

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 8-T3N-R66W

Eisenach 32N-8HZ

Plan A Rev 0

Plan: Plan A Rev 0 - PERMIT

Sperry Drilling Services

Proposal Report

14 May, 2013

Well Coordinates: 1,331,603.03 N, 3,197,363.17 E (40° 14' 29.36" N, 104° 47' 34.83" W)

Ground Level: 4,827.00 ft

Local Coordinate Origin:	Centered on Well Eisenach 32N-8HZ
Viewing Datum:	RKB=17 @ 4844.00ft (Drilling Rig)
TVDs to System:	N
North Reference:	True
Unit System:	API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 8-T3N-R66W
 Well: Eisenach 32N-8HZ
 Wellbore: Plan A Rev 0
 Design: Plan A Rev 0 - PERMIT

Anadarko Petroleum Corp.



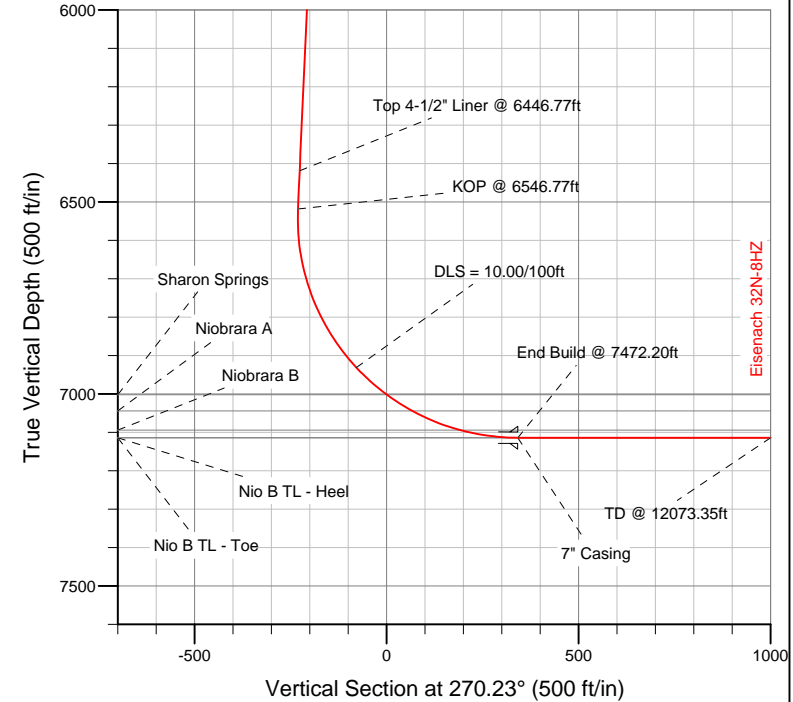
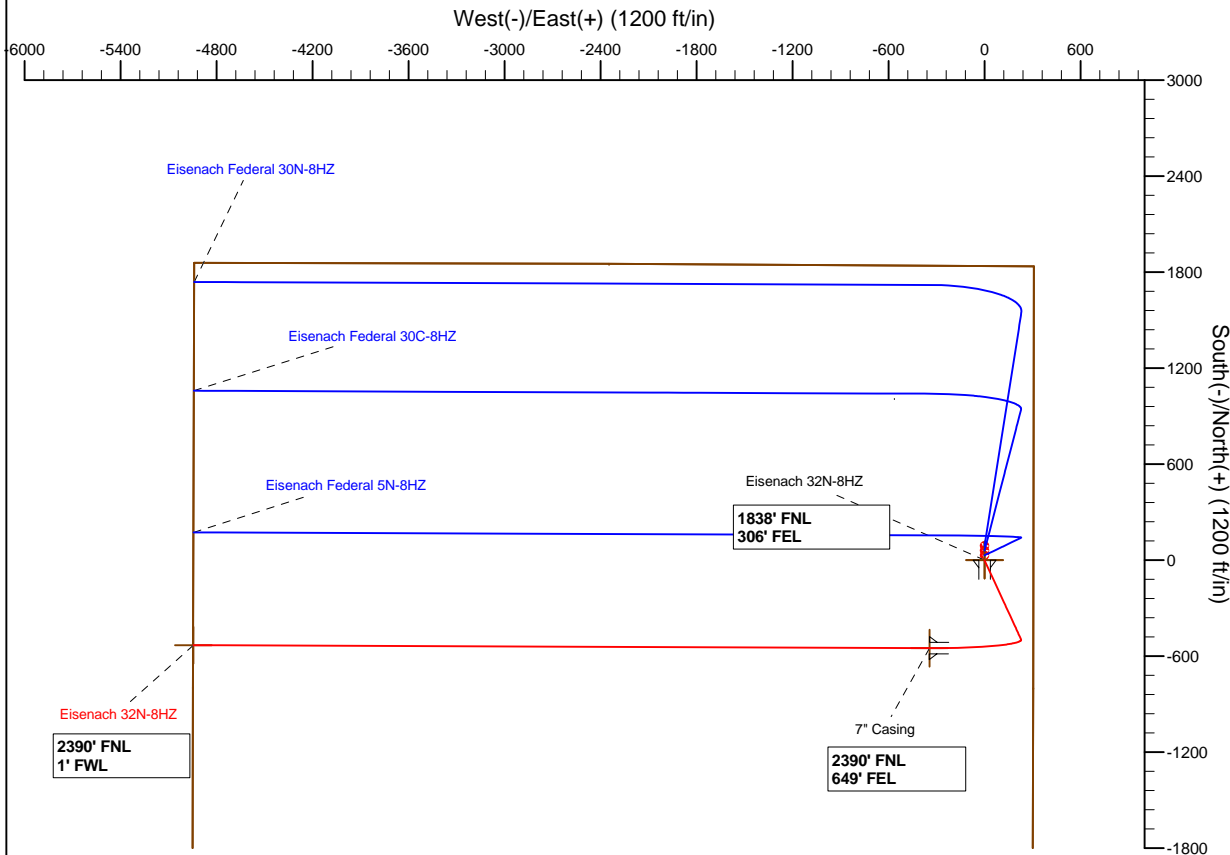
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	
3	1501.30	6.03	155.22	1500.74	-14.37	6.63	2.00	155.22	-6.69	
4	6546.77	6.03	155.22	6518.34	-495.28	228.61	0.00	0.00	-230.60	
5	7472.20	90.00	270.23	7114.00	-550.00	-344.00	10.00	114.88	341.79	Eisenach 32N-8HZ_CP
6	12073.35	90.00	270.23	7114.00	-531.75	-4945.11	0.00	0.00	4942.93	Eisenach 32N-8HZ_BHL

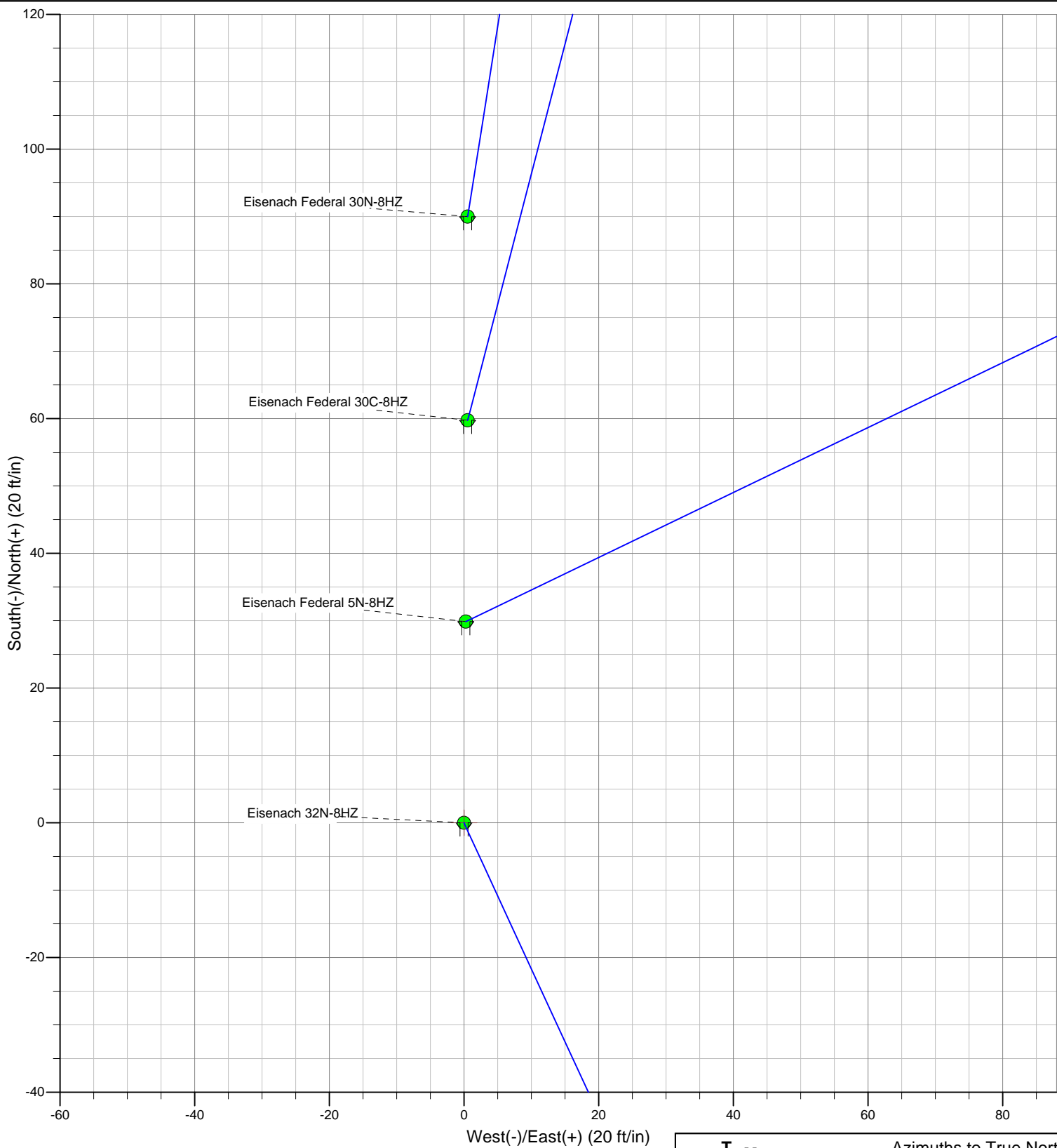
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Eisenach 32N-8HZ_Sec	0.00	0.00	0.00	40.241489	-104.793007	Polygon
Eisenach 32N-8HZ_SHL	0.00	0.00	0.00	40.241489	-104.793007	Point
Eisenach 32N-8HZ_BHL	7114.00	-531.75	-4945.11	40.240028	-104.810720	Point
Eisenach 32N-8HZ_CP	7114.00	-550.00	-344.00	40.239979	-104.794239	Point

MD	TVD	Target
6446.77	6418.89	Top 4-1/2" Liner @ 6446.77ft
6546.77	6518.34	KOP @ 6546.77ft



WELL DETAILS: Eisenach 32N-8HZ	
Ground Level:	4827.00
RKB=17 @ 4844.00ft (Drilling Rig)	
Plan: Plan A Rev 0 - PERMIT (Eisenach 32N-8HZ/Plan A Rev 0)	
Created By: Fred Hartmann	Date: 05/14/2013
Reviewed: _____	Date: _____



Azimuths to True North
Magnetic North: 8.66°

Magnetic Field
Strength: 52744.4snT
Dip Angle: 66.82°
Date: 05-14-2013
Model: BGGM2012

Plan Report for Eisenach 32N-8HZ - Plan A Rev 0 - PERMIT

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/S (ft)	+E/W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
638.00	0.00	0.00	638.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8" Casing										
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1200.00ft										
1,300.00	2.00	155.22	1,299.98	-1.58	0.73	-0.74	2.00	2.00	0.00	155.22
1,400.00	4.00	155.22	1,399.84	-6.34	2.92	-2.95	2.00	2.00	0.00	0.00
1,500.00	6.00	155.22	1,499.45	-14.25	6.58	-6.63	2.00	2.00	0.00	0.00
1,501.30	6.03	155.22	1,500.74	-14.37	6.63	-6.69	2.00	2.00	0.00	0.00
End Nudge @ 1501.30ft										
1,600.00	6.03	155.22	1,598.90	-23.78	10.98	-11.07	0.00	0.00	0.00	0.00
1,700.00	6.03	155.22	1,698.35	-33.31	15.38	-15.51	0.00	0.00	0.00	0.00
1,800.00	6.03	155.22	1,797.79	-42.84	19.78	-19.95	0.00	0.00	0.00	0.00
1,900.00	6.03	155.22	1,897.24	-52.37	24.18	-24.39	0.00	0.00	0.00	0.00
2,000.00	6.03	155.22	1,996.69	-61.91	28.57	-28.82	0.00	0.00	0.00	0.00
2,100.00	6.03	155.22	2,096.14	-71.44	32.97	-33.26	0.00	0.00	0.00	0.00
2,200.00	6.03	155.22	2,195.58	-80.97	37.37	-37.70	0.00	0.00	0.00	0.00
2,300.00	6.03	155.22	2,295.03	-90.50	41.77	-42.14	0.00	0.00	0.00	0.00
2,400.00	6.03	155.22	2,394.48	-100.03	46.17	-46.57	0.00	0.00	0.00	0.00
2,500.00	6.03	155.22	2,493.93	-109.56	50.57	-51.01	0.00	0.00	0.00	0.00
2,600.00	6.03	155.22	2,593.37	-119.10	54.97	-55.45	0.00	0.00	0.00	0.00
2,700.00	6.03	155.22	2,692.82	-128.63	59.37	-59.89	0.00	0.00	0.00	0.00
2,800.00	6.03	155.22	2,792.27	-138.16	63.77	-64.33	0.00	0.00	0.00	0.00
2,900.00	6.03	155.22	2,891.72	-147.69	68.17	-68.76	0.00	0.00	0.00	0.00
3,000.00	6.03	155.22	2,991.16	-157.22	72.57	-73.20	0.00	0.00	0.00	0.00
3,100.00	6.03	155.22	3,090.61	-166.75	76.97	-77.64	0.00	0.00	0.00	0.00
3,200.00	6.03	155.22	3,190.06	-176.29	81.37	-82.08	0.00	0.00	0.00	0.00
3,300.00	6.03	155.22	3,289.51	-185.82	85.77	-86.52	0.00	0.00	0.00	0.00
3,400.00	6.03	155.22	3,388.95	-195.35	90.17	-90.95	0.00	0.00	0.00	0.00
3,500.00	6.03	155.22	3,488.40	-204.88	94.57	-95.39	0.00	0.00	0.00	0.00
3,600.00	6.03	155.22	3,587.85	-214.41	98.97	-99.83	0.00	0.00	0.00	0.00
3,700.00	6.03	155.22	3,687.30	-223.94	103.37	-104.27	0.00	0.00	0.00	0.00
3,800.00	6.03	155.22	3,786.74	-233.47	107.77	-108.70	0.00	0.00	0.00	0.00
3,810.31	6.03	155.22	3,797.00	-234.46	108.22	-109.16	0.00	0.00	0.00	0.00
Parkman										
3,900.00	6.03	155.22	3,886.19	-243.01	112.17	-113.14	0.00	0.00	0.00	0.00
4,000.00	6.03	155.22	3,985.64	-252.54	116.57	-117.58	0.00	0.00	0.00	0.00
4,100.00	6.03	155.22	4,085.09	-262.07	120.97	-122.02	0.00	0.00	0.00	0.00
4,200.00	6.03	155.22	4,184.53	-271.60	125.37	-126.46	0.00	0.00	0.00	0.00
4,282.93	6.03	155.22	4,267.00	-279.50	129.01	-130.14	0.00	0.00	0.00	0.00
Sussex										
4,300.00	6.03	155.22	4,283.98	-281.13	129.77	-130.89	0.00	0.00	0.00	0.00
4,400.00	6.03	155.22	4,383.43	-290.66	134.17	-135.33	0.00	0.00	0.00	0.00
4,500.00	6.03	155.22	4,482.88	-300.20	138.57	-139.77	0.00	0.00	0.00	0.00
4,600.00	6.03	155.22	4,582.32	-309.73	142.96	-144.21	0.00	0.00	0.00	0.00
4,700.00	6.03	155.22	4,681.77	-319.26	147.36	-148.64	0.00	0.00	0.00	0.00
4,800.00	6.03	155.22	4,781.22	-328.79	151.76	-153.08	0.00	0.00	0.00	0.00

Plan Report for Eisenach 32N-8HZ - Plan A Rev 0 - PERMIT

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
4,900.00	6.03	155.22	4,880.66	-338.32	156.16	-157.52	0.00	0.00	0.00	0.00
5,000.00	6.03	155.22	4,980.11	-347.85	160.56	-161.96	0.00	0.00	0.00	0.00
5,100.00	6.03	155.22	5,079.56	-357.38	164.96	-166.40	0.00	0.00	0.00	0.00
5,200.00	6.03	155.22	5,179.01	-366.92	169.36	-170.83	0.00	0.00	0.00	0.00
5,300.00	6.03	155.22	5,278.45	-376.45	173.76	-175.27	0.00	0.00	0.00	0.00
5,400.00	6.03	155.22	5,377.90	-385.98	178.16	-179.71	0.00	0.00	0.00	0.00
5,500.00	6.03	155.22	5,477.35	-395.51	182.56	-184.15	0.00	0.00	0.00	0.00
5,600.00	6.03	155.22	5,576.80	-405.04	186.96	-188.59	0.00	0.00	0.00	0.00
5,700.00	6.03	155.22	5,676.24	-414.57	191.36	-193.02	0.00	0.00	0.00	0.00
5,800.00	6.03	155.22	5,775.69	-424.11	195.76	-197.46	0.00	0.00	0.00	0.00
5,900.00	6.03	155.22	5,875.14	-433.64	200.16	-201.90	0.00	0.00	0.00	0.00
6,000.00	6.03	155.22	5,974.59	-443.17	204.56	-206.34	0.00	0.00	0.00	0.00
6,100.00	6.03	155.22	6,074.03	-452.70	208.96	-210.77	0.00	0.00	0.00	0.00
6,200.00	6.03	155.22	6,173.48	-462.23	213.36	-215.21	0.00	0.00	0.00	0.00
6,300.00	6.03	155.22	6,272.93	-471.76	217.76	-219.65	0.00	0.00	0.00	0.00
6,400.00	6.03	155.22	6,372.38	-481.30	222.16	-224.09	0.00	0.00	0.00	0.00
6,446.77	6.03	155.22	6,418.89	-485.75	224.22	-226.16	0.00	0.00	0.00	0.00
Top 4-1/2" Liner @ 6446.77ft										
6,500.00	6.03	155.22	6,471.82	-490.83	226.56	-228.53	0.00	0.00	0.00	0.00
6,546.77	6.03	155.22	6,518.34	-495.28	228.61	-230.60	0.00	0.00	0.00	0.00
KOP @ 6546.77ft										
6,600.00	6.13	207.24	6,571.30	-500.35	228.49	-230.49	10.00	0.19	97.72	114.88
6,700.00	13.88	247.45	6,669.81	-509.72	214.93	-216.97	10.00	7.75	40.21	63.12
6,800.00	23.39	257.45	6,764.48	-518.66	184.40	-186.48	10.00	9.51	10.00	23.39
6,900.00	33.18	261.81	6,852.44	-526.89	137.82	-139.93	10.00	9.79	4.36	13.88
7,000.00	43.06	264.35	6,931.02	-534.16	76.60	-78.75	10.00	9.88	2.54	10.02
DLS = 10.00/100ft										
7,100.00	52.98	266.09	6,997.83	-540.26	2.61	-4.78	10.00	9.92	1.74	8.02
7,106.99	53.67	266.19	7,002.00	-540.64	-2.98	0.81	10.00	9.93	1.48	6.85
Sharon Springs										
7,185.35	61.46	267.24	7,044.00	-544.39	-68.96	66.77	10.00	9.94	1.34	6.79
Niobrara A										
7,200.00	62.91	267.42	7,050.83	-545.00	-81.90	79.71	10.00	9.94	1.22	6.22
7,300.00	72.86	268.54	7,088.43	-548.23	-174.37	172.17	10.00	9.95	1.11	6.14
7,320.02	74.85	268.74	7,094.00	-548.68	-193.60	191.39	10.00	9.95	1.03	5.72
Niobrara B										
7,400.00	82.81	269.54	7,109.48	-549.85	-271.98	269.78	10.00	9.95	0.99	5.66
7,472.20	90.00	270.23	7,114.00	-550.00	-344.00	341.79	10.00	9.95	0.96	5.51
End Build @ 7472.20ft - Nio B TL - Heel - 7" Casing - Eisenach 32N-8HZ_CP										
7,500.00	90.00	270.23	7,114.00	-549.89	-371.79	369.58	0.00	0.00	0.00	5.46
7,600.00	90.00	270.23	7,114.00	-549.49	-471.79	469.58	0.00	0.00	0.00	0.00
7,700.00	90.00	270.23	7,114.00	-549.10	-571.79	569.58	0.00	0.00	0.00	0.00
7,800.00	90.00	270.23	7,114.00	-548.70	-671.79	669.58	0.00	0.00	0.00	0.00
7,900.00	90.00	270.23	7,114.00	-548.30	-771.79	769.58	0.00	0.00	0.00	0.00
8,000.00	90.00	270.23	7,114.00	-547.91	-871.79	869.58	0.00	0.00	0.00	0.00
8,100.00	90.00	270.23	7,114.00	-547.51	-971.79	969.58	0.00	0.00	0.00	0.00
8,200.00	90.00	270.23	7,114.00	-547.11	-1,071.79	1,069.58	0.00	0.00	0.00	0.00
8,300.00	90.00	270.23	7,114.00	-546.72	-1,171.79	1,169.58	0.00	0.00	0.00	0.00
8,400.00	90.00	270.23	7,114.00	-546.32	-1,271.79	1,269.58	0.00	0.00	0.00	0.00
8,500.00	90.00	270.23	7,114.00	-545.92	-1,371.79	1,369.58	0.00	0.00	0.00	0.00
8,600.00	90.00	270.23	7,114.00	-545.53	-1,471.79	1,469.58	0.00	0.00	0.00	0.00
8,700.00	90.00	270.23	7,114.00	-545.13	-1,571.79	1,569.58	0.00	0.00	0.00	0.00
8,800.00	90.00	270.23	7,114.00	-544.73	-1,671.78	1,669.58	0.00	0.00	0.00	0.00
8,900.00	90.00	270.23	7,114.00	-544.34	-1,771.78	1,769.58	0.00	0.00	0.00	0.00
9,000.00	90.00	270.23	7,114.00	-543.94	-1,871.78	1,869.58	0.00	0.00	0.00	0.00
9,100.00	90.00	270.23	7,114.00	-543.54	-1,971.78	1,969.58	0.00	0.00	0.00	0.00
9,200.00	90.00	270.23	7,114.00	-543.15	-2,071.78	2,069.58	0.00	0.00	0.00	0.00
9,300.00	90.00	270.23	7,114.00	-542.75	-2,171.78	2,169.58	0.00	0.00	0.00	0.00
9,400.00	90.00	270.23	7,114.00	-542.35	-2,271.78	2,269.58	0.00	0.00	0.00	0.00

Plan Report for Eisenach 32N-8HZ - Plan A Rev 0 - PERMIT

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
9,500.00	90.00	270.23	7,114.00	-541.96	-2,371.78	2,369.58	0.00	0.00	0.00	0.00
9,600.00	90.00	270.23	7,114.00	-541.56	-2,471.78	2,469.58	0.00	0.00	0.00	0.00
9,700.00	90.00	270.23	7,114.00	-541.16	-2,571.78	2,569.58	0.00	0.00	0.00	0.00
9,800.00	90.00	270.23	7,114.00	-540.77	-2,671.78	2,669.58	0.00	0.00	0.00	0.00
9,900.00	90.00	270.23	7,114.00	-540.37	-2,771.78	2,769.58	0.00	0.00	0.00	0.00
10,000.00	90.00	270.23	7,114.00	-539.97	-2,871.78	2,869.58	0.00	0.00	0.00	0.00
10,100.00	90.00	270.23	7,114.00	-539.57	-2,971.77	2,969.58	0.00	0.00	0.00	0.00
10,200.00	90.00	270.23	7,114.00	-539.18	-3,071.77	3,069.58	0.00	0.00	0.00	0.00
10,300.00	90.00	270.23	7,114.00	-538.78	-3,171.77	3,169.58	0.00	0.00	0.00	0.00
10,400.00	90.00	270.23	7,114.00	-538.38	-3,271.77	3,269.58	0.00	0.00	0.00	0.00
10,500.00	90.00	270.23	7,114.00	-537.99	-3,371.77	3,369.58	0.00	0.00	0.00	0.00
10,600.00	90.00	270.23	7,114.00	-537.59	-3,471.77	3,469.58	0.00	0.00	0.00	0.00
10,700.00	90.00	270.23	7,114.00	-537.19	-3,571.77	3,569.58	0.00	0.00	0.00	0.00
10,800.00	90.00	270.23	7,114.00	-536.80	-3,671.77	3,669.58	0.00	0.00	0.00	0.00
10,900.00	90.00	270.23	7,114.00	-536.40	-3,771.77	3,769.58	0.00	0.00	0.00	0.00
11,000.00	90.00	270.23	7,114.00	-536.00	-3,871.77	3,869.58	0.00	0.00	0.00	0.00
11,100.00	90.00	270.23	7,114.00	-535.61	-3,971.77	3,969.58	0.00	0.00	0.00	0.00
11,200.00	90.00	270.23	7,114.00	-535.21	-4,071.77	4,069.58	0.00	0.00	0.00	0.00
11,300.00	90.00	270.23	7,114.00	-534.81	-4,171.76	4,169.58	0.00	0.00	0.00	0.00
11,400.00	90.00	270.23	7,114.00	-534.42	-4,271.76	4,269.58	0.00	0.00	0.00	0.00
11,500.00	90.00	270.23	7,114.00	-534.02	-4,371.76	4,369.58	0.00	0.00	0.00	0.00
11,600.00	90.00	270.23	7,114.00	-533.62	-4,471.76	4,469.58	0.00	0.00	0.00	0.00
11,700.00	90.00	270.23	7,114.00	-533.23	-4,571.76	4,569.58	0.00	0.00	0.00	0.00
11,800.00	90.00	270.23	7,114.00	-532.83	-4,671.76	4,669.58	0.00	0.00	0.00	0.00
11,900.00	90.00	270.23	7,114.00	-532.43	-4,771.76	4,769.58	0.00	0.00	0.00	0.00
12,000.00	90.00	270.23	7,114.00	-532.04	-4,871.76	4,869.58	0.00	0.00	0.00	0.00
12,073.34	90.00	270.23	7,114.00	-531.75	-4,945.10	4,942.92	0.00	0.00	0.00	0.00
Nio B TL - Toe										
12,073.35	90.00	270.23	7,114.00	-531.75	-4,945.11	4,942.93	0.00	0.00	0.00	0.00
Eisenach 32N-8HZ_BHL										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,200.00	1,200.00	0.00	0.00	Begin Nudge @ 1200.00ft
1,501.30	1,500.74	-14.37	6.63	End Nudge @ 1501.30ft
6,446.77	6,418.89	-485.75	224.22	Top 4-1/2" Liner @ 6446.77ft
6,546.77	6,518.34	-495.28	228.61	KOP @ 6546.77ft
7,000.00	6,931.02	-534.16	76.60	DLS = 10.00/100ft
7,472.20	7,114.00	-550.00	-344.00	End Build @ 7472.20ft
12,073.35	7,114.00	-531.75	-4,945.11	TD @ 12073.35ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
User	No Target (Freehand)	270.23	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,073.35	Plan A Rev 0 - PERMIT	MWD

Plan Report for Eisenach 32N-8HZ - Plan A Rev 0 - PERMIT**Casing Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
638.00	638.00	9 5/8" Casing	9-5/8	13-1/2
7,472.20	7,114.00	7" Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,810.31	3,797.00	Parkman		0.00	
4,282.93	4,267.00	Sussex		0.00	
7,106.99	7,002.00	Sharon Springs		0.00	
7,185.35	7,044.00	Niobrara A		0.00	
7,320.02	7,094.00	Niobrara B		0.00	
7,472.20	7,114.00	Nio B TL - Heel		0.00	
12,073.34	7,114.00	Nio B TL - Toe		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Eisenach 32N-8HZ_CP	7,114.00	-550.00	-344.00	Point
Eisenach 32N-8HZ_BHL	7,114.00	-531.75	-4,945.11	Point
Eisenach 32N-8HZ_Sec	0.00	0.00	0.00	Polygon
Eisenach 32N-8HZ_SHL	0.00	0.00	0.00	Point

North Reference Sheet for Sec. 8-T3N-R66W - Eisenach 32N-8HZ - Plan A Rev 0

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.
 Vertical Depths are relative to RKB=17 @ 4844.00ft (Drilling Rig). Northing and Easting are relative to Eisenach 32N-8HZ
 Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980
 Projection method is Lambert Conformal Conic (2 parallel)
 Central Meridian is -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°
 False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99995686

Grid Coordinates of Well: 1,331,603.03 ft N, 3,197,363.17 ft E
 Geographical Coordinates of Well: 40° 14' 29.36" N, 104° 47' 34.83" W
 Grid Convergence at Surface is: 0.46°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,073.35ft
 the Bottom Hole Displacement is 4,973.62ft in the Direction of 263.86° (True).

Magnetic Convergence at surface is: -8.20° (14 May 2013, , BGGM2012)

