

OXY Permian

15. 42931

Eddy County, NM (NAD 27 NME)

Devon 6 Fee 2H

D6F 2H - Job #320215-MPH-0143

OH

Survey: SDI MWD

Regulatory Report (Grid North)

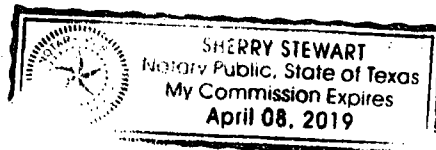
This survey is correct to the best of my knowledge and is supported by actual field data.

Richard

Notarized this date 21st of April, 2015.

Sherry Stewart

Notary Signature
County of Midland
State of Texas





Job Number: SVMO-150160
 Company: OXY USA, Inc.
 Lease/Well: Devon 6 Fee 2H
 Location: Eddy County, NM
 Rig Name: H&P #615
 RKB: 25'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 7.45°
 Grid: East To Grid North
 File name: S:\2015SU~1\OXY\MO\DEVON\6FEE~1\2H.SVY
 Date/Time: 20-Feb-15 / 10:49
 Curve Name: Surface - 526' M.D. (Rate Gyro) (API 30-015-42931)

NM OIL CONSERVATION
 ARTESIA DISTRICT
 MAY 08 2015
 RECEIVED

MS SURVEY

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane .00
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
 Surface MD to 526' MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.
Shawn Cooper 2/20/15
 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
88.00	.39	146.00	88.00	-.25	.17	-.25	.30	146.00	.44
181.00	.94	170.54	180.99	-1.26	.47	-1.26	1.35	159.60	.65
274.00	1.14	164.30	273.98	-2.91	.85	-2.91	3.03	163.78	.25
367.00	1.30	169.87	366.96	-4.84	1.28	-4.84	5.00	165.16	.21
460.00	1.27	163.21	459.93	-6.86	1.76	-6.86	7.08	165.57	.16
Last Survey Depth Recorded									
526.00	1.38	168.82	525.92	-8.34	2.13	-8.34	8.61	165.67	.26

Regulatory Report (Grid North)

Company:	OXY Permian	Local Co-ordinate Reference:	Well D6F 2H - Job #320215-MPH-0143
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3066.8usft
Site:	Devon 6 Fee 2H	MD Reference:	KB @ 3066.8usft
Well:	D6F 2H - Job #320215-MPH-0143	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	MID_Regulatory

Project	Eddy County, NM (NAD 27 NME), New Mexico.		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Devon 6 Fee 2H		
Site Position:		Northing:	422,341.20 usft
From:	Map	Easting:	566,397.60 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	32° 9' 39.423 N
		Longitude:	104° 7' 7.566 W
		Grid Convergence:	0.11 °

Well	D6F 2H - Job #320215-MPH-0143		
Well Position	+N/-S	0.0 usft	Northing: 422,341.20 usft
	+E/-W	0.0 usft	Easting: 566,397.60 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 9' 39.423 N
		Longitude:	104° 7' 7.566 W
		Ground Level:	3,041.8 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	HDGM	2/4/2015	7.57
			Dip Angle
			(°)
			60.00
			Field Strength
			(nT)
			48,301

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			270.08

Survey Program	Date	3/9/2015		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
88.0	526.0	Gyro (OH)	Generic Gyro	Generic Gyro
975.0	12,640.0	SDI MWD (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1

Survey								
MD	Inc	Azi	TVD	N/S	E/W	Closure Azimuth	Closure Distance	
(usft)	(°)	(grid_north_azim)	(usft)	(usft)	(usft)	(°)	(usft)	
526.0	1.38	168.82	525.9	-8.3	2.1	165.67	8.6	
974.0	1.85	65.45	973.8	-10.6	9.8	137.45	14.4	
1,440.0	0.09	0.06	1,439.7	-7.1	16.6	113.27	18.1	
1,533.0	0.09	313.22	1,532.7	-7.0	16.5	112.97	18.0	
1,625.0	0.09	124.87	1,624.7	-7.0	16.6	112.94	18.0	
1,718.0	0.70	77.14	1,717.7	-6.9	17.2	111.96	18.5	
1,810.0	2.29	87.78	1,809.7	-6.7	19.5	108.98	20.7	
1,903.0	1.58	95.78	1,902.6	-6.8	22.7	106.65	23.7	
1,996.0	1.67	86.20	1,995.6	-6.8	25.3	105.08	26.2	
2,088.0	2.20	95.60	2,087.5	-6.9	28.4	103.66	29.2	
2,181.0	3.17	94.55	2,180.4	-7.3	32.7	102.54	33.5	

Regulatory Report (Grid North)

Company:	OXY Permian	Local Co-ordinate Reference:	Well D6F 2H - Job #320215-MPH-0143
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3066.8usft
Site:	Devon 6 Fee 2H	MD Reference:	KB @ 3066.8usft
Well:	D6F 2H - Job #320215-MPH-0143	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	MID_Regulatory

Survey								
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
2,273.0	3.96	89.45	2,272.3	-7.5	38.5	100.97	39.2	
2,366.0	0.97	89.36	2,365.2	-7.4	42.5	99.91	43.1	
2,459.0	0.44	100.26	2,458.2	-7.5	43.6	99.72	44.2	
2,560.0	0.44	38.91	2,559.2	-7.2	44.2	99.29	44.8	
2,653.0	0.62	46.12	2,652.2	-6.6	44.8	98.39	45.3	
2,747.0	0.53	25.29	2,746.1	-5.9	45.4	97.37	45.7	
2,840.0	0.44	38.21	2,839.1	-5.2	45.8	96.48	46.1	
2,933.0	0.53	43.31	2,932.1	-4.6	46.3	95.68	46.5	
3,027.0	0.53	37.42	3,026.1	-3.9	46.8	94.81	47.0	
3,120.0	0.35	100.35	3,119.1	-3.6	47.4	94.40	47.5	
3,213.0	0.35	148.69	3,212.1	-3.9	47.8	94.71	48.0	
3,306.0	0.09	76.88	3,305.1	-4.2	48.0	94.96	48.2	
3,398.0	0.26	234.64	3,397.1	-4.3	47.9	95.10	48.1	
3,491.0	0.35	267.95	3,490.1	-4.4	47.5	95.30	47.7	
3,583.0	0.18	306.10	3,582.1	-4.3	47.1	95.26	47.3	
3,676.0	0.35	337.74	3,675.1	-4.0	46.9	94.86	47.0	
3,769.0	0.62	320.60	3,768.1	-3.3	46.4	94.10	46.5	
3,862.0	0.62	340.99	3,861.1	-2.5	45.9	93.07	46.0	
3,955.0	0.35	339.06	3,954.1	-1.7	45.7	92.16	45.7	
4,047.0	0.53	304.78	4,046.1	-1.2	45.2	91.54	45.2	
4,140.0	0.44	324.29	4,139.1	-0.7	44.7	90.88	44.7	
4,233.0	0.79	323.06	4,232.1	0.1	44.1	89.85	44.1	
4,326.0	0.97	325.43	4,325.1	1.3	43.2	88.31	43.3	
4,420.0	0.70	324.03	4,419.1	2.4	42.4	86.77	42.5	
4,513.0	0.44	295.90	4,512.1	3.0	41.8	85.87	41.9	
4,605.0	0.35	228.49	4,604.1	3.0	41.3	85.87	41.4	
4,698.0	0.62	202.30	4,697.1	2.3	40.9	86.74	40.9	
4,791.0	0.70	213.64	4,790.1	1.4	40.4	88.03	40.4	
4,884.0	0.53	208.36	4,883.1	0.5	39.8	89.22	39.8	
4,976.0	0.79	237.72	4,975.1	-0.2	39.1	90.26	39.1	
5,069.0	0.70	257.41	5,068.1	-0.6	38.0	90.97	38.0	
5,161.0	0.70	233.06	5,160.0	-1.1	37.0	91.70	37.0	
5,254.0	0.53	231.48	5,253.0	-1.7	36.2	92.70	36.3	
5,347.0	0.09	168.90	5,346.0	-2.0	35.9	93.27	35.9	
5,439.0	0.88	23.00	5,438.0	-1.5	36.2	92.33	36.2	
5,470.0	1.58	22.65	5,469.0	-0.9	36.4	91.35	36.4	
5,501.0	2.37	16.24	5,500.0	0.2	36.8	89.76	36.8	
5,532.0	3.25	26.34	5,531.0	1.6	37.4	87.61	37.4	
5,563.0	4.66	41.81	5,561.9	3.3	38.6	85.14	38.7	
5,594.0	5.80	39.00	5,592.8	5.4	40.4	82.33	40.8	
5,624.0	7.03	36.54	5,622.6	8.1	42.5	79.21	43.2	
5,655.0	8.62	35.66	5,653.3	11.5	44.9	75.64	46.4	
5,718.0	8.35	59.13	5,715.6	17.7	51.6	71.08	54.6	
5,811.0	7.12	67.56	5,807.8	23.4	62.7	69.58	66.9	

Regulatory Report (Grid North)

Company:	OXY Permian	Local Co-ordinate Reference:	Well D6F 2H - Job #320215-MPH-0143
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3066.8usft
Site:	Devon 6 Fee 2H	MD Reference:	KB @ 3066.8usft
Well:	D6F 2H - Job #320215-MPH-0143	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	MID_Regulatory

Survey								
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
5,904.0	5.80	72.13	5,900.2	27.0	72.5	69.59	77.4	
5,997.0	4.66	71.96	5,992.8	29.6	80.6	69.83	85.9	
6,089.0	3.87	68.09	6,084.5	31.9	87.0	69.86	92.7	
6,182.0	2.64	72.84	6,177.4	33.7	92.0	69.87	98.0	
6,275.0	1.85	89.98	6,270.3	34.4	95.5	70.22	101.5	
6,368.0	0.88	113.79	6,363.3	34.1	97.7	70.77	103.5	
6,461.0	0.35	17.03	6,456.3	34.1	98.4	70.92	104.2	
6,554.0	1.14	17.29	6,549.3	35.2	98.8	70.38	104.9	
6,646.0	1.58	354.00	6,641.2	37.3	98.9	69.32	105.8	
6,739.0	1.32	44.18	6,734.2	39.4	99.5	68.41	107.1	
6,832.0	0.97	80.75	6,827.2	40.3	101.1	68.27	108.8	
6,924.0	0.18	249.67	6,919.2	40.4	101.7	68.36	109.4	
7,017.0	2.55	268.57	7,012.2	40.3	99.5	67.97	107.3	
7,111.0	3.34	271.73	7,106.0	40.3	94.7	66.95	102.9	
7,203.0	2.73	270.50	7,197.9	40.4	89.8	65.79	98.5	
7,296.0	1.85	250.29	7,290.8	39.9	86.2	65.16	95.0	
7,354.0	1.06	182.00	7,348.8	39.0	85.3	65.40	93.8	
7,388.0	1.58	165.91	7,382.8	38.3	85.4	65.85	93.6	
7,480.0	9.67	262.94	7,474.4	36.1	78.0	65.17	85.9	
7,573.0	20.40	274.72	7,564.1	36.5	54.0	55.98	65.2	
7,666.0	28.23	273.58	7,648.8	39.2	15.9	22.03	42.3	
7,730.7	33.66	270.69	7,704.3	40.4	-17.4	336.70	43.9	
Actual HL Entry Point								
7,758.0	35.96	269.71	7,726.7	40.4	-33.0	320.80	52.1	
7,851.0	45.02	268.83	7,797.3	39.6	-93.3	293.00	101.3	
7,943.0	51.44	269.10	7,858.6	38.4	-161.8	283.33	166.3	
8,036.0	57.51	270.94	7,912.6	38.4	-237.5	279.19	240.6	
8,129.0	64.72	273.67	7,957.5	41.8	-318.8	277.47	321.5	
8,191.0	69.52	273.92	7,981.6	45.6	-375.8	276.91	378.5	
8,222.0	74.83	272.79	7,991.1	47.3	-405.2	276.65	408.0	
8,253.0	78.84	271.80	7,998.1	48.5	-435.4	276.35	438.1	
8,284.0	80.34	270.74	8,003.7	49.2	-465.8	276.02	468.4	
8,315.0	81.87	269.98	8,008.5	49.4	-496.5	275.68	498.9	
8,346.0	82.77	269.25	8,012.7	49.1	-527.2	275.33	529.5	
8,377.0	86.17	268.83	8,015.6	48.6	-558.0	274.98	560.2	
8,408.0	88.11	268.22	8,017.2	47.8	-589.0	274.64	590.9	
8,502.0	92.33	268.31	8,016.8	45.0	-682.9	273.77	684.4	
8,595.0	93.21	267.60	8,012.3	41.7	-775.8	273.07	776.9	
8,688.0	91.89	267.87	8,008.2	38.0	-868.6	272.50	869.4	
8,780.0	92.51	267.95	8,004.7	34.6	-960.5	272.07	961.1	
8,873.0	93.91	268.48	7,999.5	31.8	-1,053.3	271.73	1,053.7	
8,966.0	92.86	267.87	7,994.0	28.8	-1,146.1	271.44	1,146.4	
9,058.0	93.91	267.51	7,988.5	25.1	-1,237.8	271.16	1,238.1	
9,151.0	92.24	268.92	7,983.6	22.2	-1,330.6	270.96	1,330.8	
9,243.0	91.63	270.15	7,980.4	21.5	-1,422.6	270.86	1,422.7	

Regulatory Report (Grid North)

Company:	OXY Permian	Local Co-ordinate Reference:	Well D6F 2H - Job #320215-MPH-0143
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3066.8usft
Site:	Devon 6 Fee 2H	MD Reference:	KB @ 3066.8usft
Well:	D6F 2H - Job #320215-MPH-0143	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	MID_Regulatory

Survey								
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
9,336.0	92.24	270.15	7,977.3	21.7	-1,515.5	270.82	1,515.7	
9,428.0	91.19	270.24	7,974.6	22.0	-1,607.5	270.78	1,607.6	
9,521.0	92.77	270.59	7,971.3	22.7	-1,700.4	270.76	1,700.6	
9,614.0	91.28	270.06	7,968.1	23.2	-1,793.4	270.74	1,793.5	
9,706.0	89.96	269.01	7,967.1	22.5	-1,885.3	270.68	1,885.5	
9,799.0	90.75	268.66	7,966.5	20.6	-1,978.3	270.60	1,978.4	
9,892.0	90.92	267.16	7,965.1	17.2	-2,071.2	270.48	2,071.3	
9,985.0	91.19	265.14	7,963.4	10.9	-2,164.0	270.29	2,164.0	
10,077.0	91.45	268.13	7,961.3	5.5	-2,255.8	270.14	2,255.8	
10,170.0	91.80	267.16	7,958.7	1.7	-2,348.7	270.04	2,348.7	
10,264.0	91.45	268.13	7,956.0	-2.1	-2,442.6	269.95	2,442.6	
10,357.0	89.43	269.62	7,955.3	-4.0	-2,535.6	269.91	2,535.6	
10,450.0	89.60	271.82	7,956.1	-2.8	-2,628.5	269.94	2,628.5	
10,543.0	93.12	272.35	7,953.9	0.6	-2,721.4	270.01	2,721.4	
10,635.0	91.89	269.45	7,949.8	2.0	-2,813.3	270.04	2,813.3	
10,728.0	90.48	270.68	7,947.9	2.1	-2,906.3	270.04	2,906.3	
10,820.0	92.07	270.85	7,945.9	3.4	-2,998.3	270.06	2,998.3	
10,914.0	92.15	270.59	7,942.4	4.5	-3,092.2	270.08	3,092.2	
11,001.0	90.75	271.03	7,940.2	5.8	-3,179.2	270.10	3,179.2	
11,094.0	91.28	270.85	7,938.6	7.3	-3,272.1	270.13	3,272.1	
11,186.0	88.81	272.61	7,938.5	10.1	-3,364.1	270.17	3,364.1	
11,279.0	89.25	272.79	7,940.1	14.5	-3,457.0	270.24	3,457.0	
11,371.0	86.88	273.23	7,943.2	19.3	-3,548.8	270.31	3,548.8	
11,464.0	86.97	273.05	7,948.2	24.4	-3,641.5	270.38	3,641.6	
11,556.0	87.41	272.96	7,952.7	29.2	-3,733.3	270.45	3,733.4	
11,650.0	87.76	272.88	7,956.6	34.0	-3,827.1	270.51	3,827.2	
11,743.0	87.05	271.56	7,960.8	37.6	-3,919.9	270.55	3,920.1	
11,835.0	86.79	269.89	7,965.8	38.7	-4,011.8	270.55	4,011.9	
11,929.0	88.81	268.92	7,969.4	37.8	-4,105.7	270.53	4,105.8	
12,022.0	90.31	268.22	7,970.1	35.4	-4,198.6	270.48	4,198.8	
12,116.0	91.80	267.95	7,968.4	32.3	-4,292.6	270.43	4,292.7	
12,208.0	92.07	267.87	7,965.3	28.9	-4,384.5	270.38	4,384.5	
12,301.0	93.03	268.92	7,961.1	26.3	-4,477.3	270.34	4,477.4	
12,394.0	94.26	269.18	7,955.2	24.8	-4,570.1	270.31	4,570.2	
12,487.0	91.89	268.75	7,950.2	23.1	-4,663.0	270.28	4,663.0	
12,511.5	92.19	268.82	7,949.4	22.6	-4,687.5	270.28	4,687.5	
Actual HL Exit Point								
12,581.0	93.03	269.01	7,946.2	21.3	-4,756.9	270.26	4,756.9	
MWD Survey								
12,640.0	93.03	269.01	7,943.1	20.3	-4,815.8	270.24	4,815.8	
Projection to Bit/TD								

Regulatory Report (Grid North)

Company:	OXY Permian	Local Co-ordinate Reference:	Well D6F 2H - Job #320215-MPH-0143
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3066.8usft
Site:	Devon 6 Fee 2H	MD Reference:	KB @ 3066.8usft
Well:	D6F 2H - Job #320215-MPH-0143	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	MID_Regulatory

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,730.7	7,704.3	40.4	-17.4	Actual HL Entry Point
12,511.5	7,949.4	22.6	-4,687.5	Actual HL Exit Point
12,581.0	7,946.2	21.3	-4,756.9	MWD Survey
12,640.0	7,943.1	20.3	-4,815.8	Projection to Bit/TD

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------



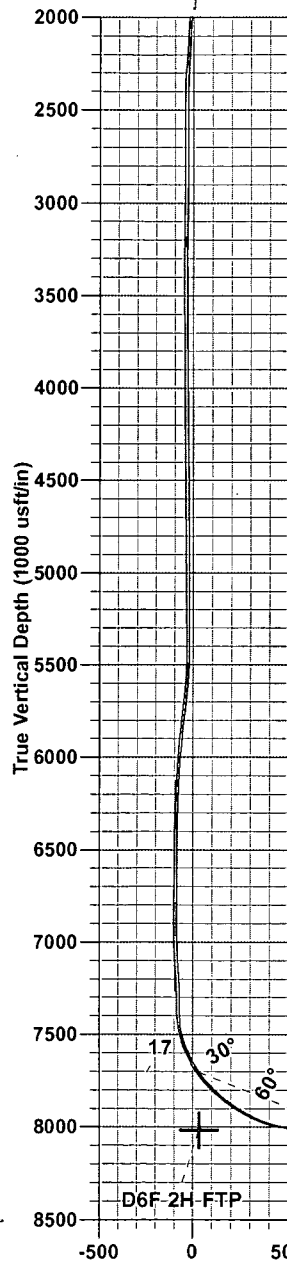
Devon 6 Fee 2H
Eddy County, NM (NAD 27 NME)
Northing: 422341.20
Easting: 566397.60
Plan #6



Azimuths to Grid North
True North: -0.11°
Magnetic North: 7.45°
Magnetic Field
Strength: 48300.9snT
Dip Angle: 60.00°
Date: 2/4/2015
Model: HDGM

To convert Magnetic North to Grid, Add 7.45°
To convert True North to Grid, Subtract 0.11°

KB @ 3066.80usft
Gr @ 3041.80



WELL DETAILS D6F 2H					
Ground Level: 3041.80					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	422341.20	566397.60	32° 9' 39.423 N	104° 7' 7.566 W

SECTION DETAILS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace V Sect
10728.00	90.48	270.68	7947.91	2.14	-2906.31	0.00	0.00 2906.31
10772.54	89.78	270.13	7947.81	2.45	-2950.85	2.00	-141.48 2950.85
12671.91	89.78	270.13	7955.00	6.60	-4850.20	0.00	0.00 4850.20

DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
D6F 2H LTP	7954.50	6.40	-4700.20	422347.60	561697.40
D6F 2H BHL	7955.00	6.60	-4850.20	422347.80	561547.40
D6F 2H FTP	8020.00	0.10	-30.00	422341.30	566367.60

PROJECT DETAILS:
Eddy County, NM (NAD 27 NME)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

SITE DETAILS:
Devon 6 Fee 2H
Site Centre Northing: 422341.20
Easting: 566397.60
Positional Uncertainty: 0.00
Convergence: 0.11
Local North: Grid

