



Company: Devon Energy Production Co. L.P.
Lease/Well: Beetle Juice 19 Fed /#4H
Location: S9, T19S, R31E
Rig Name: H&P 300
State/County: New Mexico/Eddy
Latitude: 32.65
GRID North is 0.23 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB=26.2 Elevation=3398 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: beetle juice 19 fed #4h_ed.ut

Minimum Curvature Method

Report Date/Time: 2/1/2012 / 08:53

Vaughn Energy Services

Midland, TX

432-563-5444

Surveyor: Zach Garcia

Beetle Juice 19 Fed #4H / API 30-015-39232

30-015-39232

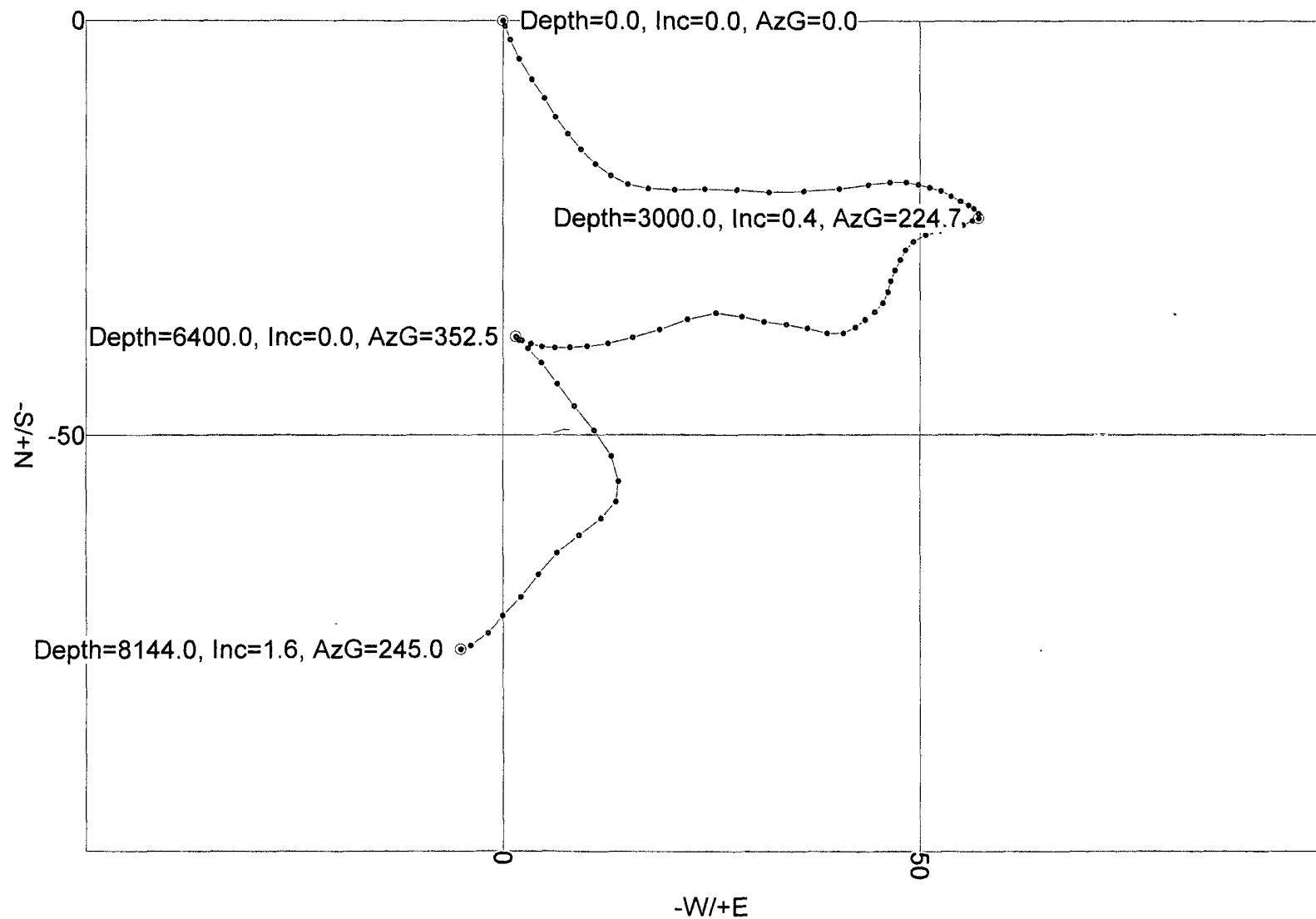
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.78	163.30	100.00	-0.65	0.20	-0.65	0.68	163.30	0.78
200.00	1.23	157.44	199.98	-2.30	0.80	-2.30	2.44	160.73	0.46
300.00	1.71	152.72	299.95	-4.62	1.90	-4.62	4.99	157.63	0.50
400.00	1.61	143.21	399.91	-7.07	3.43	-7.07	7.86	154.14	0.29
500.00	1.51	152.08	499.87	-9.36	4.89	-9.36	10.56	152.44	0.26
600.00	1.50	147.34	599.83	-11.63	6.21	-11.63	13.18	151.90	0.12
700.00	1.38	138.05	699.80	-13.62	7.72	-13.62	15.66	150.46	0.26
800.00	1.44	141.71	799.77	-15.50	9.30	-15.50	18.08	149.04	0.11
900.00	1.36	130.78	899.74	-17.26	10.98	-17.26	20.46	147.54	0.28
1000.00	1.32	122.63	999.72	-18.66	12.85	-18.66	22.66	145.45	0.20
1100.00	1.35	111.91	1099.69	-19.72	14.91	-19.72	24.73	142.91	0.25
1200.00	1.61	91.79	1199.66	-20.21	17.41	-20.21	26.67	139.26	0.58
1300.00	2.02	93.77	1299.61	-20.37	20.57	-20.37	28.95	134.72	0.42
1400.00	2.19	83.51	1399.54	-20.27	24.23	-20.27	31.59	129.91	0.41
1500.00	2.21	99.93	1499.47	-20.38	28.02	-20.38	34.65	126.04	0.63
1600.00	2.24	87.95	1599.39	-20.64	31.87	-20.64	37.97	122.93	0.47
1700.00	2.51	89.18	1699.31	-20.54	36.02	-20.54	41.47	119.70	0.27
1800.00	2.34	82.73	1799.22	-20.25	40.24	-20.25	45.05	116.72	0.32

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	1.72	81.46	1899.15	-19.77	43.75	-19.77	48.01	114.32	0.63
2000.00	1.29	86.36	1999.12	-19.48	46.35	-19.48	50.28	112.79	0.44
2100.00	0.95	93.72	2099.10	-19.46	48.31	-19.46	52.08	111.94	0.37
2200.00	0.79	108.66	2199.09	-19.74	49.79	-19.74	53.56	111.62	0.28
2300.00	0.80	101.20	2299.08	-20.09	51.13	-20.09	54.93	111.45	0.10
2400.00	0.82	112.50	2399.07	-20.50	52.47	-20.50	56.33	111.34	0.16
2500.00	0.84	118.74	2499.06	-21.12	53.77	-21.12	57.77	111.45	0.09
2600.00	0.73	116.29	2599.05	-21.76	54.98	-21.76	59.13	111.59	0.11
2700.00	0.48	116.56	2699.04	-22.23	55.93	-22.23	60.19	111.67	0.25
2800.00	0.46	127.75	2799.04	-22.66	56.62	-22.66	60.99	111.81	0.09
2900.00	0.47	141.83	2899.04	-23.23	57.20	-23.23	61.74	112.11	0.12
3000.00	0.40	224.73	2999.03	-23.80	57.21	-23.80	61.96	112.59	0.58
3100.00	0.60	263.31	3099.03	-24.11	56.44	-24.11	61.38	113.13	0.38
3200.00	0.91	238.04	3199.02	-24.60	55.24	-24.60	60.47	114.00	0.45
3300.00	0.75	266.01	3299.01	-25.06	53.91	-25.06	59.45	114.93	0.43
3400.00	1.03	258.50	3399.00	-25.29	52.37	-25.29	58.15	115.78	0.30
3500.00	1.03	248.44	3498.98	-25.80	50.65	-25.80	56.84	116.99	0.18
3600.00	0.93	234.44	3598.97	-26.60	49.15	-26.60	55.89	118.42	0.26
3700.00	0.73	205.80	3698.96	-27.64	48.22	-27.64	55.58	119.82	0.45
3800.00	0.81	208.06	3798.95	-28.84	47.61	-28.84	55.66	121.20	0.09
3900.00	0.83	206.94	3898.94	-30.10	46.95	-30.10	55.77	122.67	0.02
4000.00	0.77	194.13	3998.93	-31.40	46.46	-31.40	56.07	124.05	0.19
4100.00	0.81	196.20	4098.92	-32.72	46.10	-32.72	56.53	125.37	0.05
4200.00	0.91	212.69	4198.91	-34.06	45.48	-34.06	56.82	126.83	0.26
4300.00	0.81	232.94	4298.90	-35.15	44.49	-35.15	56.70	128.32	0.32
4400.00	0.84	230.98	4398.89	-36.04	43.35	-36.04	56.38	129.74	0.04
4500.00	0.87	232.70	4498.88	-36.96	42.18	-36.96	56.08	131.23	0.04
4600.00	0.99	251.68	4598.86	-37.69	40.76	-37.69	55.52	132.76	0.33
4700.00	1.34	282.95	4698.84	-37.70	38.80	-37.70	54.10	134.17	0.71
4800.00	1.43	285.04	4798.81	-37.11	36.46	-37.11	52.03	135.51	0.11
4900.00	1.51	277.92	4898.78	-36.61	33.95	-36.61	49.93	137.16	0.20
5000.00	1.56	275.47	4998.75	-36.30	31.29	-36.30	47.92	139.24	0.09
5100.00	1.61	290.05	5098.71	-35.69	28.62	-35.69	45.75	141.27	0.40
5200.00	2.05	269.37	5198.66	-35.23	25.52	-35.23	43.50	144.08	0.79
5300.00	2.05	244.80	5298.60	-36.01	22.11	-36.01	42.25	148.45	0.87
5400.00	2.02	254.98	5398.53	-37.23	18.79	-37.23	41.70	153.22	0.36
5500.00	1.88	251.22	5498.48	-38.21	15.53	-38.21	41.25	157.88	0.19
5600.00	1.66	262.17	5598.43	-38.94	12.54	-38.94	40.91	162.14	0.40
5700.00	1.23	263.50	5698.40	-39.26	10.04	-39.26	40.52	165.65	0.44

measured Depth FT	inci 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	1.12	269.02	5798.37	-39.39	8.00	-39.39	40.20	168.52	0.16
5900.00	0.94	267.46	5898.36	-39.45	6.20	-39.45	39.93	171.06	0.18
6000.00	0.85	283.62	5998.35	-39.31	4.67	-39.31	39.59	173.23	0.27
6100.00	0.75	289.40	6098.34	-38.92	3.33	-38.92	39.06	175.11	0.13
6200.00	0.58	290.93	6198.33	-38.52	2.25	-38.52	38.59	176.66	0.17
6300.00	0.18	317.14	6298.33	-38.22	1.67	-38.22	38.26	177.50	0.42
6400.00	0.02	352.54	6398.33	-38.09	1.56	-38.09	38.13	177.66	0.17
6500.00	0.66	139.47	6498.33	-38.52	1.93	-38.52	38.57	177.13	0.67
6600.00	0.98	128.43	6598.32	-39.49	2.97	-39.49	39.60	175.69	0.35
6700.00	1.73	143.94	6698.29	-41.24	4.53	-41.24	41.49	173.73	0.83
6800.00	1.88	142.02	6798.24	-43.75	6.43	-43.75	44.22	171.64	0.17
6900.00	2.01	143.23	6898.18	-46.46	8.50	-46.46	47.23	169.64	0.14
7000.00	2.32	139.47	6998.11	-49.40	10.86	-49.40	50.58	167.60	0.34
7100.00	2.01	154.06	7098.04	-52.52	12.94	-52.52	54.09	166.15	0.63
7200.00	1.65	175.15	7197.99	-55.54	13.84	-55.54	57.23	166.01	0.76
7300.00	1.28	205.04	7297.96	-57.98	13.48	-57.98	59.53	166.91	0.84
7400.00	1.88	232.95	7397.92	-59.98	11.70	-59.98	61.11	168.96	0.96
7500.00	1.91	231.88	7497.86	-62.00	9.09	-62.00	62.66	171.66	0.05
7600.00	1.98	230.73	7597.81	-64.12	6.44	-64.12	64.44	174.27	0.08
7700.00	1.98	211.93	7697.75	-66.68	4.19	-66.68	66.81	176.41	0.65
7800.00	1.93	222.82	7797.69	-69.39	2.13	-69.39	69.42	178.25	0.37
7900.00	1.68	225.41	7897.64	-71.65	-0.06	-71.65	71.65	180.05	0.27
8000.00	1.49	215.34	7997.60	-73.74	-1.86	-73.74	73.76	181.44	0.33
8100.00	1.61	251.88	8097.57	-75.24	-3.95	-75.24	75.34	183.00	0.98
8144.00	1.62	244.95	8141.55	-75.70	-5.10	-75.70	75.87	183.86	0.44



Vaughn Energy Services
Midland, TX
432-563-5444
Surveyor: Zach Garcia
Beetle Juice 19 Fed #4H / API 30-015-39232



VES Survey Date: 12/25/2011

Pathfinder

6213 WCR 112
Midland, Texas 79705
Tel: (432) 687-1647
Fax: (432) 687-1544



January 17, 2012

Devon Energy
20 N. Broadway
Oklahoma City, OK

RE: Devon Energy
Beetle Juice 19 FED #4H
API: 30-015-39232
Eddy County, NM
RIG: H&P 300
FIELD: Hackberry; Bone Spring, NW
PES FILE NO.: 700004628-WT-WT

To whom it may concern:

We hereby certify that the enclosed Original Field Survey Data contained in this report represents to the best of our knowledge, a true and accurate survey of the well at the time the survey was run.

DIRECTIONAL SURVEY DATA

- 1 – Original survey report
- 2 – Survey report copies

We appreciate the opportunity to work with you and we look forward to your business support. If you have any questions, I can be reached at (432) 687-1647

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Bibb".

STEVE BIBB
M/LWD Service Coordinator
PathFinder Energy Services

ML:sh



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

DEVON ENERGY

BEETLE JUICE 19 FED #4H

EDDY COUNTY, NEW MEXICO

PREPARED BY: STEVE BIBB

Pathfinder

9210 WCR 112
Midland, Texas 79706
Tel (432)887-1647
Fax (432)887-1544



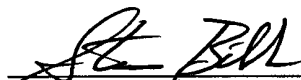
DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) ALEX CASTILLO
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 12-27-11 TO 01-04-12
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY
7. TYPE OF SURVEY(S) PERFORMED: GAMMA-RAY
8. COMPLETE IDENTIFICATION OF WELL:

DEVON ENERGY
BEETLE JUICE 19 FED #4H
EDDY COUNTY, NM
RIG: H&P 300

9. SURVEY CERTIFIED FROM: 8181 TO 13282 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4761.77 FEET ON A BEARING OF 186.81 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 13330 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



STEVE BIBB
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 12/27/2011
Date Completed: 01/04/2012

DEVON ENERGY
BEETLE JUICE 19 FEDERAL 4H
HACKBERRY; BONE SPRING, NW
Rig:H & P 300
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers:A. CASTILLO
N. DUFF

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.39.8.8914 N LON:103.54.44.1015 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 670935.8600 Y: 601356.4400
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.48° EAST TO GRID
Vertical Section Plane: 186.58
Survey Vert. Reference: 26.00' Rotary Table To Ground
Altitude:3398.00' Ground To MSL

Measured Depth	13330.00	(feet)
Inclination	89.43	(deg)
Azimuth	181.76	(deg)
True Vertical Depth	8838.88	(feet)
Vertical Section	4761.73	(feet)
Survey X cord	670370.95	(feet)
Survey Y cord	596628.27	(feet)
Survey Lat	32.63947992 N	(deg)
Survey Lon	103.91414649 W	(deg)
Rectangular Corr. N/S	4728.15 S	(feet)
Rectangular Corr. E/W	564.89 W	(feet)
Closure Distance	4761.77	(feet)
Direction of Closure	186.81	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY
BEETLE JUICE 19 FEDERAL 4H
EDDY COUNTY, NM
Rig:H & P 300
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: A. CASTILLO
N. DUFF

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.39.8.8914 N LON:103.54.44.1015 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 670935.8600 Y: 601356.4400
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.48° EAST TO GRID
Vertical Section Plane: 186.58
Survey Vert. Reference: 26.00' Rotary Table To Ground
Altitude:3398.00' Ground To MSL

Survey Calculations by RX4 using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular (ft)	Offsets (ft)	Closure Dist (ft)	Dir (deg)	DLS (dg/100ft)
THE FOLLOWING ARE VAUGHN ENERGY SERVICE GYRO SURVEYS.										
0.00	0.00	0.00	-0.00	0.00	-0.00	0.00 N	0.00 W	0.01@	321.58	0.00
100.00	0.78	163.30	100.00	100.00	0.62	0.65 S	0.19 E	0.68@	163.47	0.78
200.00	1.23	157.44	199.98	100.00	2.18	2.29 S	0.80 E	2.43@	160.76	0.46
300.00	1.71	152.72	299.95	100.00	4.36	4.61 S	1.90 E	4.98@	157.64	0.49
400.00	1.61	143.21	399.91	100.00	6.62	7.06 S	3.42 E	7.84@	154.15	0.29
500.00	1.51	152.08	499.87	100.00	8.73	9.35 S	4.88 E	10.55@	152.44	0.26
600.00	1.50	147.34	599.83	100.00	10.83	11.61 S	6.20 E	13.17@	151.90	0.12
700.00	1.38	138.05	699.80	100.00	12.64	13.61 S	7.71 E	15.65@	150.46	0.26
800.00	1.44	141.71	799.77	100.00	14.33	15.49 S	9.30 E	18.07@	149.03	0.11
900.00	1.36	130.78	899.74	100.00	15.88	17.26 S	10.97 E	20.45@	147.54	0.28
1000.00	1.32	122.63	999.72	100.00	17.06	18.65 S	12.84 E	22.65@	145.45	0.19
1100.00	1.35	111.91	1099.69	100.00	17.87	19.71 S	14.91 E	24.71@	142.90	0.25
1200.00	1.61	91.79	1199.66	100.00	18.07	20.20 S	17.40 E	26.66@	139.25	0.58
1300.00	2.02	93.77	1299.61	100.00	17.86	20.36 S	20.57 E	28.94@	134.71	0.41
1400.00	2.19	83.51	1399.54	100.00	17.35	20.26 S	24.22 E	31.58@	129.90	0.41
1500.00	2.21	99.93	1499.47	100.00	17.03	20.37 S	28.02 E	34.64@	126.02	0.63
1600.00	2.24	87.95	1599.39	100.00	16.85	20.63 S	31.87 E	37.97@	122.92	0.46
1700.00	2.51	89.18	1699.30	100.00	16.27	20.53 S	36.01 E	41.46@	119.69	0.27
1800.00	2.34	82.73	1799.22	100.00	15.50	20.24 S	40.23 E	45.04@	116.71	0.32
1900.00	1.72	81.46	1899.15	100.00	14.62	19.76 S	43.74 E	48.00@	114.31	0.62
2000.00	1.29	86.36	1999.12	100.00	14.03	19.47 S	46.35 E	50.27@	112.78	0.45
2100.00	0.95	93.72	2099.10	100.00	13.79	19.45 S	48.30 E	52.07@	111.94	0.37
2200.00	0.79	108.66	2199.09	100.00	13.89	19.72 S	49.78 E	53.54@	111.62	0.28
2300.00	0.80	101.20	2299.08	100.00	14.09	20.08 S	51.12 E	54.92@	111.45	0.10
2400.00	0.82	112.50	2399.07	100.00	14.34	20.49 S	52.46 E	56.32@	111.33	0.16

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY
BEETLE JUICE 19 FEDERAL 4H
EDDY COUNTY, NM
RIG:H & P 300

Page 02/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
2500.00	0.84	118.74	2499.06	100.00	14.82	21.12 S	53.77 E	57.76@	111.44	0.09
2600.00	0.73	116.29	2599.05	100.00	15.31	21.75 S	54.98 E	59.13@	111.59	0.12
2700.00	0.48	116.56	2699.04	100.00	15.67	22.22 S	55.92 E	60.18@	111.67	0.25
2800.00	0.46	127.75	2799.04	100.00	16.02	22.65 S	56.62 E	60.98@	111.81	0.09
2900.00	0.47	141.83	2899.04	100.00	16.52	23.22 S	57.19 E	61.72@	112.10	0.12
3000.00	0.40	224.73	2999.03	100.00	17.08	23.79 S	57.20 E	61.95@	112.59	0.58
3100.00	0.60	263.31	3099.03	100.00	17.48	24.10 S	56.43 E	61.36@	113.13	0.38
3200.00	0.91	238.04	3199.02	100.00	18.09	24.58 S	55.24 E	60.46@	113.99	0.45
3300.00	0.75	266.01	3299.01	100.00	18.71	25.05 S	53.91 E	59.44@	114.92	0.43
3400.00	1.03	258.50	3399.00	100.00	19.10	25.27 S	52.38 E	58.15@	115.76	0.30
3500.00	1.03	248.44	3498.98	100.00	19.81	25.78 S	50.66 E	56.84@	116.97	0.18
3600.00	0.93	234.44	3598.97	100.00	20.78	26.58 S	49.16 E	55.89@	118.40	0.26
3700.00	0.73	205.80	3698.96	100.00	21.92	27.63 S	48.23 E	55.58@	119.81	0.45
3800.00	0.81	208.06	3798.95	100.00	23.18	28.83 S	47.62 E	55.66@	121.19	0.09
3900.00	0.83	206.94	3898.94	100.00	24.52	30.10 S	46.96 E	55.77@	122.66	0.03
4000.00	0.77	194.13	3998.93	100.00	25.86	31.39 S	46.46 E	56.08@	124.05	0.19
4100.00	0.81	196.20	4098.92	100.00	27.23	32.72 S	46.10 E	56.54@	125.37	0.05
4200.00	0.91	212.69	4198.91	100.00	28.64	34.07 S	45.48 E	56.82@	126.84	0.27
4300.00	0.81	232.94	4298.90	100.00	29.84	35.17 S	44.48 E	56.70@	128.33	0.32
4400.00	0.84	230.98	4398.89	100.00	30.85	36.05 S	43.35 E	56.38@	129.75	0.04
4500.00	0.87	232.70	4498.88	100.00	31.90	36.98 S	42.18 E	56.09@	131.24	0.04
4600.00	0.99	251.68	4598.86	100.00	32.79	37.71 S	40.75 E	55.52@	132.78	0.33
4700.00	1.34	282.95	4698.84	100.00	33.02	37.72 S	38.79 E	54.10@	134.19	0.71
4800.00	1.43	285.04	4798.81	100.00	32.71	37.13 S	36.45 E	52.03@	135.53	0.10
4900.00	1.51	277.92	4898.78	100.00	32.49	36.63 S	33.94 E	49.93@	137.18	0.20
5000.00	1.56	275.47	4998.75	100.00	32.49	36.31 S	31.28 E	47.93@	139.26	0.08
5100.00	1.61	290.05	5098.71	100.00	32.19	35.70 S	28.60 E	45.75@	141.30	0.41
5200.00	2.05	269.37	5198.66	100.00	32.09	35.24 S	25.49 E	43.50@	144.12	0.79

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY
BEETLE JUICE 19 FEDERAL 4H
EDDY COUNTY, NM
RIG:H & P 300

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular (ft)	Offsets (ft)	Closure Dist (ft)	Dir (deg)	DLS (dg/100ft)
5300.00	2.05	244.80	5298.60	100.00	33.25	36.02 S	22.09 E	42.25@	148.48	0.87
5400.00	2.02	254.98	5398.53	100.00	34.84	37.24 S	18.77 E	41.70@	153.25	0.36
5500.00	1.88	251.22	5498.47	100.00	36.20	38.22 S	15.51 E	41.25@	157.91	0.19
5600.00	1.66	262.17	5598.43	100.00	37.26	38.95 S	12.52 E	40.91@	162.17	0.40
5700.00	1.23	263.50	5698.40	100.00	37.86	39.27 S	10.02 E	40.53@	165.68	0.43
5800.00	1.12	269.02	5798.37	100.00	38.23	39.41 S	7.98 E	40.21@	168.55	0.16
5900.00	0.94	267.46	5898.36	100.00	38.49	39.46 S	6.18 E	39.94@	171.10	0.18
6000.00	0.85	283.62	5998.35	100.00	38.53	39.32 S	4.64 E	39.59@	173.27	0.27
6100.00	0.75	289.40	6098.34	100.00	38.29	38.93 S	3.30 E	39.07@	175.15	0.13
6200.00	0.58	290.93	6198.33	100.00	38.02	38.53 S	2.21 E	38.60@	176.71	0.17
6300.00	0.18	317.14	6298.33	100.00	37.80	38.24 S	1.63 E	38.27@	177.55	0.43
6400.00	0.02	352.54	6398.33	100.00	37.68	38.10 S	1.53 E	38.13@	177.71	0.16
6500.00	0.66	139.47	6498.32	100.00	38.05	38.52 S	1.90 E	38.57@	177.18	0.68
6600.00	0.98	128.43	6598.31	100.00	38.90	39.49 S	2.94 E	39.60@	175.74	0.36
6700.00	1.73	143.94	6698.29	100.00	40.46	41.24 S	4.50 E	41.49@	173.77	0.83
6800.00	1.88	142.02	6798.24	100.00	42.74	43.76 S	6.40 E	44.22@	171.68	0.16
6900.00	2.01	143.23	6898.18	100.00	45.18	46.46 S	8.46 E	47.22@	169.68	0.14
7000.00	2.32	139.47	6998.11	100.00	47.83	49.40 S	10.82 E	50.57@	167.64	0.34
7100.00	2.01	154.06	7098.04	100.00	50.69	52.51 S	12.90 E	54.08@	166.19	0.63
7200.00	1.65	175.15	7197.99	100.00	53.58	55.53 S	13.79 E	57.21@	166.05	0.76
7300.00	1.28	205.04	7297.96	100.00	56.05	57.97 S	13.44 E	59.51@	166.95	0.84
7400.00	1.88	232.95	7397.92	100.00	58.24	59.97 S	11.66 E	61.10@	169.00	0.96
7500.00	1.91	231.88	7497.86	100.00	60.55	61.99 S	9.04 E	62.65@	171.70	0.05
7600.00	1.98	230.73	7597.81	100.00	62.96	64.11 S	6.39 E	64.43@	174.31	0.08
7700.00	1.98	211.93	7697.75	100.00	65.76	66.67 S	4.14 E	66.80@	176.45	0.65
7800.00	1.93	222.82	7797.69	100.00	68.68	69.37 S	2.08 E	69.40@	178.28	0.37
7900.00	1.68	225.41	7897.64	100.00	71.18	71.64 S	0.11 W	71.64@	180.08	0.26
8000.00	1.49	215.34	7997.60	100.00	73.46	73.73 S	1.90 W	73.75@	181.48	0.34

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY
BEETLE JUICE 19 FEDERAL 4H
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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
8100.00	1.61	251.88	8097.57	100.00	75.19	75.22 S	3.99 W	75.33@	183.04	0.98
** TIED INTO VAUGHN ENERGY SERVICE GYRO SURVEY @ 8144.00'MD.										
8144.00	1.62	244.95	8141.55	44.00	75.77	75.68 S	5.14 W	75.85@	183.89	0.44
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
8181.00	2.73	222.56	8178.52	37.00	76.76	76.55 S	6.21 W	76.80@	184.64	3.72
8214.00	5.89	210.24	8211.43	33.00	78.95	78.59 S	7.59 W	78.96@	185.52	9.92
8246.00	9.94	210.44	8243.12	32.00	82.98	82.39 S	9.82 W	82.98@	186.80	12.66
8277.00	13.37	214.35	8273.47	31.00	88.60	87.66 S	13.20 W	88.65@	188.56	11.35
8309.00	15.65	214.01	8304.45	32.00	95.70	94.29 S	17.70 W	95.94@	190.63	7.13
8340.00	18.03	213.31	8334.12	31.00	103.70	101.77 S	22.68 W	104.27@	192.56	7.71
8372.00	20.58	213.27	8364.32	32.00	113.15	110.61 S	28.48 W	114.22@	194.44	7.97
8403.00	22.34	214.11	8393.17	31.00	123.24	120.05 S	34.78 W	124.98@	196.16	5.76
8435.00	24.27	215.83	8422.55	32.00	134.37	130.42 S	42.04 W	137.02@	197.87	6.40
8466.00	26.12	217.95	8450.60	31.00	145.76	140.96 S	49.96 W	149.56@	199.52	6.64
8498.00	27.96	217.04	8479.10	32.00	158.24	152.51 S	58.82 W	163.46@	201.09	5.89
8529.00	30.25	215.85	8506.19	31.00	171.32	164.64 S	67.77 W	178.04@	202.37	7.62
8561.00	32.98	215.77	8533.44	32.00	185.96	178.24 S	77.58 W	194.39@	203.52	8.53
8593.00	35.96	212.36	8559.82	32.00	202.03	193.25 S	87.70 W	212.22@	204.41	11.09
8624.00	37.99	214.37	8584.58	31.00	218.67	208.82 S	97.96 W	230.65@	205.13	7.62
8656.00	40.63	214.75	8609.34	32.00	236.57	225.51 S	109.46 W	250.67@	205.89	8.28
8687.00	43.88	215.32	8632.28	31.00	254.89	242.57 S	121.43 W	271.27@	206.59	10.56
8719.00	45.99	215.22	8654.93	32.00	274.71	261.02 S	134.48 W	293.63@	207.26	6.60
8750.00	48.28	215.34	8676.02	31.00	294.64	279.57 S	147.60 W	316.14@	207.83	7.39
8782.00	51.79	215.74	8696.57	32.00	316.10	299.52 S	161.86 W	340.46@	208.39	11.01
8813.00	55.40	216.26	8714.97	31.00	337.83	319.70 S	176.53 W	365.20@	208.91	11.72
8845.00	59.36	216.33	8732.21	32.00	361.23	341.42 S	192.48 W	391.94@	209.41	12.38
8876.00	63.84	215.71	8746.96	31.00	384.97	363.47 S	208.51 W	419.03@	209.84	14.56
8908.00	68.15	214.89	8759.97	32.00	410.60	387.33 S	225.39 W	448.13@	210.20	13.67
8939.00	72.28	214.84	8770.46	31.00	436.29	411.26 S	242.06 W	477.21@	210.48	13.32

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY
BEETLE JUICE 19 FEDERAL 4H
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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
8971.00	75.53	213.49	8779.33	32.00	463.53	436.69 S	259.32 W	507.89@	210.70	10.93
9002.00	79.49	212.65	8786.03	31.00	490.62	462.05 S	275.83 W	538.12@	210.84	13.05
9034.00	83.45	212.35	8790.78	32.00	519.07	488.74 S	292.83 W	569.75@	210.93	12.41
9065.00	86.44	212.35	8793.51	31.00	546.88	514.82 S	309.35 W	600.62@	211.00	9.65
9097.00	87.85	211.24	8795.11	32.00	575.79	541.98 S	326.19 W	632.57@	211.04	5.61
9128.00	89.69	210.59	8795.77	31.00	604.03	568.57 S	342.12 W	663.56@	211.04	6.30
9160.00	90.22	209.13	8795.80	32.00	633.42	596.32 S	358.05 W	695.56@	210.98	4.85
9203.00	91.01	206.85	8795.34	43.00	673.45	634.29 S	378.23 W	738.50@	210.81	5.61
9298.00	91.45	205.23	8793.29	95.00	763.00	719.62 S	419.92 W	833.18@	210.26	1.77
9392.00	90.40	201.71	8791.78	94.00	852.92	805.82 S	457.34 W	926.56@	209.58	3.91
9487.00	89.08	198.68	8792.21	95.00	945.24	894.97 S	490.14 W	1020.39@	208.71	3.48
9581.00	88.29	194.99	8794.37	94.00	1037.69	984.90 S	517.35 W	1112.51@	207.71	4.01
9676.00	87.76	191.07	8797.64	95.00	1132.02	1077.38 S	538.75 W	1204.57@	206.57	4.16
9771.00	87.67	187.48	8801.43	95.00	1226.82	1171.05 S	554.05 W	1295.50@	205.32	3.78
9865.00	88.02	183.61	8804.97	94.00	1320.72	1264.52 S	563.12 W	1384.24@	204.00	4.13
9960.00	88.64	178.85	8807.74	95.00	1415.24	1359.43 S	565.16 W	1472.23@	202.57	5.05
10055.00	88.55	180.07	8810.07	95.00	1509.48	1454.40 S	564.26 W	1560.02@	201.20	1.29
10149.00	88.72	178.87	8812.31	94.00	1602.73	1548.37 S	563.39 W	1647.68@	199.99	1.29
10244.00	91.36	177.77	8812.24	95.00	1696.73	1643.31 S	560.61 W	1736.31@	198.84	3.01
10339.00	90.75	178.86	8810.49	95.00	1790.73	1738.26 S	557.82 W	1825.57@	197.79	1.32
10433.00	90.13	180.35	8809.77	94.00	1884.02	1832.25 S	557.17 W	1915.09@	196.91	1.72
10528.00	90.04	181.82	8809.63	95.00	1978.58	1927.23 S	558.97 W	2006.65@	196.17	1.55
10622.00	91.01	179.57	8808.77	94.00	2072.08	2021.21 S	560.11 W	2097.38@	195.49	2.61
10717.00	91.36	178.91	8806.80	95.00	2166.28	2116.18 S	558.85 W	2188.73@	194.79	0.79
10811.00	87.41	178.78	8807.81	94.00	2259.40	2210.14 S	556.95 W	2279.23@	194.14	4.20
10906.00	87.14	180.37	8812.33	95.00	2353.58	2305.02 S	556.25 W	2371.19@	193.57	1.70
11000.00	87.05	182.22	8817.09	94.00	2447.06	2398.88 S	558.37 W	2463.00@	193.10	1.97
11095.00	87.05	179.67	8821.98	95.00	2541.46	2493.73 S	559.94 W	2555.82@	192.66	2.68

PathFinder Energy Services, Inc.

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
11189.00	88.29	179.10	8825.80	94.00	2634.65	2587.64 S	558.93 W	2647.32@	192.19	1.45
11284.00	88.64	181.19	8828.35	95.00	2729.01	2682.60 S	559.17 W	2740.26@	191.77	2.23
11378.00	88.55	180.06	8830.65	94.00	2822.47	2776.57 S	560.19 W	2832.52@	191.41	1.20
11473.00	88.90	178.90	8832.77	95.00	2916.72	2871.54 S	559.33 W	2925.51@	191.02	1.27
11567.00	88.37	179.89	8835.01	94.00	3009.95	2965.51 S	558.34 W	3017.61@	190.66	1.19
11662.00	90.31	179.92	8836.10	95.00	3104.30	3060.49 S	558.18 W	3110.98@	190.34	2.04
11756.00	89.87	181.32	8835.95	94.00	3197.79	3154.49 S	559.20 W	3203.67@	190.05	1.56
11851.00	89.78	179.06	8836.24	95.00	3292.19	3249.48 S	559.51 W	3297.30@	189.77	2.38
11945.00	89.78	180.49	8836.60	94.00	3385.52	3343.48 S	559.14 W	3389.91@	189.49	1.52
12040.00	89.69	181.61	8837.04	95.00	3480.08	3438.46 S	560.88 W	3483.90@	189.26	1.18
12134.00	90.22	179.91	8837.12	94.00	3573.59	3532.44 S	562.13 W	3576.89@	189.04	1.89
12229.00	89.69	178.07	8837.19	95.00	3667.75	3627.43 S	560.46 W	3670.47@	188.78	2.02
12323.00	89.69	179.19	8837.70	94.00	3760.85	3721.40 S	558.21 W	3763.03@	188.53	1.19
12418.00	88.90	180.65	8838.87	95.00	3855.20	3816.38 S	558.08 W	3856.97@	188.32	1.75
12512.00	88.11	181.60	8841.32	94.00	3948.74	3910.33 S	559.92 W	3950.22@	188.15	1.32
12607.00	88.72	179.44	8843.95	95.00	4043.16	4005.29 S	560.78 W	4044.35@	187.97	2.36
12701.00	90.48	179.36	8844.61	94.00	4136.42	4099.28 S	559.80 W	4137.32@	187.78	1.87
12796.00	91.28	179.38	8843.15	95.00	4230.66	4194.26 S	558.75 W	4231.31@	187.59	0.84
12890.00	91.19	180.32	8841.12	94.00	4323.99	4288.24 S	558.51 W	4324.45@	187.42	1.00
12985.00	90.57	181.11	8839.66	95.00	4418.48	4383.21 S	559.69 W	4418.80@	187.28	1.06
13079.00	90.31	179.90	8838.94	94.00	4511.95	4477.21 S	560.52 W	4512.16@	187.14	1.32
13174.00	90.48	180.76	8838.28	95.00	4606.38	4572.20 S	561.07 W	4606.50@	187.00	0.92
13269.00	89.52	181.61	8838.28	95.00	4700.95	4667.18 S	563.03 W	4701.02@	186.88	1.35
13282.00	89.43	181.76	8838.40	13.00	4713.91	4680.17 S	563.42 W	4713.96@	186.86	1.34
STRAIGHT LINE PROJECTION TO BIT @ 13330' MD (8838' TVD).										
13330.00	89.43	181.76	8838.88	48.00	4761.73	4728.15 S	564.89 W	4761.77@	186.81	0.00

PathFinder Energy Services, Inc.

Survey Report

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**** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder Energy Services, Inc. and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.**



A Schlumberger Company

TIE-IN SURVEY INFORMATION SHEET**CLIENT INFORMATION**

CLIENT:	DEVON ENERGY		
LEASE / WELL No.:	BEETLE JUICE 19 FEDERAL	#4H	
WELL LOCATION:	EDDY COUNTY, NEW MEXICO		
COUNTY / STATE / COUNTRY:	EDDY	NM	USA
RIG:	H&P 300		
API WELL No:	30-015-39232		
JOB No:	700004628-WT-WT		
P.O. / AFE No.	157341		
DIRECTIONAL COMPANY:	PATHFINDER		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.49	LWD Calculated:	7.483649
		Agreed Upon:	7.48
X =	670935.860000	Feet	Y = 601356.440000
			Feet
SITE LATITUDE:	32.652470 N	SITE LONGITUDE:	103.912250 W
GRID SYSTEM:	TRUE ☐ UTM ☐ LAMBERT ☒	ZONE:	New Mexico East
PROPOSED DRIFT DIRECTION:	186.58		
KELLY BUSHING ELEVATION:	26 Feet		
ALTITUDE:	3398	Feet	WATER DEPTH:
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	8144		
DRIFT ANGLE:	1.62		
DRIFT DIRECTION:	244.95		
TRUE VERTICAL DEPTH:	8141.55		
VERTICAL SECTION:	186.58 75.77		
RECTANGULAR COORDINATE (N / S) :	-75.68		
RECTANGULAR COORDINATE (E / W) :	-5.14		
CLOSURE DISTANCE / DIRECTION:	75.87	183.86	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	VAUGHN ENERGY SERVICE		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	8217	TOTAL DEPTH:	13417.5
KICKOFF ANGLE:	0	MAX ANGLE:	90

PES Engineers: ALEX CASTILLO
NICK DUFF

**Signature of both field engineers required if applicable

Directional Driller: JORDAN WILLIAMSDATE: 26-Dec-2011



Company: Devon Energy
Lease/Well: Beetle Juice 19 Fed #4H/#4H
Location: S9, T19S, R31E
Rig Name: H&P 300
State/County: New Mexico/Eddy
Latitude: 32.65, Longitude: -103.91
GRID North is 0.23 Degrees East of True North
VS-Azi: 0.00 Degrees

VES

FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB=26.2 Elevation=3398 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: beetle juice 19 fed #4h_ed.ut

Minimum Curvature Method

Report Date/Time: 12/26/2011 / 10:49

Vaughn Energy Services

Midland, TX

432-563-5444

Zach Garcia

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	0.78	163.30	100.00	-0.65	0.20	-0.65	0.68	163.30	0.78
200.00	1.23	157.44	199.98	-2.30	0.80	-2.30	2.44	160.73	0.46
300.00	1.71	152.72	299.95	-4.62	1.90	-4.62	4.99	157.63	0.50
400.00	1.61	143.21	399.91	-7.07	3.43	-7.07	7.86	154.14	0.29
500.00	1.51	152.08	499.87	-9.36	4.89	-9.36	10.56	152.44	0.26
600.00	1.50	147.34	599.83	-11.63	6.21	-11.63	13.18	151.90	0.12
700.00	1.38	138.05	699.80	-13.62	7.72	-13.62	15.66	150.46	0.26
800.00	1.44	141.71	799.77	-15.50	9.30	-15.50	18.08	149.04	0.11
900.00	1.36	130.78	899.74	-17.26	10.98	-17.26	20.46	147.54	0.28
1000.00	1.32	122.63	999.72	-18.66	12.85	-18.66	22.66	145.45	0.20
1100.00	1.35	111.91	1099.69	-19.72	14.91	-19.72	24.73	142.91	0.25
1200.00	1.61	91.79	1199.66	-20.21	17.41	-20.21	26.67	139.26	0.58
1300.00	2.02	93.77	1299.61	-20.37	20.57	-20.37	28.95	134.72	0.42
1400.00	2.19	83.51	1399.54	-20.27	24.23	-20.27	31.59	129.91	0.41
1500.00	2.21	99.93	1499.47	-20.38	28.02	-20.38	34.65	126.04	0.63
1600.00	2.24	87.95	1599.39	-20.64	31.87	-20.64	37.97	122.93	0.47
1700.00	2.51	89.18	1699.31	-20.54	36.02	-20.54	41.47	119.70	0.27
1800.00	2.34	82.73	1799.22	-20.25	40.24	-20.25	45.05	116.72	0.32
1900.00	1.72	81.46	1899.15	-19.77	43.75	-19.77	48.01	114.32	0.63
2000.00	1.29	86.36	1999.12	-19.48	46.35	-19.48	50.28	112.79	0.44
2100.00	0.95	93.72	2099.10	-19.46	48.31	-19.46	52.08	111.94	0.37
2200.00	0.79	108.66	2199.09	-19.74	49.79	-19.74	53.56	111.62	0.28
2300.00	0.80	101.20	2299.08	-20.09	51.13	-20.09	54.93	111.45	0.10
2400.00	0.82	112.50	2399.07	-20.50	52.47	-20.50	56.33	111.34	0.16
2500.00	0.84	118.74	2499.06	-21.12	53.77	-21.12	57.77	111.45	0.09
2600.00	0.73	116.29	2599.05	-21.76	54.98	-21.76	59.13	111.59	0.11
2700.00	0.48	116.56	2699.04	-22.23	55.93	-22.23	60.19	111.67	0.25
2800.00	0.46	127.75	2799.04	-22.66	56.62	-22.66	60.99	111.81	0.09
2900.00	0.47	141.83	2899.04	-23.23	57.20	-23.23	61.74	112.11	0.12
3000.00	0.40	224.73	2999.03	-23.80	57.21	-23.80	61.96	112.59	0.58
3100.00	0.60	263.31	3099.03	-24.11	56.44	-24.11	61.38	113.13	0.38
3200.00	0.91	238.04	3199.02	-24.60	55.24	-24.60	60.47	114.00	0.45
3300.00	0.75	266.01	3299.01	-25.06	53.91	-25.06	59.45	114.93	0.43
3400.00	1.03	258.50	3399.00	-25.29	52.37	-25.29	58.15	115.78	0.30

Depth FT	Angle Deg	Direction Deg	TVD T	+N/-S FT	+E/-W FT	Section FT	Distance FT	Direction Deg	Severity Deg/100
3500.00	1.03	248.44	3498.98	-25.80	50.65	-25.80	56.84	116.99	0.18
3600.00	0.93	234.44	3598.97	-26.60	49.15	-26.60	55.89	118.42	0.26
3700.00	0.73	205.80	3698.96	-27.64	48.22	-27.64	55.58	119.82	0.45
3800.00	0.81	208.06	3798.95	-28.84	47.61	-28.84	55.66	121.20	0.09
3900.00	0.83	206.94	3898.94	-30.10	46.95	-30.10	55.77	122.67	0.02
4000.00	0.77	194.13	3998.93	-31.40	46.46	-31.40	56.07	124.05	0.19
4100.00	0.81	196.20	4098.92	-32.72	46.10	-32.72	56.53	125.37	0.05
4200.00	0.91	212.69	4198.91	-34.06	45.48	-34.06	56.82	126.83	0.26
4300.00	0.81	232.94	4298.90	-35.15	44.49	-35.15	56.70	128.32	0.32
4400.00	0.84	230.98	4398.89	-36.04	43.35	-36.04	56.38	129.74	0.04
4500.00	0.87	232.70	4498.88	-36.96	42.18	-36.96	56.08	131.23	0.04
4600.00	0.99	251.68	4598.86	-37.69	40.76	-37.69	55.52	132.76	0.33
4700.00	1.34	282.95	4698.84	-37.70	38.80	-37.70	54.10	134.17	0.71
4800.00	1.43	285.04	4798.81	-37.11	36.46	-37.11	52.03	135.51	0.11
4900.00	1.51	277.92	4898.78	-36.61	33.95	-36.61	49.93	137.16	0.20
5000.00	1.56	275.47	4998.75	-36.30	31.29	-36.30	47.92	139.24	0.09
5100.00	1.61	290.05	5098.71	-35.69	28.62	-35.69	45.75	141.27	0.40
5200.00	2.05	269.37	5198.66	-35.23	25.52	-35.23	43.50	144.08	0.79
5300.00	2.05	244.80	5298.60	-36.01	22.11	-36.01	42.25	148.45	0.87
5400.00	2.02	254.98	5398.53	-37.23	18.79	-37.23	41.70	153.22	0.36
5500.00	1.88	251.22	5498.48	-38.21	15.53	-38.21	41.25	157.88	0.19
5600.00	1.66	262.17	5598.43	-38.94	12.54	-38.94	40.91	162.14	0.40
5700.00	1.23	263.50	5698.40	-39.26	10.04	-39.26	40.52	165.65	0.44
5800.00	1.12	269.02	5798.37	-39.39	8.00	-39.39	40.20	168.52	0.16
5900.00	0.94	267.46	5898.36	-39.45	6.20	-39.45	39.93	171.06	0.18
6000.00	0.85	283.62	5998.35	-39.31	4.67	-39.31	39.59	173.23	0.27
6100.00	0.75	289.40	6098.34	-38.92	3.33	-38.92	39.06	175.11	0.13
6200.00	0.58	290.93	6198.33	-38.52	2.25	-38.52	38.59	176.66	0.17
6300.00	0.18	317.14	6298.33	-38.22	1.67	-38.22	38.26	177.50	0.42
6400.00	0.02	352.54	6398.33	-38.09	1.56	-38.09	38.13	177.66	0.17
6500.00	0.66	139.47	6498.33	-38.52	1.93	-38.52	38.57	177.13	0.67
6600.00	0.98	128.43	6598.32	-39.49	2.97	-39.49	39.60	175.69	0.35
6700.00	1.73	143.94	6698.29	-41.24	4.53	-41.24	41.49	173.73	0.83
6800.00	1.88	142.02	6798.24	-43.75	6.43	-43.75	44.22	171.64	0.17
6900.00	2.01	143.23	6898.18	-46.46	8.50	-46.46	47.23	169.64	0.14
7000.00	2.32	139.47	6998.11	-49.40	10.86	-49.40	50.58	167.60	0.34
7100.00	2.01	154.06	7098.04	-52.52	12.94	-52.52	54.09	166.15	0.63
7200.00	1.65	175.15	7197.99	-55.54	13.84	-55.54	57.23	166.01	0.76
7300.00	1.28	205.04	7297.96	-57.98	13.48	-57.98	59.53	166.91	0.84
7400.00	1.88	232.95	7397.92	-59.98	11.70	-59.98	61.11	168.96	0.96
7500.00	1.91	231.88	7497.86	-62.00	9.09	-62.00	62.66	171.66	0.05
7600.00	1.98	230.73	7597.81	-64.12	6.44	-64.12	64.44	174.27	0.08
7700.00	1.98	211.93	7697.75	-66.68	4.19	-66.68	66.81	176.41	0.65
7800.00	1.93	222.82	7797.69	-69.39	2.13	-69.39	69.42	178.25	0.37
7900.00	1.68	225.41	7897.64	-71.65	-0.06	-71.65	71.65	180.05	0.27
8000.00	1.49	215.34	7997.60	-73.74	-1.86	-73.74	73.76	181.44	0.33
8100.00	1.61	251.88	8097.57	-75.24	-3.95	-75.24	75.34	183.00	0.98
8144.00	1.62	244.95	8141.55	-75.70	-5.40	-75.70	75.87	183.86	0.44

HORIZONTAL DISPLACEMENT IS
75.87 FEET AT 183.86 DEGREES



A Schlumberger Company

PathFinder Energy Services, Inc. Magnetic & Grid Calculations

DEVON ENERGY
BEETLE JUICE 19 FED #4H
EDDY COUNTY, NM
Rig:HP 300

Mon Dec 12 13:57:25 2011

Coordinates

Latitude: 32.652470 N (32 deg. 39 min. 8.8914 sec.)
Longitude: 103.912250 W (-103 deg. 54 min. 44.1015 sec.)
Elevation: 3424.00 feet.
Calculation Date: Dec/12/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.5127 degrees
Total Magnetic Field: 0.48788 gauss
Magnetic Declination: 7.714868 degrees
Horizontal Intensity: 0.240148 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.714868 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 670935.8600 feet
Y: 601356.4400 feet
True to Grid: (convergence) -0.227195 degrees
Magnetic to Grid: 7.487673 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.487673 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

Sat Dec 24 19:15:55 2011

Coordinates

Latitude: 32.652470 N (32 deg. 39 min. 8.8914 sec.)
Longitude: 103.912250 W (-103 deg. 54 min. 44.1015 sec.)
Elevation: 3424.00 feet.
Calculation Date: Dec/24/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.5119 degrees
Total Magnetic Field: 0.48784 gauss
Magnetic Declination: 7.710844 degrees
Horizontal Intensity: 0.240137 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.710844 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 670935.8600 feet
Y: 601356.4400 feet
True to Grid: (convergence) -0.227195 degrees
Magnetic to Grid: 7.483649 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.483649 Degr.