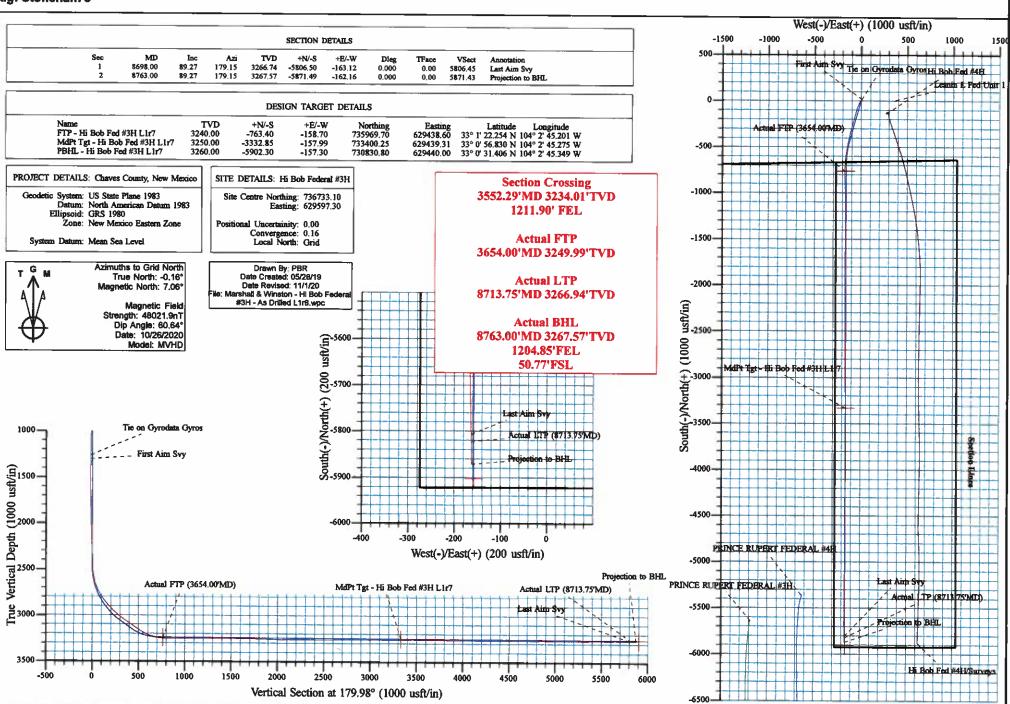
Marshall & Winston, Inc.

Hi Bob Federal #3H Chaves County, New Mexico

Rec'd 01/15/2021 NMOCD

Job No: WT-20-064 Rig: Stoneham 5



Company: Project:

Marshall & Winston, Inc.

Chaves County, New Mexico

Site: Wellt Hi Bob Federal #3H Hi Bob Fed #3H

Wellbore: Design:

Drilling

Surveys

Local Co-ordinate Reference:

TVD Reference: **MD Reference:**

North Reference:

Survey Calculation Method:

Database:

Site Hi Bob Federal #3H

Well @ 3831.30usft (Stoneham 5) Well @ 3831.30usft (Stoneham 5)

Minimum Curvature EDMRESTORED

Project

Chaves County, New Mexico

Map System: Geo Datum:

US State Plane 1983 North American Datum 1983

Map Zone:

New Mexico Eastern Zone

System Datum:

Mean Sea Level

Site

Hi Bob Federal #3H

Site Position: From:

Well Position

Map

Northing: Easting:

736,733.10 usft 629,597.30 usft

Latitude:

Longitude:

33° 1' 29.803 N

Position Uncertainty:

0.00 usft

Slot Radius:

13-3/16 "

Grid Convergence:

104° 2' 43,312 W

0.16 °

Well

Hi Bob Fed #3H

+N/-S +E/-W 0.00 usft

Northing: Easting:

Sample Date

736,733.10 usfl 629,597.30 usfl Latitude: Longitude:

33° 1' 29.803 N 104° 2' 43,312 W

Position Uncertainty

0.00 usft 0.00 usft

Wellhead Elevation:

usfi

Ground Level:

60.64

3,813.30 usfi

Wellbore

Drilling

Surveys

Magnetics	Model Name

MVHD 10/26/2020 Declination (°)

Dip Angle (°)

Field Strength (nT)

48,021.889

Design

Audit Notes:

Version:

1.0

Phase:

Tie On Depth:

0.00

Vertical Section:

Depth From (TVD)

ACTUAL

+E/-W

7.21

(usft)

0.00

+N/-S (usft) 0.00

(usft) 0.00 Direction (°)

179.98

Survey Program From (usft)

Date 11/2/2020

To (usft)

Survey (Wellbore)

Tool Name

Description

1,306.00

67.43

1,266.00 Gyrodata Gyro Surveys (Drilling) 8,763.00 Aim MWD Svys (Drilling)

GYRO-NS-CT MWD+HDGM

OWSG XYZ Accel with XY Static and Continuous OWSG MWD + HDGM

Survey

Measured Depth (usft)	inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (*/100ft)	Turn Rate (°/100ft)
1,266.00	1.35	42.71	1,265.81	15.81	6.97	-15.80	0.000	0.000	0.000
Tie on Gyr	odata Gyros								
1,306.00	1.19	40.99	1,305.80	16.47	7.56	-16.46	0.411	-0.400	-4.300
First Alm S	Svy								
1,369.00	1.19	47.14	1,368.79	17.40	8.47	-17.40	0.203	0.000	9.762
1,433.00	0.62	49.34	1,432.78	18.08	9.22	-18.08	0.892	-0.891	3.437
1,496.00	0.13	80.45	1,495.78	18.32	9.55	-18.31	0.814	-0.778	49.381
1,560.00	0.18	124.83	1,559.78	18.27	9.70	-18.27	0.197	0.078	69.344
1,623.00	0.70	212.81	1,622.77	17.89	9.57	-17.89	1.137	0.825	139.651

Company: Project: Marshall & Winston, Inc. Chaves County, New Mexico

Site: Welt

Hi Bob Federal #3H Hi Bob Fed #3H

Wellbore: Design: Drilling

Surveys

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

Survey Calculation Method:

Database:

Site Hi Bob Federal #3H

Well @ 3831.30usft (Stoneham 5) Well @ 3831.30usft (Stoneham 5)

Grid

Minimum Curvature EDMRESTORED

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,686.00	1.58	222.04	1,685.76	16.92	8.78	-16.92	1.422	1.397	14.651
1,750.00	1.71	226.87	1,749.74	15.61	7.49	-15.61	0.297	0.203	7.547
1,813.00	1.67	230.83	1,812.71	14.39	6.10	-14.39	0.196	-0.063	6.286
1,876.00	1.63	228.54	1,875.68	13.22	4.71	-13.22	0.122	-0.063	-3.635
1,939.00	1.71	236.37	1,938.65	12.11	3.26	-12.10	0.383	0.127	12.429
2,002.00	1.67	237.86	2,001.63	11.10	1.70	-11.10	0.094	-0.063	2.365
2,065.00	1.80	221.69	2,064.60	9.87	0.26	-9.87	0.801	0.206	-25.667
2,129.00	2.46	208.94	2,128.55	7.92	-1.07	-7.92	1.263	1.031	-19.922
2,192.00	2.37	208.59	2,191.50	5.59	-2.35	-5.59	0.145	-0.143	-0.556
2,255.00	2.42	208.33	2,254.44	3.27	-3.60	-3.28	0.081	0.079	-0.413
2,319.00	2.33	208.86	2,318.39	0.95	-4.87	-0.95	0.145	-0.141	0.828
2,382.00	2.20	209.38	2,381.34	-1.23	-6.08	1.23	0.209	-0.206	0.825
2,445.00	2.20	209.91	2,444.29	-3.33	-7.28	3.33	0.032	0.000	0.841
2,477.00	3.60	206.31	2,476.25	-4.76	-8.03	4.76	4.410	4.375	-11.250
2,509.00	5.54	206.13	2,508.15	-7.05	-9.16	7.05	6.063	6.062	-0.562
2,540.00	7.56	209.21	2,538.94	-10.18	-10.81	10.17	6.612	6.516	9.935
2,572.00	9.89	210.79	2,570.57	-14.37	-13.24	14.37	7.319	7.281	4.937
2,604.00	13.14	210.35	2,601.92	-19.88	-16.49	19.87	10.160	10.156	-1.375
2,635.00	16.48	208.07	2,631.89	-26.80	-20.34	26.79	10.935	10.774	-7.355
2,667.00	20.22	206.31	2,662.26	-35.76	-24.93	35.75	11.814	11.687	-5.500
2,699.00	23.69	202.97	2,691.93	-46.64	-29.89	46.63	11.520	10.844	-10.437
2,731.00	27.21	201.30	2,720.82	-59.38	-35.06	59.37	11.225	11.000	-5.219
2,762.00	29.58	199.80	2,748.09	-73.19	-40.23	73.17	7.983	7.645	-4.839
2,794.00	31.97	197.43	2,775.59	-88.70	-45.44	88.69	8.374	7.469	-7.406
2,825.00	34.24	195.76	2,801.55	-104.93	-50.27	104.91	7.891	7.323	-5.387
2,857.00	36.66	195.59	2,827.62	-122.80	-55.28	122.78	7.569	7.562	-0.531
2,889.00	38.86	195.76	2,852.92	-141.66	-60.58	141.64	6.883	6.875	0.531
2,920.00	41.14	195.76	2,876.66	-160.84	-65.99	160.82	7.355	7.355	0.000
2,952.00	42.81	196.02	2,900.45	-181.42	-71.85	181.40	5.247	5.219	0.812
2,984.00	44.00	196.20	2,923.70	-202.55	-77.95	202.52	3.739	3.719	0.562
3,016.00	46.24	195.94	2,946.28	-224.33	-84.22	224.31	7.024	7.000	-0.812
3,047.00	48.48	195.06	2,967.27	-246.31	-90.32	246.28	7.521	7.226	-2.839
3,079.00	49.93	194.62	2,988.18	-269.73	-96.52	269.69	4.649	4.531	-1.375
3,110.00	52.09	194.00	3,007.69	-293.07	-102.47	293.04	7.139	6.968	-2.000
3,142.00	53.54	193.56	3,027.03	-317.83	-108.54	317.79	4.662	4.531	-1.375
3,173.00	54.73	193.48	3,045.19	-342.26	-114.42	342.22	3.844	3.839	-0.258
3,205.00	55.82	193.39	3,063.42	-367.84	-120.53	367.80	3.414	3.406	-0.281
3,236.00	57.23	193.21	3,080.51	-393.00	-126.47	392.96	4.574	4.548	-0.581
3,268.00	56.40	193,39	3,098.03	-419.06	-132.64	419.02	2.636	-2.594	0.562
3,299.00	55.65	193.04	3,115.35	-444.09	-138.51	444.04	2.594	-2.419	-1.129
3,331.00	54.77	191.89	3,133.61	-469.75	-144.19	469.70	4.034	-2.750	-3.594
3,363.00	55.34	190.84	3,151.94	-495.47	-149.35	495.41	3.226	1.781	-3.281
3,395.00	57.58	188.99	3,169.62	-521.74	-153.94	521.68	8.498	7.000	-5.781

Company: Project:

Marshall & Winston, Inc. Chaves County, New Mexico

Site: Welt Hi Bob Federal #3H Hi Bob Fed #3H

Drilling Wellbore: Design: Surveys Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method: Database:

Site Hi Bob Federal #3H

Well @ 3831.30usft (Stoneham 5) Well @ 3831.30usft (Stoneham 5)

Grid

Minimum Curvature **EDMRESTORED**

gn. Guiveys Database:				EDMRESTORED					
vey					No. 30 a. s.	ALC: SAY			
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,426.00	60.57	187.68	3,185.55	-548.05	-157.79	547.99	10.304	9.645	-4.226
3,458.00	63.52	187.24	3,200.55	-576.07	-161.46	576.01	9.298	9.219	-1.375
3,490.00	67.60	186.62	3,213.79	-604.98	-164.97	604.93	12.871	12.750	-1.937
3,521.00	70.86	185.30	3,224.78	-633.81	-167.98	633.75	11.244	10.516	-4.258
3,553.00	74.90	184.34	3,234.20	-664.28	-170.54	664.22	12.946	12.625	-3.000
3,585.00	78.77	183.37	3,241.48	-695.36	-172.63	695.30	12.449	12.094	-3.031
3,617.00	82.68	181.96	3,246.64	-726.90	-174.10	726.84	12.969	12.219	-4.406
3,648.00	86.29	180.20	3,249.62	-757.74	-174.68	757.68	12.943	11.645	-5.677
3,653.04	86.64	179.95	3,249.93	-762.78	-174.69	762.72	8.428	6.850	-4.920
	ob Fed #3H L1		THE WORLD	ing gettings	The State of the S	NEW CONTRACTOR	the same services	SHEET HOUSE	3 3 3 3 3 3
3,654.00	86.70	179.90	3,249.99	-763.73	-174.69	763.67	8.428	6.851	-4.918
	P (3654.00'MD)		建设制度	Maria State State	6,49,545	STEWNS OF	WAR THE		435 TEVER
3,682.00	88.62	178.53	3,251.13	-791.70	-174.30	791.64	8.428	6.854	-4.910
3,712.00	89.36	177.83	3,251.66	-821.68	-173.35	821.62	3.395	2.467	-2.333
3,775.00	90.95	177,74	3,251.49	-884.63	-170.92	884.57	2.528	2.524	-0.143
3,839.00	91.03	177,39	3,250.38	-948.57	-168.20	948.51	0.561	0.125	-0.547
3,902.00	89.41	177.92	3,250.14	-1,011.51	-165.62	1,011.45	2.706	-2.571	0.841
3,966.00	89.36	179.59	3,250.83	-1,075.49	-164.23	1,075.43	2.610	-0.078	2.609
4,029.00	90.46	180.73	3,250.93	-1,073.49	-164.41	1,138.43	2.515	1.746	1.810
4,092.00	90.07	180.64	3,250.64	-1,201.48	-165.16	1,201.43	0.635	-0.619	-0.143
4,156.00	90.95	180.56	3,250.07	-1,265.48	-165.83	1,265.42	1.381	1.375	-0.125
4,219.00	90.81	180.20	3,249.10	-1,328.47	-166.25	1,328.41	0.613	-0.222	-0.125
4,283.00	89.54	180.20	3,248.90	-1,392.47	-166.47	1,392.41	1.984	-1.984	0.000
4,346.00	89.76	180.20	3,249.29	-1,455.46	-166.69	1,455.41	0.349	0.349	0.000
4,409.00	91.16	179.94	3,248.78	-1,518.46	-166.77	1,518.40	2.260	2.222	-0.413
4,472.00	90.33	179.77	3,247.96	-1,581.45	-166.61	1,516.40	1.345	-1.317	-0.413
4,536.00	88.84	180.03	3,248.43	-1,645.45	-166.50	1,645.39	2.363	-2.328	0.406
4,599.00	87.08	180.47	3,250.67	-1,708.41	-166.77	1,708.35	2.880	-2.794	0.698
4,663.00	87.38	180.56	3,253.76	-1,772.33	-167.34	1,772.27	0.489	0.469	0.141
4,726.00	87.60	180.82	3,256.52	-1,835.26	-168.10	1,835.21	0.540	0.349	0.413
4,789.00	87.38	179.68	3,259.28	-1,898.20	-168.38	1,898.14	1.841	-0.349	-1.810
4,853.00	88.79	179.50	3,261.42	-1,962.16	-167.92	1,962.10	2,221	2.203	-0.281
4,916.00	90.29	179.41	3,261.92	-2,025.16	-167.32	2,025.10	2.385	2.381	-0.143
4,979.00	91.38	179.50	3,261.01	-2,088.15	-166.72	2,088.09	1.736	1.730	0.143
5,043.00	90.90	179.50	3,259.73	-2,152.13	-166.16	2,152.07	0.750	-0.750	0.000
5,106.00	90.24	179.77	3,259.11	-2,215.13	-165.76	2,215.07	1.132	-1.048	0.429
5,169.00	88.75	180.03	3,259.66	-2,278.12	-165.65	2,278.06	2.401	-2.365	0.413
5,232.00	89.41	180.29	3,260.67	-2,341.11	-165.83	2,341.05	1.126	1.048	0.413
5,296.00	88.75	180.20	3,261,70	-2,405.10	-166.10	2,405.05	1.041	-1.031	-0.141
5,359.00	89.41	180.20	3,262,71	-2,468.09	-166.32	2,468.04	1.048	1.048	0.000
5,422.00	90.73	179.94	3,262.64	-2,531.09	-166.40	2,531.04	2.135	2.095	-0.413
5,485.00	90.33	179.85	3,262.05	-2,594.09	-166.28	2,594.03	0.651	-0.635	-0.143
5,548.00	90.33	179.68	3,261.69	-2,657.09	-166.02	2,657.03	0.270	0.000	-0.270
5,612.00	90.11	180.47	3,261.44	-2,721.09	-166.11	2,721.03	1.281	-0.344	1.234

Company: Project:

Marshall & Winston, Inc. Chaves County, New Mexico

Site: Hi Bob Federal #3H Welt Hi Bob Fed #3H

Wellbore: Drilling Design: Surveys Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Database:

Site Hi Bob Federal #3H

Well @ 3831.30usft (Stoneham 5) Well @ 3831.30usft (Stoneham 5)

Grid

Minimum Curvature **EDMRESTORED**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (*/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,675.00	90.11	180.38	3,261.32	-2,784.09	-166.58	2,784.03	0.143	0.000	-0.143
5,704.00	90.99	180.12	3,261.04	-2,813.08	-166.70	2,813.03	3.164	3.034	-0.897
5,768.00	89.98	179.24	3,260.50	-2,877.08	-166.34	2,877.02	2.093	-1.578	-1.375
5,831.00	89.76	178.62	3,260.65	-2,940.07	-165.17	2,940.01	1.044	-0.349	-0.984
5,894.00	89.71	178.27	3,260.94	-3,003.04	-163.46	3,002.99	0.561	-0.079	-0.556
5,957.00	90.33	178.27	3,260.92	-3,066.01	-161.56	3,065.96	0.984	0.984	0.000
6,021.00	90.99	179.06	3,260.18	-3,129.99	-160.07	3,129.94	1.608	1.031	1.234
6,084.00	89.71	180.03	3,259.79	-3,192.99	-159.57	3,192.93	2.549	-2.032	1.540
6,147.00	89.80	179.94	3,260.06	-3,255.99	-159.55	3,255.93	0.202	0.143	-0.143
6,211.00	90.02	180.03	3,260.16	-3,319.99	-159.53	3,319.93	0.371	0.344	0.141
6,223.89	90.08	179.98	3,260.15	-3,332.88	-159.53	3,332.82	0.595	0.429	-0.413
_	Hi Bob Fed #	3H L1r7				CONTRACTO		NE POST NEW	
6,274.00	90.29	179.77	3,259.99	-3,382.99	-159.42	3,382.93	0.595	0.429	-0.413
6,337.00	90.24	179.50	3,259.70	-3,445.98	-159.02	3,445.93	0.436	-0.079	-0.429
6,401.00	90.37	179.50	3,259.36	-3,509.98	-158.46	3,509.92	0.203	0.203	0.000
6,464.00	90.55	179.50	3,258.85	-3,572.98	-157.91	3,572.92	0.286	0.286	0.000
6,527.00	90.86	179.33	3,258.08	-3,635.97	-157.27	3,635.91	0.561	0.492	-0.270
6,590.00	89.32	179.15	3,257.98	-3,698.96	-156.43	3,698.91	2.461	-2.444	-0.286
6,654.00	89.27	178.53	3,258.77	-3,762.94	-155.14	3,762.89	0.972	-0.078	-0.969
6,717.00	89.45	178.71	3,259.47	-3,825.92	-153.62	3,825.87	0.404	0.286	0.286
6,781.00	88.44	179.94	3,260.65	-3,889.90	-152.87	3,889.85	2.487	-1.578	1.922
6,844.00	88.88	180.03	3,262.12	-3,952.89	-152.85	3,952.83	0.713	0.698	0.143
6,907.00	89.49	180.29	3,263.02	-4,015.88	-153.03	4,015.82	1.053	0.968	0.413
6,970.00	89.80	180.47	3,263.41	-4,078.88	-153.44	4,078.82	0.569	0.492	0.286
7,034.00	88.62	180.73	3,264.29	-4,142.86	-154.11	4,142.81	1.888	-1.844	0.406
7,097.00	88.92	181.08	3,265.64	-4,205.84	-155.11	4,205.79	0.732	0.476	0.556
7,160.00	89.63	181.52	3,266.44	-4,268.82	-156.54	4,268.77	1.326	1.127	0.698
7,224.00	89.85	181.35	3,266.73	-4,332.80	-158,14	4,332.74	0.434	0.344	-0.266
7,287.00	90.29	181.61	3,266.66	-4,395.78	-159.77	4,395.72	0.811	0.698	0.413
7,350.00	90.68	181.70	3,266.12	-4,458.75	-161.59	4,458.69	0.635	0.619	0.143
7,414.00	91.03	181.61	3,265.17	-4,522.72	-163.44	4,522.66	0.565	0.547	-0.141
7,477.00	91.52	180.47	3,263.76	-4,585.69	-164.58	4,585.63	1.969	0.778	-1.810
7,540.00	90.95	180.20	3,262.41	-4,648.67	-164.95	4,648.61	1.001	-0.905	-0.429
7,604.00	89.32	178.97	3,262.26	-4,712.67	-164.48	4,712.61	3.191	-2.547	-1.922
7,667.00	89.14	178.80	3,263.10	-4,775.65	-163.26	4,775.59	0.393	-0.286	-0.270
7,731.00	89.27	179.06	3,263.99	-4,839.63	-162.06	4,839.58	0.454	0.203	0.406
7,794.00	89.32	179.24	3,264.77	-4,902.62	-161.13	4,902.56	0.297	0.079	0.286
7,857.00	89.49	179.85	3,265.42	-4,965.61	-160.63	4,965.56	1.005	0.270	0.968
7,921.00	89.71	180.38	3,265.87	-5,029.61	-160.76	5,029.56	0.897	0.344	0.828
7,984.00	89.76	180.73	3,266.16	-5,092.61	-161.37	5,092.55	0.561	0.079	0.556
8,047.00	89.93	181.00	3,266.33	-5,155.60	-162.32	5,155.54	0.506	0.270	0.429
8,111.00	89.93	181.00	3,266.41	-5,219.59	-163.43	5,219.53	0.000	0.000	0.000
8,174.00	90.15	181.35	3,266.36	-5,282.58	-164.73	5,282.52	0.656	0.349	0.556
8,238.00	90.37	181.00	3,266.07	-5,346.56	-166.04	5,346.51	0.646	0.344	-0.547

Company: Project:

Marshall & Winston, Inc.

Site:

Chaves County, New Mexico

Welt

Hi Bob Federal #3H Hi Bob Fed #3H

Wellbore: Design:

Drilling Surveys Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method: Database:

Site Hi Bob Federal #3H

Well @ 3831.30usft (Stoneham 5) Well @ 3831.30usft (Stoneham 5)

Grid

Minimum Curvature **EDMRESTORED**

Measured Depth (usft)	inclination (*)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Bulld Rate (°/100ft)	Turn Rate (°/100ft)
8,301.00	90.37	179.68	3,265.67	-5,409.56	-166.41	5,409.50	2.095	0.000	-2.095
8,364.00	90.37	180.03	3,265.26	-5,472.56	-166.25	5,472.50	0.556	0.000	0.556
8,428.00	90.55	180.38	3,264.75	-5,536.56	-166.48	5,536.50	0.615	0.281	0.547
8,491.00	90.24	179.94	3,264.31	-5,599.55	-166.66	5,599.50	0.854	-0.492	-0.698
8,554.00	89.19	178.89	3,264.62	-5,662.55	-166.02	5,662.49	2.357	-1.667	-1.667
8,617.00	89.14	178.71	3,265.54	-5,725.53	-164.70	5,725.47	0.297	-0.079	-0.286
8,681.00	89.14	178.97	3,266.50	-5,789.51	-163.40	5,789.45	0.406	0.000	0.406
8,698.00	89.27	179.15	3,266.74	-5,806.50	-163.12	5,806.45	1.306	0.765	1.059
Last Alm S	vy					STARES IN			
8,713.75	89.27	179.15	3,266.94	-5,822.25	-162.89	5,822.19	0.000	0.000	0.000
Actual LTP	(8713.75'MD)		ASSESSMENT OF	YEAR WARREN		THE REAL PROPERTY.			
8,763.00	89.27	179.15	3,267,57	-5,871,49	-162.16	5,871.43	0.000	0.000	0.000

Survey Annotations	SENT TO ESTADO				W. T. W.
Measured Depth (usft)	Vertical Depth (usft)	Local Coor +N/-S (usft)	rdinates +E/-W (usft)	Comment	
1,266.00	1,265,81	15.81	6.97	Tie on Gyrodata Gyros	
1,306.00	1.305.80	16.47	7.56	First Aim Sw	
3,654.00	3,249.99	-763.73	-174.69	Actual FTP (3654.00'MD)	
8,698.00	3,266.74	-5,806.50	-163.12	Last Aim Svv	
8,713.75	3,266.94	-5,822.25	-162.89	Actual LTP (8713.75'MD)	
8,763.00	3,267.57	-5,871.49	-162.16	Projection to BHL	

Checked By:	Approved By:	Date:	