



Job Number: SVCO-111056

Company: Yates Petroleum Corporation

Lease/Well: Waldrup JY 3H

Location: Eddy County, NM

Rig Name: Patterson #101

RKB: 19'

G.L. or M.S.L.: GL

State/Country: New Mexico/USA

Declination: 7.99°

Grid: East To Grid

File name: F:\SURVEY\2011SU~1\YATES\WALDR3H.SVY

Date/Time: 23-Aug-11 / 14:46

Curve Name: Surface - 2180' M.D. (Gyroscopic)

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 179.92
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
 Surface MD to 2180' MD is, to the best of
 our knowledge a true and accurate account of the
 well bore.
 Dana Jutte 8/23/11
 MS Energy Services Date

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
200.00	.25	166.89	200.00	-.42	.10	.43	.44	166.89	.12
400.00	.25	132.45	400.00	-1.14	.52	1.15	1.26	155.57	.07
600.00	1.00	345.01	599.99	.25	.39	-.25	.46	57.68	.61
800.00	.50	268.57	799.98	1.91	-.93	-1.91	2.13	333.97	.50
1000.00	.25	219.25	999.97	1.55	-2.08	-1.55	2.60	306.69	.19
1200.00	.25	214.81	1199.97	.86	-2.61	-.86	2.74	288.16	.01
1400.00	.25	27.36	1399.97	.88	-2.66	-.89	2.80	288.42	.25
1600.00	.25	55.92	1599.97	1.52	-2.09	-1.52	2.59	305.92	.06
1800.00	.25	235.48	1799.97	1.51	-2.09	-1.52	2.58	305.89	.25

30-015-39301

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
2000.00	.50	314.04	1999.96	1.87	-3.08	-1.88	3.60	301.32	.26
Last Survey Depth Recorded									
2180.00	.75	248.60	2179.95	1.99	-4.74	-2.00	5.14	292.77	.39



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

30-015-38301

YATES PETROLEUM

WALDRIP JY #3H

EDDY COUNTY, NEW MEXICO

PREPARED BY: FRANCISCO SINISTERRA

Pathfinder

6213 WCR 112
Midland, Texas 79706
Tel (432)687-1647
Fax (432)687-1544



DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JUAN ALCOCER
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 08-24-11 TO 09-02-11
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: GAMMA-RAY
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
WALDRIP JY #3H
EDDY COUNTY, NM
RIG: PATTERSON 101

9. SURVEY CERTIFIED FROM: 2426 TO 7411 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4708.81 FEET ON A BEARING OF 180.18 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 7457 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.


FRANCISCO SINISTERRA
MWD COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 08/23/2011
Date Completed: 09/02/2011

YATES PETROLEUM CORPORATION

WALDRIP JY #3H

EDDY COUNTY, NM

Rig:PATTERSON 101

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers:JUAN ALCOCER

HUEY SANDIFER

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.42.39.8498 N LON:104.22.31.2454 W

GRID Reference:NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 528415.6040 Y: 622421.0000

North Aligned To:GRID NORTH

Total Magnetic Correction: 7.99° EAST TO GRID

Vertical Section Plane: 179.92

Survey Vert. Reference: 18.50' Kelly Bushing To Ground

Altitude:3380.00' Ground To MSL

Measured Depth	7457.00	(feet)
Inclination	90.48	(deg)
Azimuth	184.47	(deg)
True Vertical Depth	2942.73	(feet)
Vertical Section	4708.76	(feet)
Survey X cord	528401.00	(feet)
Survey Y cord	617712.21	(feet)
Survey Lat	32.69812634 N	(deg)
Survey Lon	104.37538736 W	(deg)
Rectangular Corr. N/S	4708.79 S	(feet)
Rectangular Corr. E/W	14.61 W	(feet)
Closure Distance	4708.81	(feet)
Direction of Closure	180.18	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION

WALDRIP JY #3H

EDDY COUNTY, NM

Rig:PATTERSON 101

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: JUAN ALCOCER

HUEY SANDIFER

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.42.39.8498 N LON:104.22.31.2454 W

GRID Reference:NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 528415.6040 Y: 622421.0000

North Aligned To:GRID NORTH

Total Magnetic Correction: 7.99° EAST TO GRID

Vertical Section Plane: 179.92

Survey Vert. Reference: 18.50' Kelly Bushing To Ground

Altitude:3380.00' Ground To MSL

Survey Calculations by RX5 V6.03E using Minimum Curvature

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)
0.00	0.00	0.00	-0.00	0.00	-0.00	0.00 N	0.00 E	0.00@	0.82	0.00
THE FOLLOWING ARE MS ENERGY GYRO SURVEYS.										
200.00	0.25	166.89	200.00	200.00	0.42	0.42 S	0.10 E	0.44@	166.87	0.13
400.00	0.25	132.45	399.99	200.00	1.14	1.14 S	0.52 E	1.26@	155.56	0.07
600.00	1.00	345.01	599.99	200.00	-0.25	0.25 N	0.39 E	0.46@	57.61	0.61
800.00	0.50	268.57	799.97	200.00	-1.91	1.91 N	0.93 W	2.13@	333.98	0.50
1000.00	0.25	219.25	999.97	200.00	-1.56	1.55 N	2.08 W	2.60@	306.71	0.19
1200.00	0.25	214.81	1199.97	200.00	-0.86	0.86 N	2.61 W	2.74@	288.18	0.01
1400.00	0.25	27.36	1399.96	200.00	-0.89	0.89 N	2.66 W	2.80@	288.44	0.25
1600.00	0.25	55.92	1599.96	200.00	-1.52	1.52 N	2.09 W	2.59@	305.93	0.06
1800.00	0.25	235.48	1799.96	200.00	-1.52	1.51 N	2.09 W	2.58@	305.91	0.25
2000.00	0.50	314.04	1999.96	200.00	-1.88	1.87 N	3.08 W	3.60@	301.33	0.26
** TIE IN TO MS ENERGY GYRO SURVEYS.										
2180.00	0.75	248.60	2179.95	180.00	-2.00	1.99 N	4.74 W	5.14@	292.77	0.39
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
2426.00	0.88	302.60	2425.93	246.00	-2.43	2.42 N	7.83 W	8.20@	287.18	0.30
2436.00	1.06	299.96	2435.93	10.00	-2.52	2.51 N	7.98 W	8.36@	287.46	1.85
2467.00	1.32	257.07	2466.92	31.00	-2.58	2.57 N	8.57 W	8.95@	286.70	2.91
2499.00	3.43	211.72	2498.89	32.00	-1.69	1.67 N	9.43 W	9.58@	280.06	8.35
2531.00	7.30	200.65	2530.75	32.00	1.03	1.04 S	10.66 W	10.71@	264.41	12.46
2563.00	11.61	197.13	2562.31	32.00	6.01	6.03 S	12.32 W	13.72@	243.94	13.58
2594.00	16.18	195.46	2592.39	31.00	13.15	13.17 S	14.39 W	19.51@	227.53	14.80
2626.00	20.66	194.67	2622.74	32.00	22.91	22.94 S	17.01 W	28.56@	216.56	14.02
2658.00	24.45	193.97	2652.29	32.00	34.80	34.83 S	20.04 W	40.18@	209.92	11.87
2690.00	27.61	192.56	2681.04	32.00	48.46	48.50 S	23.25 W	53.78@	205.62	10.06
2721.00	30.86	190.89	2708.09	31.00	63.28	63.32 S	26.32 W	68.57@	202.57	10.81

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
WALDRIP JY #3H
EDDY COUNTY, NM
RIG:PATTERSON 101

Page 02/04

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)
2752.00	34.73	189.48	2734.14	31.00	79.80	79.84 S	29.28 W	85.04@	200.14	12.72
2784.00	39.31	187.81	2759.69	32.00	98.84	98.89 S	32.16 W	103.98@	198.01	14.65
2816.00	43.53	184.39	2783.68	32.00	119.88	119.93 S	34.38 W	124.76@	196.00	14.96
2848.00	47.22	181.75	2806.16	32.00	142.61	142.66 S	35.58 W	147.03@	194.00	12.94
2880.00	49.86	181.05	2827.34	32.00	166.59	166.64 S	36.16 W	170.52@	192.24	8.41
2911.00	52.14	181.14	2846.85	31.00	190.67	190.72 S	36.63 W	194.21@	190.87	7.36
2943.00	56.01	181.40	2865.62	32.00	216.57	216.62 S	37.20 W	219.79@	189.74	12.11
2974.00	60.41	179.64	2881.95	31.00	242.91	242.96 S	37.43 W	245.83@	188.76	14.99
3005.00	64.19	178.15	2896.36	31.00	270.35	270.40 S	36.89 W	272.91@	187.77	12.91
3036.00	67.01	176.74	2909.17	31.00	298.55	298.60 S	35.63 W	300.72@	186.81	9.99
3067.00	70.35	176.30	2920.43	31.00	327.37	327.42 S	33.88 W	329.17@	185.91	10.86
3099.00	74.74	175.25	2930.03	32.00	357.81	357.86 S	31.63 W	359.25@	185.05	14.07
3131.00	78.08	174.72	2937.55	32.00	388.80	388.84 S	28.91 W	389.91@	184.25	10.56
3163.00	80.72	174.10	2943.44	32.00	420.10	420.14 S	25.84 W	420.93@	183.52	8.47
3195.00	84.50	174.10	2947.55	32.00	451.67	451.70 S	22.58 W	452.26@	182.86	11.81
3282.00	88.81	175.51	2952.63	87.00	538.15	538.17 S	14.72 W	538.37@	181.57	5.21
3345.00	90.66	174.89	2952.92	63.00	600.93	600.95 S	9.45 W	601.02@	180.90	3.10
3407.00	90.92	175.33	2952.06	62.00	662.71	662.71 S	4.17 W	662.73@	180.36	0.82
3470.00	90.57	175.25	2951.24	63.00	725.50	725.50 S	1.01 E	725.50@	179.92	0.57
3533.00	90.57	176.56	2950.62	63.00	788.34	788.33 S	5.51 E	788.35@	179.60	2.08
3596.00	90.40	177.44	2950.08	63.00	851.25	851.24 S	8.80 E	851.29@	179.41	1.42
3691.00	90.31	177.97	2949.49	95.00	946.18	946.16 S	12.61 E	946.25@	179.24	0.57
3786.00	90.22	178.23	2949.05	95.00	1041.13	1041.11 S	15.76 E	1041.23@	179.13	0.29
3881.00	90.04	178.76	2948.84	95.00	1136.10	1136.08 S	18.25 E	1136.22@	179.08	0.59
3976.00	89.96	179.55	2948.84	95.00	1231.09	1231.06 S	19.65 E	1231.22@	179.09	0.84
4072.00	91.45	179.99	2947.66	96.00	1327.08	1327.05 S	20.04 E	1327.21@	179.13	1.62
4167.00	91.19	180.43	2945.47	95.00	1422.05	1422.03 S	19.69 E	1422.16@	179.21	0.54
4262.00	91.10	181.66	2943.57	95.00	1517.01	1516.99 S	17.96 E	1517.10@	179.32	1.30

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
WALDRIP JY #3H
EDDY COUNTY, NM
RIG:PATTERSON 101

Page 03/04

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)
4357.00	91.36	181.84	2941.53	95.00	1611.94	1611.92 S 15.06 E	1611.99@ 179.46	0.33
4453.00	89.96	182.45	2940.43	96.00	1707.86	1707.85 S 11.46 E	1707.89@ 179.62	1.59
4548.00	90.66	182.72	2939.91	95.00	1802.76	1802.75 S 7.18 E	1802.76@ 179.77	0.79
4644.00	89.87	181.75	2939.47	96.00	1898.68	1898.67 S 3.44 E	1898.68@ 179.90	1.30
4738.00	89.78	181.93	2939.76	94.00	1992.62	1992.62 S 0.42 E	1992.62@ 179.99	0.21
4833.00	90.22	183.16	2939.76	95.00	2087.52	2087.53 S 3.80 W	2087.53@ 180.10	1.37
4928.00	90.40	184.21	2939.24	95.00	2182.31	2182.33 S 9.91 W	2182.35@ 180.26	1.12
5022.00	88.64	183.86	2940.03	94.00	2276.06	2276.09 S 16.52 W	2276.15@ 180.42	1.91
5108.00	88.55	184.04	2942.14	86.00	2361.83	2361.86 S 22.44 W	2361.97@ 180.54	0.23
5202.00	88.99	182.28	2944.16	94.00	2455.65	2455.69 S 27.62 W	2455.85@ 180.64	1.93
5298.00	89.25	183.16	2945.63	96.00	2551.52	2551.57 S 32.18 W	2551.77@ 180.72	0.96
5393.00	89.25	181.14	2946.87	95.00	2646.44	2646.49 S 35.74 W	2646.73@ 180.77	2.13
5489.00	88.72	181.40	2948.57	96.00	2742.40	2742.45 S 37.87 W	2742.71@ 180.79	0.61
5584.00	89.43	179.90	2950.11	95.00	2837.37	2837.43 S 38.95 W	2837.70@ 180.79	1.75
5679.00	90.13	178.50	2950.47	95.00	2932.36	2932.42 S 37.62 W	2932.66@ 180.74	1.65
5774.00	90.31	179.29	2950.11	95.00	3027.34	3027.40 S 35.79 W	3027.61@ 180.68	0.85
5869.00	90.40	179.73	2949.52	95.00	3122.34	3122.39 S 34.98 W	3122.59@ 180.64	0.47
5963.00	89.69	179.99	2949.45	94.00	3216.34	3216.39 S 34.75 W	3216.58@ 180.62	0.81
6057.00	90.92	179.02	2948.94	94.00	3310.33	3310.38 S 33.93 W	3310.56@ 180.59	1.67
6153.00	90.57	177.18	2947.70	96.00	3406.27	3406.32 S 30.75 W	3406.46@ 180.52	1.95
6249.00	90.22	177.44	2947.03	96.00	3502.17	3502.21 S 26.25 W	3502.31@ 180.43	0.45
6343.00	89.96	178.32	2946.89	94.00	3596.11	3596.14 S 22.77 W	3596.22@ 180.36	0.98
6438.00	91.10	176.56	2946.01	95.00	3691.01	3691.04 S 18.53 W	3691.09@ 180.29	2.21
6533.00	91.98	177.53	2943.46	95.00	3785.86	3785.88 S 13.63 W	3785.90@ 180.21	1.38
6627.00	91.45	177.71	2940.64	94.00	3879.74	3879.75 S 9.73 W	3879.77@ 180.14	0.60
6722.00	90.75	177.88	2938.82	95.00	3974.65	3974.67 S 6.07 W	3974.67@ 180.09	0.76
6816.00	89.69	177.44	2938.46	94.00	4068.58	4068.59 S 2.24 W	4068.59@ 180.03	1.22
6910.00	89.43	178.41	2939.18	94.00	4162.52	4162.52 S 1.17 E	4162.52@ 179.98	1.07

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
WALDRIP JY #3H
EDDY COUNTY, NM
RIG:PATTERSON 101

Page 04/04

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS (dg/100ft)
						(ft)	(ft)	(ft)	(deg)	
7005.00	88.64	179.11	2940.78	95.00	4257.48	4257.48 S	3.22 E	4257.48@	179.96	1.11
7099.00	88.20	179.46	2943.37	94.00	4351.44	4351.44 S	4.40 E	4351.44@	179.94	0.60
7194.00	90.04	182.37	2944.83	95.00	4446.40	4446.40 S	2.88 E	4446.40@	179.96	3.62
7288.00	90.40	183.51	2944.47	94.00	4540.27	4540.27 S	1.94 W	4540.28@	180.02	1.27
7383.00	90.84	184.74	2943.44	95.00	4635.00	4635.02 S	8.78 W	4635.03@	180.11	1.37
7411.00	90.48	184.47	2943.12	28.00	4662.91	4662.93 S	11.02 W	4662.94@	180.14	1.61
STRAIGHT LINE PROJECTION TO BIT @ 7457' MD.										
7457.00	90.48	184.47	2942.73	46.00	4708.76	4708.79 S	14.61 W	4708.81@	180.18	0.00

** 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:	YATES PETROLEUM CORPORATION		
LEASE / WELL No.:	WALDRIP JY	#3H	
WELL LOCATION:	EDDY COUNTY, NM		
COUNTY / STATE / COUNTRY:	EDDY	NM	USA
RIG:	PATTERSON 101		
API WELL No:	30-015-39301		
JOB No:	700003516 WT-WT		
P.O. / AFE No.	111710		
DIRECTIONAL COMPANY:	PATHFINDER		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.99	LWD Calculated:	7.99
Agreed Upon:		7.99	
X =	528415 604000	Feet	Y = 622421.000000
		Feet	
SITE LATITUDE:	32.711069 N	SITE LONGITUDE:	104.375346 W
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	179.92		
KELLY BUSHING ELEVATION:	18.5'		
ALTITUDE:	3380	Feet	WATER DEPTH:
		N/A	
		Feet	

TIE-IN SURVEY

MEASURED DEPTH:	2180'		
DRIFT ANGLE:	0.75		
DRIFT DIRECTION:	248.6		
TRUE VERTICAL DEPTH:	2179.95		
VERTICAL SECTION:	-2		
RECTANGULAR COORDINATE (N / S) :	1.99		
RECTANGULAR COORDINATE (E / W) :	-4.74		
CLOSURE DISTANCE / DIRECTION:	5.14	292.77	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	MS ENERGY SERVICES GYRO SURVEYS		
COPY OF TIE-IN SURVEY REPORT	☒ YES		☐ NO

WELL PLAN

KICKOFF DEPTH:	2472.54'	TOTAL DEPTH:	7514.21'
KICKOFF ANGLE:	0	MAX ANGLE:	90

PES Engineers: JUAN ALCOCER
HUEY SANDIFER

**Signature of both field engineers required if applicable

Directional Driller: ERIC CRUZAN

DATE: 23-Aug-2011

MS ENERGY SERVICES
ODESSA, TEXAS

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

* **YATES PETROLEUM** *

JOB NUMBER: SVCO 111056

WELL NAME: WALDRIP JY #3H

LOCATION: EDDY COUNTY, NEW MEXICO

SURVEY DATE: AUGUST 23, 2011

SURVEY ENGINEER: SSMITH

MAGNETIC DECLINATION: 07.99 GRID NORTH

GYRO REFERENCE BEARING: GRID NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 179.92
SURF. ELEVATION: 19

```
*****
***** DEPTH MEASURED IN FEET *****
*****
***** THIS DIRECTIONAL SURVEY REPORT IS *****
***** CORRECT TO THE BEST OF MY KNOWLEDGE *****
***** AND IS SUPPORTED BY ACTUAL FIELD DATA! *****
COMMENTS: PATTERSON 101
          RKB 19
          TBUSSELL@YATESPETROLEUM.COM**
          MIKEL@YATESPETROLEUM.COM
          *****
          COMPANY REPRESENTATIVE
          *****
*****
```




PathFinder Energy Services, Inc. Magnetic & Grid Calculations

Yates Petroleum Corporation
Waldrip "JY" #3H
Eddy County, NM
Rig:Patterson 101

Mon Aug 22 15:46:57 2011

Coordinates

Latitude: 32.711069 N (32 deg. 42 min. 39.8498 sec.)
Longitude: 104.375346 W (-104 deg. 22 min. 31.2454 sec.)
Elevation: 3398.50 feet.
Calculation Date: Aug/22/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4927 degrees
Total Magnetic Field: 0.48800 gauss
Magnetic Declination: 7.967933 degrees
Horizontal Intensity: 0.240359 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.967933 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 528415.6040 feet
Y: 622421.0000 feet
True to Grid: (convergence) 0.022704 degrees
Magnetic to Grid: 7.990637 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.990637 Degr.