.30	0.00
6916.00†	0.000	0.000	6812.87	897.00	200.50	-874.30	0.00
7016.00†	0.000	0.000	6912.87	897.00	200.50	-874.30	0.00
7116.00†	0.000	0.000	7012.87	897.00	200.50	-874.30	0.00
7216.00†	0.000	0.000	7112.87	897.00	200.50	-874.30	0.00
7316.00†	0.000	0.000	7212.87	897.00	200.50	-874.30	0.00
7378.13	0.000	282.916	7275.00	897.00	200.50	-874.30	0.00

Planned Wellpath Report

Karakakes H13-32 PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	Karakakes H13-32
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Field	WELD COUNTY (NOBLE NAD 83)	Wellbore	Karakakes H13-32 PWB
Facility	SEC.13-T3N-R65W		

TARGETS

Name	MD [feet]	TVD [feet]	North [feet]	East [feet]	Grid East [us survey feet]	Grid North [us survey feet]	Latitude [°]	Longitude [°]	Shape
1) Karakakes H13-32 Target		6500.00	200.50	-874.30	3245507.21	1326110.63	40 13 30.829N	104 37 14.704W	point

SURVEY PROGRAM Ref Wellbore: Karakakes H13-32 PWB Ref Wellpath: Karakakes H13-32 PWP

Start MD [feet]	End MD [feet]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	7378.13	MTC (Collar, pre-2000) (Standard)		Karakakes H13-32 PWB

WELLPATH COMMENTS

MD [feet]	Inclination [degrees]	Azimuth [degrees]	TVD [feet]	Comment
7228.13	0.000	282.916	7125.00	Codell