

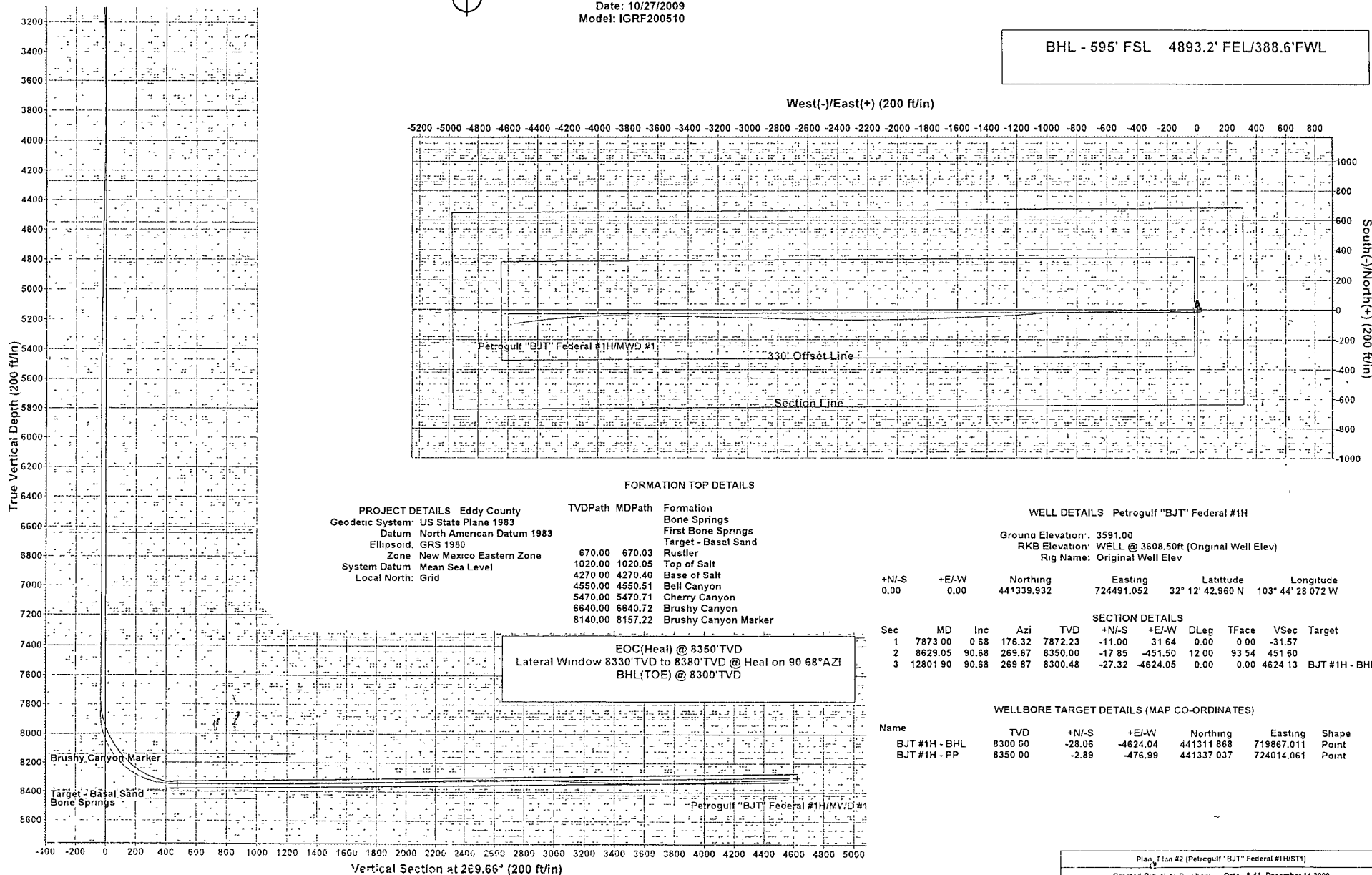
Azimuths to Grid North
True North: -0.32°
Magnetic North: 7.53°

Magnetic Field
Strength: 48782.6snT
Dip Angle: 60.20°
Date: 10/27/2009
Model: IGRF200510

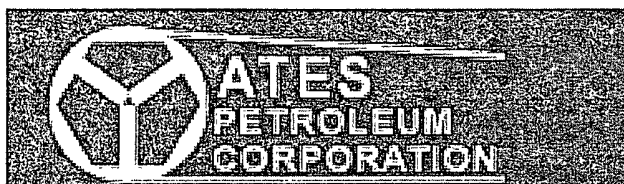
Project: Eddy County
Site: Petrogulf "BJT" Federal
Well: Petrogulf "BJT" Federal #1H
Wellbore: ST1
Plan: Plan #2 (Petrogulf "BJT" Federal #1H/ST1)

PATHFINDER

BHL - 595' FSL 4893.2' FEL/388.6'FWL



600 Rev'd 3-25-10



Yates Petroleum Corp.

Eddy County

Petrogulf "BJT" Federal

Petrogulf "BJT" Federal #1H

ST1

Survey: MWD #1

Pathfinder X & Y Survey Report

14 December, 2009

PATHFINDER



Pathfinder Energy Services

Pathfinder X & Y Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well Petrogulf "BJT" Federal #1H
Project:	Eddy County	TVD Reference:	WELL @ 3608.50ft (Original Well Elev)
Site:	Petrogulf "BJT" Federal	MD Reference:	WELL @ 3608.50ft (Original Well Elev)
Well:	Petrogulf "BJT" Federal #1H	North Reference:	Grid
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Midland Database

Site:	Petrogulf "BJT" Federal
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Site Position:		Northing:	441,339.932 ft	Latitude:	32° 12' 42 960 N
From:	Map	Easting:	724,491.052 ft	Longitude:	103° 44' 28 072 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0 32 °

Wellbore:	ST1
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/27/2009	7.85	60.20	48,783

Design:	ST1
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Site:	Petrogulf "BJT" Federal	MD Reference:	WELL @ 3608.50ft (Original Well Elev)
Well:	Petrogulf "BJT" Federal #1H	North Reference:	Grid
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Midland Database

Survey Program		Date 12/14/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
952.00	4,428.00	Pilot Hole (OH)	MWD	MWD - Standard
7,833.00	12,704.00	MWD #1 (ST1)	MWD	MWD - Standard

Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)	
7,700.00	0.58	140.90	7,699.24	4,090.74	-9.38	30.92	-30.86	0.00	441,330.55	724,521.97	
7,833.00	5.01	251.21	7,832.07	4,223.57	-11.78	25.84	-25.77	3.94	441,328.16	724,516.89	
7,865.00	9.06	253.61	7,863.83	4,255.33	-12.94	22.10	-22.02	12.69	441,326.99	724,513.15	
7,897.00	12.93	255.71	7,895.23	4,286.73	-14.53	16.21	-16.12	12.16	441,325.40	724,507.26	
7,928.00	16.36	258.32	7,925.22	4,316.72	-16.27	8.57	-8.47	11.26	441,323.66	724,499.62	
7,960.00	19.61	261.86	7,955.66	4,347.16	-17.95	-1.16	1.27	10.71	441,321.98	724,489.89	
7,992.00	22.51	266.13	7,985.52	4,377.02	-19.12	-12.59	12.71	10.25	441,320.81	724,478.46	
8,024.00	25.76	267.77	8,014.72	4,406.22	-19.81	-25.66	25.77	10.37	441,320.13	724,465.40	
8,055.00	28.58	270.03	8,042.29	4,433.79	-20.06	-39.81	39.92	9.69	441,319.87	724,451.25	
8,088.00	31.30	271.93	8,070.89	4,462.39	-19.77	-56.27	56.39	8.73	441,320.16	724,434.78	
8,120.00	33.77	273.94	8,097.86	4,489.36	-18.88	-73.45	73.56	8.42	441,321.05	724,417.60	
8,151.00	36.05	276.10	8,123.28	4,514.78	-17.32	-91.12	91.22	8.37	441,322.61	724,399.93	
8,183.00	38.69	276.48	8,148.71	4,540.21	-15.19	-110.43	110.51	8.28	441,324.74	724,380.63	
8,215.00	41.42	276.09	8,173.21	4,564.71	-12.94	-130.89	130.97	8.57	441,327.00	724,360.16	
8,246.00	44.41	276.91	8,195.91	4,587.41	-10.54	-151.86	151.92	9.81	441,329.39	724,339.19	
8,278.00	48.01	275.29	8,218.05	4,609.55	-8.10	-174.83	174.87	11.83	441,331.83	724,316.22	
8,310.00											



Pathfinder Energy Services

Pathfinder X & Y Survey Report



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Project:	Eddy County	TVD Reference:	WELL @ 3608.50ft (Original Well Elev)
Site:	Petrogulf "BJT" Federal	MD Reference:	WELL @ 3608.50ft (Original Well Elev)
Well:	Petrogulf "BJT" Federal #1H	North Reference:	Grid
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Midland Database

Survey										
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	EW (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
8,468.00	69.73	269.24	8,313.41	4,704.91	-2.76	-337.57	337.58	9.55	441,337.17	724,153.48
8,500.00	73.07	268.81	8,323.61	4,715.11	-3.28	-367.89	367.90	10.51	441,336.65	724,123.16
8,532.00	77.38	268.79	8,331.77	4,723.27	-3.93	-398.82	398.83	13.47	441,336.00	724,092.23
8,563.00	81.95	268.62	8,337.33	4,728.83	-4.62	-429.30	429.32	14.75	441,335.32	724,061.75
8,595.00	83.80	268.02	8,341.30	4,732.80	-5.55	-461.04	461.06	6.07	441,334.38	724,030.02
8,611.66	84.13	267.56	8,343.05	4,734.55	-6.19	-477.59	477.62	3.41	441,333.75	724,013.46
BJT #1H - PP										
8,617.00	84.24	267.41	8,343.59	4,735.09	-6.42	-482.90	482.93	3.41	441,333.51	724,008.15
8,649.00	85.30	267.79	8,346.51	4,738.01	-7.75	-514.74	514.77	3.52	441,332.18	723,976.31
8,681.00	88.29	268.04	8,348.30	4,739.80	-8.92	-546.66	546.71	9.38	441,331.02	723,944.39
8,712.00	89.87	268.69	8,348.79	4,740.29	-9.80	-577.65	577.69	5.51	441,330.13	723,913.41
8,744.00	90.13	268.73	8,348.79	4,740.29	-10.52	-609.64	609.69	0.82	441,329.41	723,881.41
8,839.00	90.22	268.14	8,348.50	4,740.00	-13.12	-704.60	704.67	0.63	441,326.82	723,786.45
8,934.00	90.31	268.80	8,348.07	4,739.57	-15.65	-799.57	799.64	0.70	441,324.28	723,691.49
9,029.00	89.69	268.42	8,348.07	4,739.57	-17.96	-894.54	894.63	0.77	441,321.98	723,596.52
9,124.00	89.52	267.07	8,348.72	4,740.22	-21.69	-989.46	989.57	1.43	441,318.24	723,501.59
9,219.00	90.31	266.68	8,348.86	4,740.36	-26.87	-1,084.32	1,084.46	0.93	441,313.06	723,406.74
9,315.00	89.96	266.15	8,348.64	4,740.14	-32.88	-1,180.13	1,180.30	0.66	441,307.06	723,310.92
9,410.00	91.01	266.98	8,347.83	4,739.33	-38.57	-1,274.95	1,275.16	1.41	441,301.36	723,216.10
9,505.00	90.75	267.51	8,346.37	4,737.87	-43.13	-1,369.83	1,370.06	0.62	441,296.80	



Pathfinder Energy Services

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Site:	Petrogulf "BJT" Federal	MD Reference:	WELL @ 3608.50ft (Original Well Elev)
Well:	Petrogulf "BJT" Federal #1H	North Reference:	Grid
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Midland Database

MD (ft)	Inc. (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	D Leg (%/100ft)	Northing (ft)	Easting (ft)
10,266.00	91.98	269.54	8,325.51	4,717.01	-66.25	-2,130.08	2,130.44	0.94	441,273.68	722,360.97
10,361.00	92.33	269.92	8,321.93	4,713.43	-66.69	-2,225.01	2,225.37	0.54	441,273.24	722,266.04
10,456.00	91.63	269.76	8,318.65	4,710.15	-66.96	-2,319.95	2,320.31	0.76	441,272.97	722,171.10
10,551.00	91.36	270.80	8,316.17	4,707.67	-66.50	-2,414.92	2,415.27	1.13	441,273.44	722,076.13
10,647.00	89.43	271.60	8,315.51	4,707.01	-64.49	-2,510.89	2,511.23	2.18	441,275.45	721,980.16
10,742.00	89.60	271.02	8,316.31	4,707.81	-62.31	-2,605.86	2,606.19	0.64	441,277.62	721,885.19
10,837.00	91.98	271.14	8,315.00	4,706.50	-60.52	-2,700.83	2,701.14	2.51	441,279.41	721,790.22
10,932.00	89.87	272.43	8,313.47	4,704.97	-57.56	-2,795.76	2,796.06	2.60	441,282.37	721,695.29
11,027.00	89.08	272.29	8,314.34	4,705.84	-53.65	-2,890.68	2,890.95	0.84	441,286.28	721,600.37
11,122.00	85.47	270.85	8,318.86	4,710.36	-51.05	-2,985.52	2,985.77	4.09	441,288.88	721,505.53
11,218.00	86.53	270.40	8,325.55	4,717.05	-50.01	-3,081.28	3,081.52	1.20	441,289.92	721,409.78
11,313.00	88.55	271.44	8,329.63	4,721.13	-48.48	-3,176.17	3,176.40	2.39	441,291.45	721,314.88
11,408.00	88.37	271.24	8,332.18	4,723.68	-46.26	-3,271.11	3,271.33	0.28	441,293.67	721,219.94
11,503.00	88.64	270.93	8,334.66	4,726.16	-44.46	-3,366.06	3,366.26	0.43	441,295.47	721,124.99
11,598.00	89.16	270.99	8,336.49	4,727.99	-42.87	-3,461.03	3,461.22	0.55	441,297.06	721,030.02
11,693.00	89.25	270.84	8,337.80	4,729.30	-41.36	-3,556.01	3,556.19	0.18	441,298.58	720,935.04
11,788.00	89.16	270.66	8,339.12	4,730.62	-40.11	-3,650.99	3,651.16	0.21	441,299.82	720,840.06
11,883.00	90.04	270.38	8,339.79	4,731.29	-39.25	-3,745.98	3,746.15	0.97	441,300.68	720,745.07
11,978.00	93.39	271.19	8,336.94	4,728.44	-37.95	-3,840.92	3,841.07	3.63	441,301.98	720,650.13
12,073.00	92.24	268.89	8,332.28	4,723.78	-37.88	-3,935.79	3,935.95	2.70	441,302.05	720,5



Pathfinder Energy Services
Pathfinder X & Y Survey Report



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Well:	Petrogulf "BJT" Federal #1H	North Reference:	Grid
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Midland Database

Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)	
12,704.00	91.28	262.66	8,311.58	4,703.08	-92.08	-4,563.66	4,564.12	0.00	441,247.86	719,927.40	
BHL--595' FSL--4893.2' FEL/388.6' FWL - BJT #1H - BHL											

Targets:											
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
BJT #1H PP		0.00	0.00	8,350.00	-2.89	-476.99	441,337.037	724,014.061	32° 12' 42.957 N	103° 44' 33.624 W	
- survey misses by 7.71ft at 8611.66ft MD (8343.05 TVD, -6.19 N, -477.59 E)											
- Point											
BJT #1H - BHL		0.00	0.00	8,300.00	-28.06	-4,624.04	441,311.868	719,867.011	32° 12' 42.931 N	103° 45' 21.895 W	
- survey misses by 88.76ft at 12704.00ft MD (8311.58 TVD, -92.08 N, -4563.66 E)											
- Point											

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
12,704.00	8,311.58	-92.08	-4,563.66	BHL--595' FSL--4893.2' FEL/388.6' FWL	

Checked By: _____	Approved By: _____	Date: _____
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