

Results of Directional Survey

API number:	30-025-41163		
OGRID:		Operator:	DEVON ENERGY PRODUCTION COMPANY, LP
		Property:	IRONHOUSE 24 STATE COM # 1H

surface	ULSTR:	P	24	T 18S	R 34E
				150 FSL	825 FEL

BH Loc	ULSTR:	A	24	T 18S	R 34E
14448	MD	9601.4	TVD	318 FNL	718 FEL
				4962 FSL	

Top Perf/OH	ULSTR:	P	24	T 18S	R 34E
9717	MD	9702.4	TVD	336 FSL	803 FEL

Bot Perf/OH	ULSTR:	A	24	T 18S	R 34E
14356	MD	9608.6	TVD	410 FNL	718 FEL
				4870 FSL	

	MD	N/S	E/W	VD
	9686	171.18	22.66	9675.17
TOP PERFS/OH	9717	186.05	22.01	9702.35
	9717	186.05	22.01	9702.35
	14328	4692.00	107.43	9610.83
BOT PERFS/OH	14356	4719.91	107.31	9608.62
	14391	4754.80	107.16	9605.85

NEXT TO LAST	1447.85	4811.47	106.63	9601.36
LAST READING	14448	4811.62	106.62	9601.35
TD	14448	4811.62	106.62	9601.35

Surface Location	150 FS	825 FE
Projected BHL	4962 FS	718 FE
Location of		
Top Perfs/OH	336 FS	803 FE
Bottom Perfs/OH	4870 FS	718 FE

SUMMARY of Subsurface Locations

Surface Location	P-24-18S-34E	150 FS	825 FE	Vert. Depth
Top Perfs/OH	P-24-18S-34E	336 FS	803 FE	9702.35
Bottom Perfs/OH	A-24-18S-34E	4870 FS	718 FE	9608.62
Projected TD	A-24-18S-34E	4962 FS	718 FE	9601.35

MAR 18 2014



A GYRO TECHNOLOGIES INC. COMPANY

November 19, 2013

P.O. Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

HOBBS OCD

FEB 20 2014

Devon Energy Production Co., L. P.
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

RECEIVED

Attn: Patti Riechers

Re: Ironhouse 24 State Com 1H

Please find enclosed a copy of the survey from 0.00' to 9300.00' ran on the above referenced well.

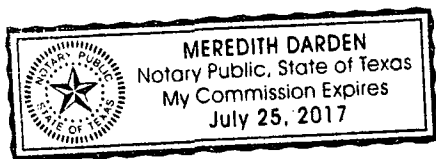
If I can be of any further service please do not hesitate to call me at 800-606-4976.

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 19th day of November A.D., 2013, by Keith Havelka.



Meredith Darden
Notary Public, State of Texas



Company: Devon Energy Production Co.
 Lease/Well: Ironhouse 24 State Com/No. 001H
 Location: P24 18S 34E
 Rig Name: Patterson 228
 State/County: New Mexico/Lea
 Latitude: 32.73, Longitude: -103.51
 GRID North is 0.45 Degrees East of True North
 VS-Azi: 0.00 Degrees

Depth Reference : R.K.B. = 25 Feet

HOBBS OCD

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut
 Minimum Curvature Method
 Report Date/Time: 11/21/2013 / 09:25

FEB 20 2014

Vaughn Energy Services
 Midland, TX
 432-563-5444

RECEIVED

Surveyor: Andrew Askew
 Ironhouse 24 State Com No. 001H / API 30-025-41163

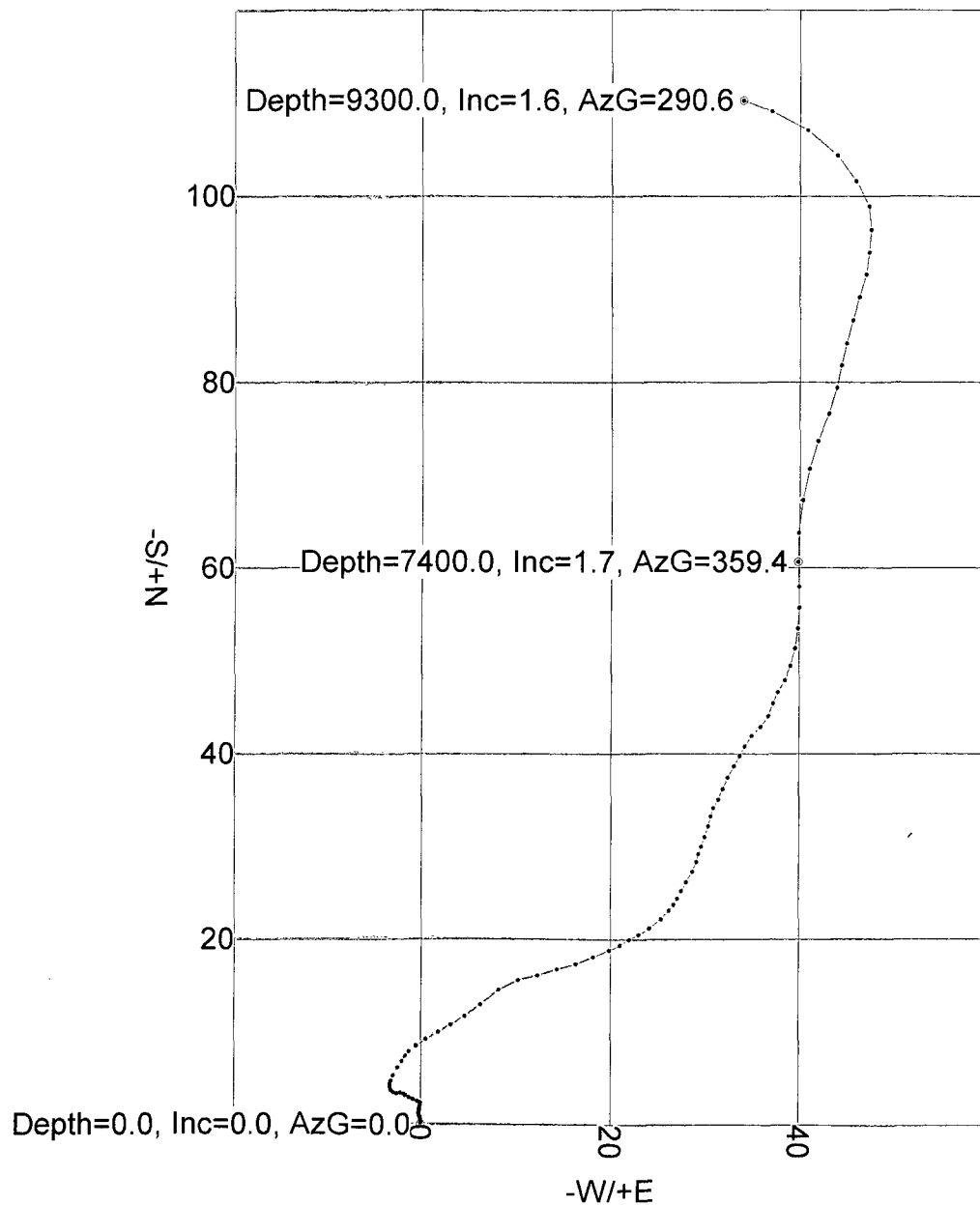
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.21	7.22	100.00	0.18	0.02	0.18	0.19	7.22	0.21
200.00	0.23	325.51	200.00	0.53	-0.07	0.53	0.54	352.80	0.16
300.00	0.10	65.84	300.00	0.73	-0.10	0.73	0.74	352.08	0.27
400.00	0.17	306.41	400.00	0.86	-0.15	0.86	0.87	350.40	0.24
500.00	0.26	8.22	500.00	1.17	-0.24	1.17	1.20	348.62	0.23
600.00	0.25	5.51	600.00	1.61	-0.18	1.61	1.62	353.50	0.01
700.00	0.26	21.18	700.00	2.04	-0.08	2.04	2.04	357.74	0.07
800.00	0.08	294.76	800.00	2.28	-0.06	2.28	2.28	358.45	0.27
900.00	0.34	304.43	899.99	2.47	-0.37	2.47	2.50	351.56	0.26
1000.00	0.23	277.62	999.99	2.66	-0.81	2.66	2.78	343.11	0.17
1100.00	0.38	306.83	1099.99	2.89	-1.28	2.89	3.16	336.18	0.21
1200.00	0.18	283.02	1199.99	3.12	-1.69	3.12	3.55	331.56	0.23
1300.00	0.17	333.23	1299.99	3.29	-1.91	3.29	3.80	329.89	0.15
1400.00	0.29	265.66	1399.99	3.40	-2.22	3.40	4.06	326.83	0.27
1500.00	0.20	245.94	1499.99	3.31	-2.63	3.31	4.23	321.48	0.12
1600.00	0.31	317.90	1599.99	3.44	-2.98	3.44	4.55	319.11	0.32
1700.00	0.13	310.88	1699.99	3.72	-3.25	3.72	4.94	318.85	0.18
1800.00	0.32	353.43	1799.99	4.07	-3.37	4.07	5.29	320.40	0.24

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.09	45.06	1899.99	4.41	-3.35	4.41	5.54	322.81	0.27
2000.00	0.25	12.90	1999.99	4.68	-3.24	4.68	5.69	325.32	0.18
2100.00	0.50	25.03	2099.98	5.29	-3.01	5.29	6.09	330.41	0.26
2200.00	0.57	32.59	2199.98	6.11	-2.55	6.11	6.62	337.30	0.09
2300.00	0.39	30.83	2299.98	6.82	-2.11	6.82	7.14	342.78	0.17
2400.00	0.34	38.80	2399.97	7.34	-1.75	7.34	7.55	346.58	0.07
2500.00	0.39	47.13	2499.97	7.80	-1.32	7.80	7.91	350.40	0.07
2600.00	0.74	52.46	2599.97	8.43	-0.56	8.43	8.44	356.21	0.36
2700.00	0.76	63.16	2699.96	9.12	0.55	9.12	9.14	3.45	0.14
2800.00	0.98	55.85	2799.95	9.90	1.85	9.90	10.08	10.60	0.25
2900.00	0.83	61.12	2899.93	10.73	3.20	10.73	11.20	16.58	0.18
3000.00	1.11	55.23	2999.92	11.64	4.62	11.64	12.52	21.67	0.30
3100.00	1.31	50.01	3099.90	12.93	6.30	12.93	14.38	25.99	0.23
3200.00	1.51	49.82	3199.87	14.51	8.19	14.51	16.66	29.43	0.20
3300.00	1.21	79.23	3299.84	15.56	10.23	15.56	18.62	33.32	0.75
3400.00	1.23	71.48	3399.82	16.10	12.28	16.10	20.25	37.34	0.17
3500.00	1.26	73.54	3499.79	16.75	14.35	16.75	22.06	40.59	0.05
3600.00	1.10	73.01	3599.77	17.34	16.32	17.34	23.82	43.26	0.16
3700.00	1.20	61.92	3699.75	18.12	18.16	18.12	25.65	45.07	0.24
3800.00	0.88	72.68	3799.74	18.84	19.82	18.84	27.34	46.45	0.38
3900.00	0.61	55.31	3899.73	19.37	20.99	19.37	28.56	47.30	0.34
4000.00	0.71	59.79	3999.72	19.99	21.96	19.99	29.70	47.70	0.11
4100.00	0.59	62.92	4099.71	20.53	22.96	20.53	30.80	48.19	0.12
4200.00	0.88	55.83	4199.71	21.20	24.05	21.20	32.05	48.61	0.30
4300.00	0.95	47.90	4299.69	22.18	25.30	22.18	33.64	48.75	0.15
4400.00	0.53	37.45	4399.68	23.11	26.19	23.11	34.93	48.58	0.45
4500.00	0.39	36.05	4499.68	23.74	26.67	23.74	35.71	48.32	0.14
4600.00	0.50	25.41	4599.68	24.41	27.06	24.41	36.44	47.94	0.14
4700.00	0.54	28.86	4699.67	25.22	27.48	25.22	37.30	47.45	0.05
4800.00	0.72	28.00	4799.67	26.19	28.00	26.19	38.34	46.91	0.18
4900.00	0.77	30.55	4899.66	27.32	28.63	27.32	39.58	46.34	0.06
5000.00	0.54	12.99	4999.65	28.36	29.08	28.36	40.62	45.72	0.30
5100.00	0.49	13.03	5099.65	29.23	29.28	29.23	41.37	45.05	0.05
5200.00	0.48	27.36	5199.65	30.01	29.57	30.01	42.13	44.57	0.12
5300.00	0.80	14.63	5299.64	31.06	29.93	31.06	43.13	43.95	0.35
5400.00	0.63	23.31	5399.63	32.23	30.33	32.23	44.26	43.25	0.20
5500.00	0.64	5.55	5499.63	33.29	30.60	33.29	45.22	42.58	0.20
5600.00	0.43	30.56	5599.62	34.18	30.84	34.18	46.04	42.06	0.31
5700.00	0.77	32.12	5699.62	35.07	31.39	35.07	47.07	41.83	0.34

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	0.69	15.86	5799.61	36.22	31.91	36.22	48.27	41.38	0.22
5900.00	0.84	29.12	5899.60	37.44	32.43	37.44	49.54	40.90	0.23
6000.00	0.77	28.40	5999.59	38.67	33.11	38.67	50.91	40.57	0.07
6100.00	0.64	29.56	6099.58	39.75	33.71	39.75	52.12	40.30	0.13
6200.00	0.72	24.56	6199.57	40.81	34.24	40.81	53.27	40.00	0.10
6300.00	0.84	39.04	6299.57	41.95	34.97	41.95	54.61	39.81	0.23
6400.00	0.70	50.18	6399.56	42.91	35.90	42.91	55.94	39.92	0.21
6500.00	0.97	22.82	6499.55	44.07	36.69	44.07	57.35	39.78	0.47
6600.00	0.72	17.87	6599.54	45.45	37.21	45.45	58.74	39.31	0.25
6700.00	0.76	28.69	6699.53	46.63	37.72	46.63	59.98	38.97	0.14
6800.00	0.93	31.19	6799.52	47.91	38.46	47.91	61.43	38.76	0.18
6900.00	1.02	13.61	6899.50	49.46	39.09	49.46	63.05	38.32	0.31
7000.00	1.20	15.83	6999.48	51.33	39.58	51.33	64.82	37.64	0.19
7100.00	1.34	359.98	7099.46	53.51	39.87	53.51	66.73	36.69	0.38
7200.00	1.21	6.02	7199.43	55.72	39.98	55.72	68.58	35.66	0.19
7300.00	1.38	354.25	7299.41	57.97	39.97	57.97	70.41	34.59	0.32
7400.00	1.71	359.44	7399.37	60.65	39.83	60.65	72.56	33.29	0.35
7500.00	1.86	2.65	7499.32	63.77	39.89	63.77	75.22	32.03	0.18
7600.00	2.21	9.82	7599.26	67.29	40.30	67.29	78.43	30.92	0.43
7700.00	1.74	13.86	7699.20	70.67	40.99	70.67	81.69	30.12	0.49
7800.00	1.87	19.02	7799.15	73.68	41.89	73.68	84.76	29.62	0.21
7900.00	1.76	24.88	7899.10	76.62	43.07	76.62	87.89	29.34	0.21
8000.00	1.62	8.57	7999.06	79.41	43.92	79.41	90.75	28.95	0.50
8100.00	1.22	14.54	8099.03	81.84	44.40	81.84	93.11	28.48	0.43
8200.00	1.54	11.99	8199.00	84.18	44.95	84.18	95.43	28.10	0.32
8300.00	1.43	16.75	8298.96	86.69	45.59	86.69	97.94	27.74	0.16
8400.00	1.53	17.14	8398.93	89.16	46.34	89.16	100.48	27.46	0.10
8500.00	1.34	14.53	8498.90	91.57	47.03	91.57	102.94	27.18	0.20
8600.00	1.41	1.74	8598.87	93.93	47.36	93.93	105.19	26.76	0.32
8700.00	1.39	6.28	8698.84	96.37	47.53	96.37	107.45	26.25	0.11
8800.00	1.58	344.13	8798.81	98.91	47.28	98.91	109.63	25.55	0.60
8900.00	1.91	326.19	8898.76	101.62	45.98	101.62	111.54	24.34	0.64
9000.00	2.00	321.88	8998.70	104.39	43.97	104.39	113.27	22.84	0.17
9100.00	2.86	302.87	9098.61	107.11	40.79	107.11	114.62	20.85	1.16
9200.00	2.10	291.58	9198.52	109.14	37.00	109.14	115.24	18.73	0.90
9300.00	1.62	290.62	9298.47	110.31	33.97	110.31	115.42	17.12	0.48



Vaughn Energy Services
Midland, TX
432-563-5444
Surveyor: Andrew Askew
Ironhouse 24 State Com No. 001H / API 30-025-41163



VES Survey Date: 11/10/2013

Devon Energy, Inc.

Lea County (NAD83)
Ironhouse 24 State Com
Well #1H

Original Hole

Design: Original Hole

Standard Survey Report

20 November, 2013

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Pathfinder - A Schlumberger Company

Survey Report

Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well Well #1H
Project:	Lea County (NAD83)	TVD Reference:	WELL @ 3992.10usft (Patterson 228)
Site:	Ironhouse 24 State Com	MD Reference:	WELL @ 3992.10usft (Patterson 228)
Well:	Well #1H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

Project	Lea County (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Ironhouse 24 State Com				
Site Position:		Northing:	629,008.59 usft	Latitude:	32° 43' 35.280 N
From:	Map	Easting:	795,163.09 usft	Longitude:	103° 30' 28.610 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45 °

Well.	Well #1H					
Well Position	+N/-S	0.00 usft	Northing:	629,008.59 usft	Latitude:	32° 43' 35.280 N
	+E/-W	0.00 usft	Easting:	795,163.09 usft	Longitude:	103° 30' 28.610 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	3,992.10 usft	Ground Level:	3,965.60 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2012	11/7/2013	7.41	60.56	48,644

Design	Original Hole				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	1.44	

Survey Program	Date	11/20/2013			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	9,300.00	#1 VES Gyro (Original Hole)	GG ISCWSA	Good Gyro	
9,435.00	14,448.00	#2 Pathfinder MWD (Original Hole)	MWD ISCWSA	MWD - Standard	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.21	7.22	100.00	0.18	0.02	0.18	0.21	0.21	0.00	
200.00	0.23	325.51	200.00	0.53	-0.07	0.53	0.16	0.02	-41.71	
300.00	0.10	65.84	300.00	0.73	-0.10	0.73	0.27	-0.13	100.33	
400.00	0.17	306.41	400.00	0.85	-0.14	0.85	0.24	0.07	-119.43	
500.00	0.26	8.22	500.00	1.17	-0.23	1.16	0.23	0.09	61.81	
600.00	0.25	5.51	600.00	1.61	-0.17	1.60	0.02	-0.01	-2.71	
700.00	0.26	21.18	700.00	2.04	-0.07	2.03	0.07	0.01	15.67	
800.00	0.08	294.76	800.00	2.28	-0.05	2.28	0.27	-0.18	-86.42	
900.00	0.34	304.43	899.99	2.47	-0.36	2.46	0.26	0.26	9.67	

Pathfinder - A Schlumberger Company

Survey Report

Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well Well #1H
Project:	Lea County (NAD83)	TVD Reference:	WELL @ 3992.10usft (Patterson 228)
Site:	Ironhouse 24 State Com	MD Reference:	WELL @ 3992.10usft (Patterson 228)
Well:	Well #1H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.23	277.62	999.99	2.67	-0.81	2.65	0.17	-0.11	-26.81
1,100.00	0.38	306.83	1,099.99	2.89	-1.27	2.86	0.21	0.15	29.21
1,200.00	0.18	283.02	1,199.99	3.13	-1.69	3.09	0.23	-0.20	-23.81
1,300.00	0.17	333.23	1,299.99	3.30	-1.91	3.25	0.15	-0.01	50.21
1,400.00	0.29	265.66	1,399.99	3.41	-2.23	3.35	0.27	0.12	-67.57
1,500.00	0.20	245.94	1,499.99	3.32	-2.64	3.25	0.12	-0.09	-19.72
1,600.00	0.31	317.90	1,599.99	3.45	-2.98	3.37	0.31	0.11	71.96
1,700.00	0.13	310.88	1,699.99	3.72	-3.25	3.64	0.18	-0.18	-7.02
1,800.00	0.32	353.43	1,799.99	4.08	-3.36	3.99	0.24	0.19	42.55
1,900.00	0.09	45.06	1,899.99	4.41	-3.34	4.32	0.27	-0.23	51.63
2,000.00	0.25	12.90	1,999.99	4.68	-3.24	4.59	0.18	0.16	-32.16
2,100.00	0.50	25.03	2,099.98	5.28	-3.00	5.21	0.26	0.25	12.13
2,200.00	0.57	32.59	2,199.98	6.10	-2.55	6.03	0.10	0.07	7.56
2,300.00	0.39	30.83	2,299.98	6.81	-2.11	6.76	0.18	-0.18	-1.76
2,400.00	0.34	38.80	2,399.97	7.33	-1.75	7.29	0.07	-0.05	7.97
2,500.00	0.39	47.13	2,499.97	7.80	-1.31	7.76	0.07	0.05	8.33
2,600.00	0.74	52.46	2,599.97	8.42	-0.55	8.41	0.35	0.35	5.33
2,700.00	0.76	63.16	2,699.96	9.11	0.55	9.13	0.14	0.02	10.70
2,800.00	0.98	55.85	2,799.95	9.89	1.85	9.94	0.25	0.22	-7.31
2,900.00	0.83	61.12	2,899.93	10.72	3.19	10.80	0.17	-0.15	5.27
3,000.00	1.11	55.23	2,999.92	11.63	4.62	11.74	0.30	0.28	-5.89
3,100.00	1.31	50.01	3,099.90	12.91	6.30	13.07	0.23	0.20	-5.22
3,200.00	1.51	49.82	3,199.87	14.50	8.18	14.70	0.20	0.20	-0.19
3,300.00	1.21	79.23	3,299.84	15.55	10.22	15.80	0.75	-0.30	29.41
3,400.00	1.23	71.48	3,399.82	16.08	12.28	16.39	0.17	0.02	-7.75
3,500.00	1.26	73.54	3,499.79	16.74	14.35	17.09	0.05	0.03	2.06
3,600.00	1.10	73.01	3,599.77	17.33	16.32	17.73	0.16	-0.16	-0.53
3,700.00	1.20	61.92	3,699.75	18.10	18.16	18.55	0.24	0.10	-11.09
3,800.00	0.88	72.68	3,799.74	18.82	19.82	19.32	0.37	-0.32	10.76
3,900.00	0.61	55.31	3,899.73	19.35	20.99	19.88	0.35	-0.27	-17.37
4,000.00	0.71	59.79	3,999.72	19.97	21.96	20.51	0.11	0.10	4.48
4,100.00	0.59	62.92	4,099.71	20.52	22.96	21.09	0.13	-0.12	3.13
4,200.00	0.88	55.83	4,199.71	21.18	24.05	21.78	0.30	0.29	-7.09
4,300.00	0.95	47.90	4,299.69	22.17	25.30	22.80	0.14	0.07	-7.93
4,400.00	0.53	37.45	4,399.68	23.09	26.20	23.74	0.44	-0.42	-10.45
4,500.00	0.39	36.05	4,499.68	23.73	26.68	24.40	0.14	-0.14	-1.40
4,600.00	0.50	25.41	4,599.68	24.40	27.07	25.08	0.14	0.11	-10.64
4,700.00	0.54	28.86	4,699.67	25.21	27.48	25.89	0.05	0.04	3.45
4,800.00	0.72	28.00	4,799.67	26.18	28.00	26.87	0.18	0.18	-0.86
4,900.00	0.77	30.55	4,899.66	27.31	28.64	28.02	0.06	0.05	2.55
5,000.00	0.54	12.99	4,999.65	28.35	29.09	29.07	0.30	-0.23	-17.56
5,100.00	0.49	13.03	5,099.65	29.22	29.29	29.95	0.05	-0.05	0.04
5,200.00	0.48	27.36	5,199.65	30.01	29.58	30.75	0.12	-0.01	14.33

Pathfinder - A Schlumberger Company

Survey Report

Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well Well #1H
Project:	Lea County (NAD83)	TVD Reference:	WELL @ 3992.10usft (Patterson 228)
Site:	Ironhouse 24 State Com	MD Reference:	WELL @ 3992.10usft (Patterson 228)
Well:	Well #1H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	0.80	14.63	5,299.64	31.06	29.95	31.80	0.35	0.32	-12.73
5,400.00	0.63	23.31	5,399.63	32.24	30.34	32.99	0.20	-0.17	8.68
5,500.00	0.64	5.55	5,499.63	33.30	30.61	34.06	0.20	0.01	-17.76
5,600.00	0.43	30.56	5,599.62	34.18	30.86	34.94	0.31	-0.21	25.01
5,700.00	0.77	32.12	5,699.62	35.07	31.41	35.85	0.34	0.34	1.56
5,800.00	0.69	15.86	5,799.61	36.22	31.93	37.01	0.22	-0.08	-16.26
5,900.00	0.84	29.12	5,899.60	37.44	32.45	38.24	0.23	0.15	13.26
6,000.00	0.77	28.40	5,999.59	38.67	33.13	39.49	0.07	-0.07	-0.72
6,100.00	0.64	29.56	6,099.58	39.75	33.72	40.58	0.13	-0.13	1.16
6,200.00	0.72	24.56	6,199.57	40.81	34.26	41.65	0.10	0.08	-5.00
6,300.00	0.84	39.04	6,299.57	41.95	34.98	42.81	0.23	0.12	14.48
6,400.00	0.70	50.18	6,399.56	42.91	35.91	43.80	0.20	-0.14	11.14
6,500.00	0.97	22.82	6,499.55	44.08	36.71	44.99	0.47	0.27	-27.36
6,600.00	0.72	17.87	6,599.54	45.46	37.23	46.38	0.26	-0.25	-4.95
6,700.00	0.76	28.69	6,699.53	46.64	37.74	47.57	0.15	0.04	10.82
6,800.00	0.93	31.19	6,799.52	47.91	38.48	48.86	0.17	0.17	2.50
6,900.00	1.02	13.61	6,899.50	49.47	39.11	50.44	0.31	0.09	-17.58
7,000.00	1.20	15.83	6,999.48	51.34	39.60	52.32	0.19	0.18	2.22
7,100.00	1.34	359.98	7,099.46	53.52	39.89	54.51	0.38	0.14	-15.85
7,200.00	1.21	6.02	7,199.43	55.74	40.00	56.73	0.19	-0.13	6.04
7,300.00	1.38	354.25	7,299.41	57.99	39.99	58.98	0.31	0.17	-11.77
7,400.00	1.71	359.44	7,399.37	60.68	39.86	61.66	0.36	0.33	5.19
7,500.00	1.86	2.65	7,499.32	63.79	39.92	64.77	0.18	0.15	3.21
7,600.00	2.21	9.82	7,599.26	67.31	40.32	68.30	0.43	0.35	7.17
7,700.00	1.74	13.86	7,699.20	70.69	41.01	71.69	0.49	-0.47	4.04
7,800.00	1.87	19.02	7,799.15	73.70	41.91	74.73	0.21	0.13	5.16
7,900.00	1.76	24.88	7,899.10	76.64	43.09	77.70	0.22	-0.11	5.86
8,000.00	1.62	8.57	7,999.06	79.43	43.94	80.51	0.50	-0.14	-16.31
8,100.00	1.22	14.54	8,099.03	81.86	44.42	82.95	0.43	-0.40	5.97
8,200.00	1.54	11.99	8,199.00	84.20	44.97	85.31	0.33	0.32	-2.55
8,300.00	1.43	16.75	8,298.96	86.71	45.61	87.83	0.17	-0.11	4.76
8,400.00	1.53	17.14	8,398.93	89.18	46.36	90.32	0.10	0.10	0.39
8,500.00	1.34	14.53	8,498.90	91.59	47.05	92.74	0.20	-0.19	-2.61
8,600.00	1.41	1.74	8,598.87	93.95	47.38	95.11	0.31	0.07	-12.79
8,700.00	1.39	6.28	8,698.84	96.39	47.55	97.55	0.11	-0.02	4.54
8,800.00	1.58	344.13	8,798.81	98.92	47.30	100.08	0.60	0.19	-22.15
8,900.00	1.91	326.19	8,898.76	101.63	46.00	102.75	0.63	0.33	-17.94
9,000.00	2.00	321.88	8,998.70	104.39	43.99	105.46	0.17	0.09	-4.31
9,100.00	2.86	302.87	9,098.62	107.11	40.82	108.11	1.17	0.86	-19.01
9,200.00	2.10	291.58	9,198.52	109.14	37.02	110.04	0.90	-0.76	-11.29
9,300.00	1.62	290.62	9,298.47	110.31	33.99	111.13	0.48	-0.48	-0.96
9,435.00	1.93	313.81	9,433.41	112.56	30.57	113.29	0.57	0.23	17.18
9,467.00	4.13	338.51	9,465.36	114.00	29.76	114.72	7.84	6.88	77.19

Pathfinder - A Schlumberger Company

Survey Report

Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well Well #1H
Project:	Lea County (NAD83)	TVD Reference:	WELL @ 3992.10usft (Patterson 228)
Site:	Ironhouse 24 State Com	MD Reference:	WELL @ 3992.10usft (Patterson 228)
Well:	Well #1H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,498.00	7.47	348.40	9,496.20	117.02	28.94	117.71	11.21	10.77	31.90
9,529.00	10.38	350.14	9,526.82	121.74	28.06	122.41	9.43	9.39	5.61
9,561.00	13.72	351.17	9,558.11	128.34	26.98	128.97	10.46	10.44	3.22
9,592.00	17.06	352.29	9,587.99	136.48	25.81	137.08	10.82	10.77	3.61
9,623.00	20.05	354.07	9,617.38	146.27	24.65	146.85	9.82	9.65	5.74
9,655.00	23.30	355.28	9,647.11	158.04	23.56	158.58	10.25	10.16	3.78
9,686.00	27.00	356.75	9,675.17	171.18	22.66	171.69	12.10	11.94	4.74
9,717.00	30.42	358.23	9,702.35	186.05	22.01	186.55	11.27	11.03	4.77
9,749.00	34.21	359.30	9,729.39	203.15	21.65	203.63	11.98	11.84	3.34
9,781.00	37.64	0.17	9,755.30	221.92	21.57	222.40	10.84	10.72	2.72
9,812.00	40.98	0.76	9,779.29	241.56	21.74	242.03	10.84	10.77	1.90
9,843.00	44.23	1.48	9,802.10	262.54	22.15	263.01	10.60	10.48	2.32
9,875.00	47.48	1.98	9,824.38	285.49	22.85	285.97	10.22	10.16	1.56
9,906.00	50.83	2.43	9,844.66	308.92	23.75	309.42	10.86	10.81	1.45
9,937.00	54.61	2.60	9,863.43	333.55	24.83	334.07	12.20	12.19	0.55
9,969.00	58.48	2.65	9,881.07	360.22	26.06	360.76	12.09	12.09	0.16
10,000.00	61.99	2.12	9,896.45	387.10	27.17	387.66	11.42	11.32	-1.71
10,032.00	66.30	1.20	9,910.41	415.88	28.00	416.45	13.71	13.47	-2.88
10,045.24	68.22	1.02	9,915.53	428.09	28.24	428.66	14.54	14.48	-1.35
Target Line									
10,063.00	70.79	0.79	9,921.74	444.72	28.50	445.30	14.54	14.48	-1.31
10,094.00	75.36	0.49	9,930.76	474.37	28.83	474.94	14.77	14.74	-0.97
10,125.00	80.46	0.57	9,937.26	504.67	29.11	505.24	16.45	16.45	0.26
10,157.00	85.21	0.56	9,941.25	536.41	29.43	536.98	14.84	14.84	-0.03
10,188.00	89.69	1.02	9,942.62	567.37	29.85	567.94	14.53	14.45	1.48
10,220.00	94.88	1.04	9,941.35	599.32	30.43	599.90	16.22	16.22	0.06
10,282.00	96.29	1.56	9,935.32	661.01	31.83	661.60	2.42	2.27	0.84
10,376.00	95.85	1.61	9,925.38	754.45	34.41	755.08	0.47	-0.47	0.05
10,470.00	97.08	1.36	9,914.79	847.82	36.83	848.48	1.33	1.31	-0.27
10,564.00	96.73	1.32	9,903.49	941.11	39.02	941.79	0.37	-0.37	-0.04
10,658.00	96.38	1.01	9,892.76	1,034.48	40.92	1,035.18	0.50	-0.37	-0.33
10,752.00	95.14	1.16	9,883.33	1,127.98	42.69	1,128.70	1.33	-1.32	0.16
10,847.00	94.88	0.75	9,875.03	1,222.61	44.26	1,223.33	0.51	-0.27	-0.43
10,941.00	94.09	0.28	9,867.68	1,316.32	45.11	1,317.03	0.98	-0.84	-0.50
11,035.00	93.91	0.22	9,861.12	1,410.09	45.51	1,410.78	0.20	-0.19	-0.06
11,129.00	94.09	0.07	9,854.56	1,503.86	45.75	1,504.53	0.25	0.19	-0.16
11,223.00	94.09	359.89	9,847.86	1,597.62	45.72	1,598.26	0.19	0.00	-0.19
11,317.00	94.88	359.25	9,840.51	1,691.32	45.02	1,691.92	1.08	0.84	-0.68
11,411.00	95.85	359.58	9,831.72	1,784.91	44.06	1,785.45	1.09	1.03	0.35
11,506.00	95.50	359.57	9,822.33	1,879.44	43.36	1,879.93	0.37	-0.37	-0.01
11,600.00	95.76	0.85	9,813.10	1,972.98	43.70	1,973.46	1.38	0.28	1.36
11,694.00	96.11	0.82	9,803.38	2,066.47	45.06	2,066.95	0.37	0.37	-0.03
11,788.00	95.94	1.30	9,793.52	2,159.93	46.79	2,160.43	0.54	-0.18	0.51
11,882.00	95.41	1.44	9,784.22	2,253.44	49.03	2,253.97	0.58	-0.56	0.15

Pathfinder - A Schlumberger Company

Survey Report

Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well Well #1H
Project:	Lea County (NAD83)	TVD Reference:	WELL @ 3992.10usft (Patterson 228)
Site:	Ironhouse 24 State Com	MD Reference:	WELL @ 3992.10usft (Patterson 228)
Well:	Well #1H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,976.00	95.58	1.39	9,775.22	2,346.98	51.34	2,347.53	0.19	0.18	-0.05
12,070.00	95.32	1.66	9,766.29	2,440.53	53.83	2,441.11	0.40	-0.28	0.29
12,164.00	94.35	2.19	9,758.37	2,534.14	56.98	2,534.77	1.17	-1.03	0.56
12,258.00	93.03	1.94	9,752.32	2,627.88	60.36	2,628.57	1.43	-1.40	-0.27
12,352.00	92.86	1.97	9,747.49	2,721.70	63.56	2,722.44	0.18	-0.18	0.03
12,446.00	92.86	2.52	9,742.80	2,815.51	67.24	2,816.31	0.58	0.00	0.59
12,540.00	92.86	2.38	9,738.11	2,909.31	71.25	2,910.18	0.15	0.00	-0.15
12,634.00	92.95	2.06	9,733.35	3,003.12	74.89	3,004.05	0.35	0.10	-0.34
12,729.00	92.51	2.22	9,728.82	3,097.94	78.43	3,098.94	0.49	-0.46	0.17
12,823.00	93.39	2.02	9,723.99	3,191.75	81.90	3,192.80	0.96	0.94	-0.21
12,917.00	93.21	1.61	9,718.57	3,285.55	84.88	3,286.64	0.48	-0.19	-0.44
13,011.00	93.12	1.83	9,713.38	3,379.36	87.69	3,380.50	0.25	-0.10	0.23
13,105.00	93.56	1.54	9,707.91	3,473.16	90.45	3,474.34	0.56	0.47	-0.31
13,199.00	93.39	1.41	9,702.21	3,566.96	92.87	3,568.17	0.23	-0.18	-0.14
13,293.00	93.47	1.57	9,696.59	3,660.76	95.31	3,662.00	0.19	0.09	0.17
13,387.00	94.18	1.52	9,690.32	3,754.52	97.84	3,755.79	0.76	0.76	-0.05
13,481.00	95.14	1.62	9,682.68	3,848.17	100.40	3,849.48	1.03	1.02	0.11
13,575.00	95.76	1.20	9,673.75	3,941.71	102.71	3,943.05	0.80	0.66	-0.45
13,669.00	95.41	0.69	9,664.60	4,035.25	104.25	4,036.60	0.66	-0.37	-0.54
13,764.00	95.32	0.42	9,655.72	4,129.83	105.17	4,131.17	0.30	-0.09	-0.28
13,858.00	95.23	0.55	9,647.08	4,223.43	105.96	4,224.76	0.17	-0.10	0.14
13,952.00	95.32	0.40	9,638.44	4,317.03	106.73	4,318.35	0.19	0.10	-0.16
14,046.00	94.44	0.47	9,630.44	4,410.69	107.44	4,411.99	0.94	-0.94	0.07
14,140.00	93.83	359.95	9,623.66	4,504.44	107.79	4,505.73	0.85	-0.65	-0.55
14,234.00	93.65	359.78	9,617.53	4,598.24	107.57	4,599.49	0.26	-0.19	-0.18
14,328.00	94.53	0.05	9,610.83	4,692.00	107.43	4,693.22	0.98	0.94	0.29
14,391.00	94.53	359.46	9,605.85	4,754.80	107.16	4,755.99	0.93	0.00	-0.94
14,447.85	94.53	359.46	9,601.36	4,811.47	106.63	4,812.63	0.00	0.00	0.00
Target Line (Well #1H Original Hole Design #1) - PBHL - Ironhouse 24 1H									
14,448.00	94.53	359.46	9,601.35	4,811.62	106.62	4,812.78	0.00	0.00	0.00
Projected to TD									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
10,045.24	9,915.53	Target Line		-4.00	1.44	

Pathfinder - A Schlumberger Company

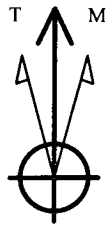
Survey Report

Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well Well #1H
Project:	Lea County (NAD83)	TVD Reference:	WELL @ 3992.10usft (Patterson 228)
Site:	Ironhouse 24 State Com	MD Reference:	WELL @ 3992.10usft (Patterson 228)
Well:	Well #1H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
14,448.00	9,601.35	4,811.62	106.62	Projected to TD

Checked By: _____	Approved By: _____	Date: _____
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Azimuths to Grid North
 True North: -0.45°
 Magnetic North: 6.96°
 Magnetic Field
 Strength: 48643.5nT
 Dip Angle: 60.56°
 Date: 11/7/2013
 Model: BGGM2012

Project: Lea County (NAD83)
 Site: Ironhouse 24 State Com
 Well: Well #1H
 Original Hole
 Original Hole

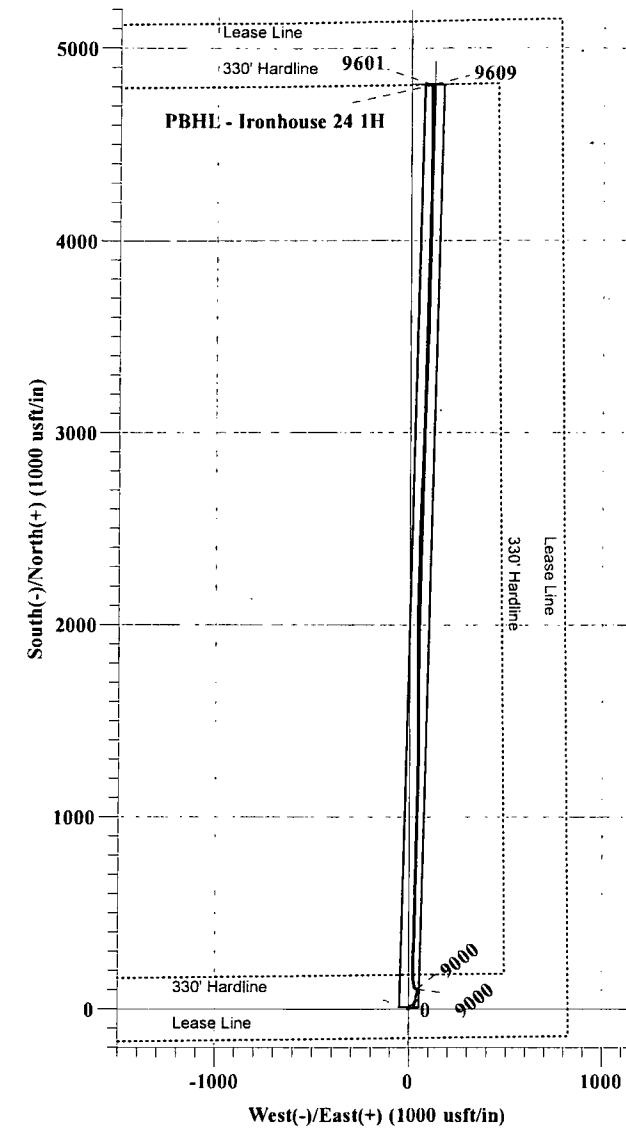
US State Plane 1983
 New Mexico Eastern Zone



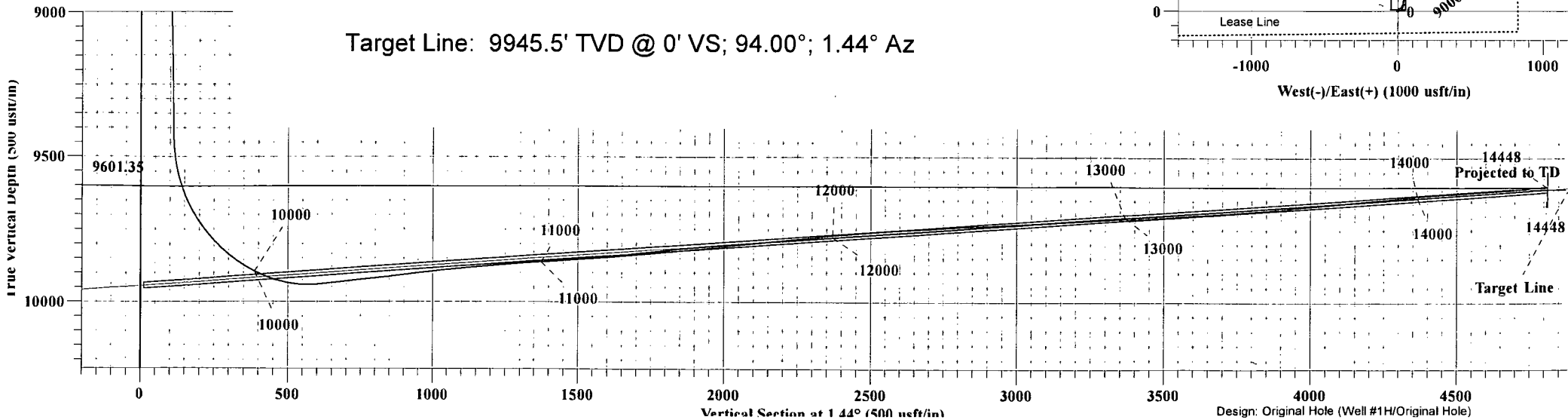
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WELL DETAILS: Well #1H

		WELL @ 3992.10usft (Patterson 228)		3965.60	
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	629008.59	795163.09	$32^\circ 43' 35.280 \text{ N}$	$103^\circ 30' 28.610 \text{ W}$



Target Line: 9945.5' TVD @ 0° VS ; 94.00° ; 1.44° Az



Design: Original Hole (Well #1H/Original Hole)