

Survey Report

Company:	Marshall & Winston, Inc.	Local Co-ordinate Reference:	Site Hi Bob Federal #1H
Project:	Chaves County, New Mexico	TVD Reference:	Updated @ 3819.30usft (Stoneham 6)
Site:	Hi Bob Federal #1H	MD Reference:	Updated @ 3819.30usft (Stoneham 6)
Well:	#1H	North Reference:	Grid
Wellbore:	Drilling	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDMRESTORED

Project: Chaves County, New Mexico	
Map System:	US State Plane 1983
Geo Datum:	North American Datum 1983
Map Zone:	New Mexico Eastern Zone
System Datum:	Mean Sea Level

Site		Hi Bob Federal #1H			
Site Position:		Northing:	736,384.80 usft	Latitude:	33° 1' 26.380 N
From:	Map	Easting:	628,727.90 usft	Longitude:	104° 2' 53.535 W
Position Uncertainty:	2.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.16 °

Well	#1H					
Well Position	+N/-S	0.00 usft	Northing:	736,384.80 usft	Latitude:	33° 1' 26.380 N
	+E/-W	0.00 usft	Easting:	628,727.90 usft	Longitude:	104° 2' 53.535 W
Position Uncertainty		2.80 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,802.30 usft

Wellbore		Drilling			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	6/3/2019	7.37	60.68	48,169.27898933

Design: Surveys				
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 2.628.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	180.91

Survey Program		Date: 6/21/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	1,244.00	Phoenix Gyros (Pilot)	GYRO-NS-CT	OWSG XYZ Accel with XY Static and Continuous
1,328.00	2,628.00	Aim Pilot Svys (Pilot)	MWD+HDGM	OWSG MWD + HDGM
2,689.00	8,532.00	Aim MWD Svys (Drilling)	MWD+HDGM	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)
2,628.00	0.75	285.77	2,627.77	10.10	7.47	-10.22	0.000	0.000	0.000
Tie on Pilot									
2,689.00	0.92	220.97	2,688.76	9.84	6.76	-9.94	1.486	0.279	-106.229
First Aim Svy									
2,720.00	3.21	204.45	2,719.74	8.86	6.24	-8.96	7.557	7.387	-53.290
2,750.00	6.15	201.72	2,749.64	6.60	5.30	-6.68	9.825	9.800	-9.100
2,782.00	9.71	199.35	2,781.32	2.46	3.77	-2.52	11.169	11.125	-7.406
2,813.00	13.10	198.38	2,811.71	-3.34	1.79	3.31	10.953	10.935	-3.129

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Well:	#1H	North Reference:	Grid
Wellbore:	Drilling	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDMRSTORED

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)	
2,843.00	16.79	198.47	2,840.69	-10.68	-0.65	10.69	12.300	12.300	0.300	
2,874.00	20.18	198.82	2,870.08	-19.99	-3.80	20.05	10.941	10.935	1.129	
2,904.00	24.22	198.38	2,897.85	-30.73	-7.41	30.85	13.478	13.467	-1.467	
2,935.00	27.60	195.92	2,925.74	-43.68	-11.38	43.85	11.439	10.903	-7.935	
2,967.00	30.73	192.58	2,953.68	-58.79	-15.20	59.02	11.021	9.781	-10.437	
2,998.00	33.49	188.10	2,979.94	-74.99	-18.13	75.27	11.754	8.903	-14.452	
3,028.00	36.66	184.93	3,004.49	-92.12	-20.07	92.42	12.184	10.567	-10.567	
3,060.00	40.09	184.14	3,029.57	-111.92	-21.63	112.25	10.828	10.719	-2.469	
3,090.00	44.22	183.53	3,051.81	-132.00	-22.97	132.35	13.834	13.767	-2.033	
3,120.00	48.13	184.06	3,072.58	-153.59	-24.41	153.96	13.095	13.033	1.767	
3,151.00	51.60	184.06	3,092.55	-177.23	-26.09	177.62	11.194	11.194	0.000	
3,183.00	53.93	185.55	3,111.92	-202.61	-28.22	203.04	8.170	7.281	4.656	
3,214.00	57.32	184.76	3,129.42	-228.09	-30.52	228.55	11.136	10.935	-2.548	
3,244.00	60.66	184.76	3,144.87	-253.71	-32.65	254.20	11.133	11.133	0.000	
3,275.00	64.53	184.50	3,159.14	-281.14	-34.87	281.66	12.506	12.484	-0.839	
3,306.00	67.87	184.93	3,171.64	-309.40	-37.21	309.96	10.849	10.774	1.387	
3,329.00	70.52	184.87	3,179.81	-330.82	-39.04	331.40	11.534	11.531	-0.252	
Section Crossing										
3,338.00	71.56	184.85	3,182.74	-339.30	-39.76	339.89	11.534	11.531	-0.246	
3,368.00	74.64	185.55	3,191.46	-367.89	-42.37	368.51	10.507	10.267	2.333	
3,399.00	77.76	186.96	3,198.85	-397.81	-45.65	398.48	10.991	10.064	4.548	
3,431.00	80.70	186.87	3,204.83	-429.01	-49.43	429.74	9.192	9.187	-0.281	
3,433.20	80.85	186.91	3,205.18	-431.17	-49.69	431.90	6.956	6.676	1.978	
Actual FTP										
3,462.00	82.77	187.48	3,209.29	-459.45	-53.26	460.24	6.956	6.678	1.967	
3,493.00	85.32	187.66	3,212.50	-490.01	-57.33	490.86	8.246	8.226	0.581	
3,560.00	89.23	188.27	3,215.69	-556.27	-66.60	557.26	5.906	5.836	0.910	
3,622.00	90.11	186.96	3,216.04	-617.73	-74.81	618.84	2.545	1.419	-2.113	
3,684.00	89.80	186.60	3,216.09	-679.29	-82.13	680.51	0.766	-0.500	-0.581	
3,746.00	89.19	185.02	3,216.64	-740.97	-88.41	742.28	2.732	-0.984	-2.548	
3,808.00	87.87	184.32	3,218.23	-802.74	-93.46	804.12	2.410	-2.129	-1.129	
3,869.00	88.22	184.93	3,220.31	-863.51	-98.37	864.96	1.152	0.574	1.000	
3,931.00	88.75	185.37	3,221.95	-925.23	-103.93	926.77	1.111	0.855	0.710	
3,993.00	88.97	184.76	3,223.18	-986.98	-109.41	988.59	1.046	0.355	-0.984	
4,056.00	89.14	182.56	3,224.22	-1,049.84	-113.43	1,051.51	3.502	0.270	-3.492	
4,117.00	89.23	179.49	3,225.09	-1,110.81	-114.52	1,112.49	5.034	0.148	-5.033	
4,179.00	89.89	178.52	3,225.57	-1,172.80	-113.44	1,174.46	1.892	1.065	-1.565	
4,241.00	90.07	179.40	3,225.59	-1,234.79	-112.32	1,236.42	1.449	0.290	1.419	
4,302.00	90.42	179.40	3,225.33	-1,295.79	-111.68	1,297.40	0.574	0.574	0.000	
4,364.00	90.55	179.49	3,224.80	-1,357.78	-111.08	1,359.38	0.255	0.210	0.145	
4,426.00	90.68	177.64	3,224.14	-1,419.76	-109.53	1,421.32	2.991	0.210	-2.984	
4,488.00	91.16	177.82	3,223.14	-1,481.70	-107.07	1,483.21	0.827	0.774	0.290	
4,550.00	91.12	177.29	3,221.91	-1,543.63	-104.43	1,545.09	0.857	-0.065	-0.855	
4,612.00	89.98	177.64	3,221.31	-1,605.57	-101.68	1,606.98	1.923	-1.839	0.565	

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Site:	Hi Bob Federal #1H	MD Reference:	Updated @ 3819.30usft (Stoneham 6)
Well:	#1H	North Reference:	Grid
Wellbore:	Drilling	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	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)
4,674.00	88.75	176.32	3,222.00	-1,667.47	-98.42	1,668.83	2.910	-1.984	-2.129
4,735.00	89.10	177.29	3,223.14	-1,728.37	-95.02	1,729.66	1.690	0.574	1.590
4,797.00	89.19	176.67	3,224.07	-1,790.27	-91.75	1,791.51	1.010	0.145	-1.000
4,859.00	87.69	176.67	3,225.76	-1,852.14	-88.15	1,853.31	2.419	-2.419	0.000
4,921.00	87.96	175.79	3,228.11	-1,913.97	-84.08	1,915.06	1.484	0.435	-1.419
4,983.00	88.18	175.97	3,230.20	-1,975.77	-79.63	1,976.79	0.458	0.355	0.290
5,045.00	88.48	177.20	3,232.01	-2,037.63	-75.94	2,038.58	2.041	0.484	1.984
5,106.00	88.79	177.11	3,233.46	-2,098.54	-72.91	2,099.43	0.529	0.508	-0.148
5,168.00	88.79	177.73	3,234.77	-2,160.46	-70.12	2,161.30	1.000	0.000	1.000
5,230.00	88.62	178.78	3,236.17	-2,222.42	-68.23	2,223.22	1.715	-0.274	1.694
5,292.00	88.92	179.66	3,237.50	-2,284.40	-67.39	2,285.18	1.499	0.484	1.419
5,354.00	89.10	179.31	3,238.57	-2,346.38	-66.83	2,347.15	0.635	0.290	-0.565
5,415.00	89.63	181.24	3,239.25	-2,407.38	-67.12	2,408.14	3.281	0.869	3.164
5,477.00	89.49	181.16	3,239.72	-2,469.36	-68.42	2,470.14	0.260	-0.226	-0.129
5,538.00	90.07	182.21	3,239.96	-2,530.33	-70.21	2,531.13	1.966	0.951	1.721
5,600.00	90.59	183.62	3,239.60	-2,592.25	-73.37	2,593.09	2.424	0.839	2.274
5,662.00	90.73	182.74	3,238.89	-2,654.15	-76.81	2,655.04	1.437	0.226	-1.419
5,757.00	89.63	183.09	3,238.59	-2,749.03	-81.64	2,749.98	1.215	-1.158	0.368
5,818.00	89.98	183.00	3,238.80	-2,809.94	-84.88	2,810.93	0.592	0.574	-0.148
5,881.00	90.46	183.88	3,238.55	-2,872.82	-88.66	2,873.87	1.591	0.762	1.397
5,942.00	90.86	183.09	3,237.85	-2,933.71	-92.37	2,934.80	1.452	0.656	-1.295
6,005.00	91.43	183.70	3,236.59	-2,996.58	-96.10	2,997.73	1.325	0.905	0.968
6,066.00	91.52	183.00	3,235.02	-3,057.46	-99.66	3,058.66	1.157	0.148	-1.148
6,128.00	90.33	181.42	3,234.02	-3,119.40	-102.05	3,120.63	3.190	-1.919	-2.548
6,190.00	88.88	179.66	3,234.45	-3,181.39	-102.63	3,182.62	3.678	-2.339	-2.839
6,252.00	88.31	177.46	3,235.97	-3,243.35	-101.08	3,244.55	3.664	-0.919	-3.548
6,314.00	88.48	178.78	3,237.71	-3,305.29	-99.04	3,306.45	2.146	0.274	2.129
6,376.00	88.75	179.66	3,239.20	-3,367.27	-98.20	3,368.40	1.484	0.435	1.419
6,438.00	89.01	179.75	3,240.42	-3,429.25	-97.88	3,430.38	0.444	0.419	0.145
6,500.00	88.79	179.57	3,241.61	-3,491.24	-97.51	3,492.35	0.458	-0.355	-0.290
6,562.00	88.31	178.52	3,243.17	-3,553.21	-96.48	3,554.30	1.862	-0.774	-1.694
6,624.00	88.79	179.75	3,244.74	-3,615.18	-95.54	3,616.25	2.129	0.774	1.984
6,686.00	89.23	178.78	3,245.81	-3,677.17	-94.75	3,678.21	1.718	0.710	-1.565
6,747.00	89.71	179.49	3,246.38	-3,738.16	-93.83	3,739.18	1.405	0.787	1.164
6,808.00	89.36	179.13	3,246.87	-3,799.15	-93.09	3,800.15	0.823	-0.574	-0.590
6,870.00	88.92	179.22	3,247.80	-3,861.14	-92.20	3,862.12	0.724	-0.710	0.145
6,932.00	89.32	179.05	3,248.76	-3,923.12	-91.26	3,924.08	0.701	0.645	-0.274
6,994.00	89.58	179.13	3,249.35	-3,985.11	-90.28	3,986.04	0.439	0.419	0.129
7,056.00	89.01	179.05	3,250.11	-4,047.10	-89.30	4,048.01	0.928	-0.919	-0.129
7,118.00	88.31	178.87	3,251.56	-4,109.07	-88.17	4,109.95	1.166	-1.129	-0.290
7,180.00	87.82	178.96	3,253.66	-4,171.03	-87.00	4,171.88	0.804	-0.790	0.145
7,242.00	88.18	178.61	3,255.82	-4,232.97	-85.68	4,233.80	0.810	0.581	-0.565
7,304.00	88.57	179.57	3,257.58	-4,294.94	-84.70	4,295.74	1.671	0.629	1.548

Survey Report

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Site:	Hi Bob Federal #1H	MD Reference:	Updated @ 3819.30usft (Stoneham 6)
Well:	#1H	North Reference:	Grid
Wellbore:	Drilling	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	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)	
7,365.00	89.14	179.49	3,258.80	-4,355.93	-84.20	4,356.71	0.944	0.934	-0.131	
7,427.00	89.54	179.40	3,259.51	-4,417.92	-83.60	4,418.69	0.661	0.645	-0.145	
7,489.00	89.85	180.19	3,259.84	-4,479.92	-83.38	4,480.68	1.369	0.500	1.274	
7,550.00	90.33	180.45	3,259.75	-4,540.92	-83.72	4,541.67	0.895	0.787	0.426	
7,612.00	90.15	180.01	3,259.49	-4,602.91	-83.97	4,603.67	0.767	-0.290	-0.710	
7,674.00	90.77	180.80	3,258.99	-4,664.91	-84.40	4,665.66	1.620	1.000	1.274	
7,736.00	89.45	180.45	3,258.87	-4,726.91	-85.08	4,727.66	2.203	-2.129	-0.565	
7,798.00	87.87	180.01	3,260.32	-4,788.89	-85.33	4,789.64	2.645	-2.548	-0.710	
7,859.00	88.31	179.66	3,262.35	-4,849.85	-85.15	4,850.59	0.921	0.721	-0.574	
7,919.00	88.75	179.66	3,263.89	-4,909.83	-84.80	4,910.56	0.733	0.733	0.000	
7,981.00	89.19	180.63	3,265.01	-4,971.82	-84.95	4,972.54	1.718	0.710	1.565	
8,042.00	89.54	180.80	3,265.68	-5,032.81	-85.72	5,033.54	0.638	0.574	0.279	
8,104.00	89.98	180.19	3,265.94	-5,094.81	-86.25	5,095.53	1.213	0.710	-0.984	
8,166.00	90.55	180.01	3,265.66	-5,156.81	-86.36	5,157.53	0.964	0.919	-0.290	
8,227.00	90.33	180.54	3,265.19	-5,217.80	-86.65	5,218.52	0.941	-0.361	0.869	
8,289.00	89.85	180.45	3,265.09	-5,279.80	-87.19	5,280.52	0.788	-0.774	-0.145	
8,351.00	90.55	179.31	3,264.87	-5,341.80	-87.06	5,342.51	2.158	1.129	-1.839	
8,413.00	91.21	180.89	3,263.92	-5,403.79	-87.17	5,404.49	2.761	1.065	2.548	
8,476.00	91.47	180.72	3,262.45	-5,466.77	-88.05	5,467.47	0.493	0.413	-0.270	
Last Aim Svy										
8,485.00	91.47	180.72	3,262.22	-5,475.76	-88.16	5,476.47	0.000	0.000	0.000	
Actual LTP										
8,532.00	91.47	180.72	3,261.01	-5,522.74	-88.75	5,523.46	0.000	0.000	0.000	
Projection to Bit										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
2,628.00	2,627.77	10.10	7.47	Tie on Pilot	
2,689.00	2,688.76	9.84	6.76	First Aim Svy	
3,329.00	3,179.81	-330.82	-39.04	Section Crossing	
3,433.20	3,205.18	-431.17	-49.69	Actual FTP	
8,476.00	3,262.45	-5,466.77	-88.05	Last Aim Svy	
8,485.00	3,262.22	-5,475.76	-88.16	Actual LTP	
8,532.00	3,261.01	-5,522.74	-88.75	Projection to Bit	

Checked By: _____ Approved By: _____ Date: _____



Survey Report

Service Company: Aim Directional

Location: 21 Miles NE of Artesia

Well: Hi Bob Fed 1H Sidetrack 01

Rig: Stoneham 6

API or UWI: 30-005-64331-0100

Job Number: WT-19-065

State: New Mexico

Operating Company: Marshall & Winston Inc

County: Chaves

Magnetic Declination: 7.24

Country: U.S.

Proposed Azimuth: 180.91

Comment

North Reference: GRID

Latitude: 33.0171

Longitude: -104.0342167

Tie-In Data

MD	Inclination	Azimuth	TVD	NS	EW
1244.00	0.46	65.79	1243.84	7.43	11.38

Survey Data

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
1328.00	0.48	92.32	1327.84	7.55	12.04	57.89	14.21	-7.74	0.26
1390.00	0.57	95.13	1389.83	7.52	12.61	59.20	14.68	-7.72	0.15
1452.00	0.53	95.57	1451.83	7.46	13.20	60.52	15.16	-7.67	0.06
1514.00	0.40	104.71	1513.83	7.38	13.69	61.68	15.55	-7.59	0.24
1576.00	0.53	108.23	1575.83	7.23	14.17	62.97	15.91	-7.46	0.21
1638.00	0.48	100.49	1637.83	7.10	14.70	64.24	16.33	-7.33	0.14
1699.00	0.44	96.89	1698.82	7.02	15.19	65.19	16.73	-7.26	0.08
1761.00	0.40	84.06	1760.82	7.02	15.64	65.84	17.14	-7.26	0.16
1823.00	0.31	93.99	1822.82	7.03	16.02	66.32	17.49	-7.28	0.18
1884.00	0.09	350.10	1883.82	7.06	16.18	66.42	17.65	-7.32	0.56
1947.00	0.79	288.75	1946.82	7.25	15.76	65.29	17.34	-7.50	1.19
2008.00	0.75	290.25	2007.81	7.52	14.98	63.34	16.77	-7.76	0.07
2070.00	0.75	288.84	2069.81	7.79	14.22	61.27	16.22	-8.02	0.03
2132.00	0.70	286.03	2131.80	8.03	13.47	59.20	15.68	-8.24	0.10
2194.00	0.70	291.74	2193.80	8.28	12.76	57.03	15.20	-8.48	0.11
2256.00	0.75	292.53	2255.79	8.57	12.03	54.53	14.77	-8.76	0.08
2317.00	0.75	293.59	2316.79	8.88	11.29	51.81	14.37	-9.06	0.02
2379.00	0.66	287.00	2378.78	9.15	10.58	49.15	13.99	-9.32	0.20
2442.00	0.79	287.00	2441.78	9.38	9.82	46.30	13.58	-9.54	0.21
2503.00	0.75	286.64	2502.77	9.62	9.03	43.20	13.20	-9.76	0.07
2566.00	0.75	287.70	2565.77	9.86	8.25	39.89	12.86	-9.99	0.02

2628.00	0.75	285.77	2627.76	10.10	7.47	36.49	12.56	-10.22	0.04
2689.00	0.92	220.97	2688.76	9.84	6.76	34.51	11.94	-9.94	1.49
2720.00	3.21	204.45	2719.73	8.86	6.24	35.17	10.84	-8.96	7.56
2750.00	6.15	201.72	2749.63	6.60	5.30	38.76	8.46	-6.68	9.83
2782.00	9.71	199.35	2781.32	2.46	3.77	56.86	4.50	-2.52	11.17
2813.00	13.10	198.38	2811.70	-3.34	1.80	151.75	3.79	3.31	10.95
2843.00	16.79	198.47	2840.68	-10.68	-0.65	183.48	10.70	10.69	12.30
2874.00	20.18	198.82	2870.08	-19.99	-3.79	190.75	20.35	20.05	10.94
2904.00	24.22	198.38	2897.85	-30.73	-7.41	193.55	31.61	30.85	13.48
2935.00	27.60	195.92	2925.73	-43.68	-11.38	194.61	45.14	43.85	11.44
2967.00	30.73	192.58	2953.67	-58.79	-15.20	194.49	60.72	59.02	11.02
2998.00	33.49	188.10	2979.93	-74.99	-18.13	193.59	77.15	75.27	11.75
3028.00	36.66	184.93	3004.48	-92.12	-20.06	192.29	94.28	92.42	12.18
3060.00	40.09	184.14	3029.57	-111.92	-21.63	190.94	113.99	112.25	10.83
3090.00	44.22	183.53	3051.80	-132.00	-22.97	189.87	133.99	132.35	13.83
3120.00	48.13	184.06	3072.57	-153.59	-24.41	189.03	155.52	153.96	13.10
3151.00	51.60	184.06	3092.55	-177.23	-26.09	188.37	179.14	177.62	11.19
3183.00	53.93	185.55	3111.91	-202.61	-28.22	187.93	204.57	203.04	8.17
3214.00	57.32	184.76	3129.41	-228.09	-30.52	187.62	230.13	228.55	11.14
3244.00	60.66	184.76	3144.87	-253.71	-32.65	187.33	255.81	254.20	11.13
3275.00	64.53	184.50	3159.13	-281.14	-34.87	187.07	283.29	281.66	12.51
3306.00	67.87	184.93	3171.64	-309.40	-37.21	186.86	311.63	309.95	10.85
3338.00	71.56	184.85	3182.73	-339.30	-39.76	186.68	341.63	339.89	11.53
3368.00	74.64	185.55	3191.45	-367.89	-42.37	186.57	370.32	368.51	10.51
3399.00	77.76	186.96	3198.85	-397.81	-45.65	186.55	400.42	398.48	10.99
3431.00	80.70	186.87	3204.83	-429.01	-49.43	186.57	431.85	429.74	9.19
3462.00	82.77	187.48	3209.28	-459.45	-53.26	186.61	462.52	460.24	6.96
3493.00	85.32	187.66	3212.50	-490.01	-57.33	186.67	493.35	490.86	8.25
3560.00	89.23	188.27	3215.68	-556.27	-66.60	186.83	560.25	557.26	5.91
3622.00	90.11	186.96	3216.04	-617.72	-74.81	186.91	622.24	618.84	2.55
3684.00	89.80	186.60	3216.09	-679.29	-82.13	186.89	684.24	680.51	0.77
3746.00	89.19	185.02	3216.63	-740.97	-88.41	186.80	746.22	742.28	2.73
3808.00	87.87	184.32	3218.23	-802.74	-93.45	186.64	808.16	804.12	2.41
3869.00	88.22	184.93	3220.31	-863.51	-98.37	186.50	869.09	864.96	1.15
3931.00	88.75	185.37	3221.95	-925.23	-103.93	186.41	931.05	926.77	1.11
3993.00	88.97	184.76	3223.18	-986.98	-109.41	186.33	993.02	988.59	1.05
4056.00	89.14	182.56	3224.22	-1049.84	-113.43	186.17	1055.95	1051.51	3.50
4117.00	89.23	179.49	3225.09	-1110.81	-114.52	185.89	1116.70	1112.49	5.03
4179.00	89.89	178.52	3225.56	-1172.80	-113.44	185.52	1178.28	1174.46	1.89
4241.00	90.07	179.40	3225.58	-1234.79	-112.32	185.20	1239.89	1236.42	1.45
4302.00	90.42	179.40	3225.32	-1295.79	-111.68	184.93	1300.59	1297.40	0.57
4364.00	90.55	179.49	3224.80	-1357.78	-111.08	184.68	1362.32	1359.38	0.26

4426.00	90.68	177.64	3224.13	-1419.76	-109.52	184.41	1423.97	1421.32	2.99
4488.00	91.16	177.82	3223.14	-1481.70	-107.07	184.13	1485.56	1483.21	0.83
4550.00	91.12	177.29	3221.90	-1543.63	-104.42	183.87	1547.16	1545.09	0.86
4612.00	89.98	177.64	3221.31	-1605.57	-101.68	183.62	1608.78	1606.98	1.92
4674.00	88.75	176.32	3222.00	-1667.47	-98.42	183.38	1670.38	1668.83	2.91
4735.00	89.10	177.29	3223.14	-1728.37	-95.02	183.15	1730.98	1729.66	1.69
4797.00	89.19	176.67	3224.06	-1790.27	-91.75	182.93	1792.62	1791.51	1.01
4859.00	87.69	176.67	3225.75	-1852.14	-88.15	182.72	1854.24	1853.31	2.42
4921.00	87.96	175.79	3228.11	-1913.97	-84.08	182.52	1915.81	1915.06	1.48
4983.00	88.18	175.97	3230.19	-1975.77	-79.63	182.31	1977.37	1976.79	0.46
5045.00	88.48	177.20	3232.00	-2037.63	-75.93	182.13	2039.05	2038.58	2.04
5106.00	88.79	177.11	3233.45	-2098.54	-72.91	181.99	2099.81	2099.43	0.53
5168.00	88.79	177.73	3234.76	-2160.46	-70.12	181.86	2161.60	2161.30	1.00
5230.00	88.62	178.78	3236.16	-2222.42	-68.23	181.76	2223.46	2223.22	1.72
5292.00	88.92	179.66	3237.50	-2284.40	-67.39	181.69	2285.39	2285.18	1.50
5354.00	89.10	179.31	3238.57	-2346.38	-66.83	181.63	2347.34	2347.15	0.63
5415.00	89.63	181.24	3239.24	-2407.38	-67.12	181.60	2408.31	2408.14	3.28
5477.00	89.49	181.16	3239.72	-2469.36	-68.42	181.59	2470.31	2470.14	0.26
5538.00	90.07	182.21	3239.95	-2530.33	-70.21	181.59	2531.31	2531.13	1.97
5600.00	90.59	183.62	3239.60	-2592.25	-73.37	181.62	2593.29	2593.09	2.42
5662.00	90.73	182.74	3238.88	-2654.15	-76.81	181.66	2655.26	2655.04	1.44
5757.00	89.63	183.09	3238.58	-2749.03	-81.64	181.70	2750.24	2749.98	1.22
5818.00	89.98	183.00	3238.79	-2809.94	-84.88	181.73	2811.22	2810.93	0.59
5881.00	90.46	183.88	3238.55	-2872.82	-88.66	181.77	2874.19	2873.87	1.59
5942.00	90.86	183.09	3237.85	-2933.71	-92.37	181.80	2935.16	2934.80	1.45
6005.00	91.43	183.70	3236.59	-2996.58	-96.10	181.84	2998.12	2997.73	1.33
6066.00	91.52	183.00	3235.02	-3057.46	-99.66	181.87	3059.08	3058.66	1.16
6128.00	90.33	181.42	3234.02	-3119.40	-102.05	181.87	3121.07	3120.63	3.19
6190.00	88.88	179.66	3234.44	-3181.39	-102.63	181.85	3183.05	3182.62	3.68
6252.00	88.31	177.46	3235.96	-3243.35	-101.08	181.78	3244.92	3244.55	3.66
6314.00	88.48	178.78	3237.70	-3305.29	-99.04	181.72	3306.77	3306.45	2.15
6376.00	88.75	179.66	3239.20	-3367.27	-98.20	181.67	3368.70	3368.40	1.48
6438.00	89.01	179.75	3240.41	-3429.25	-97.88	181.63	3430.65	3430.38	0.44
6500.00	88.79	179.57	3241.60	-3491.24	-97.51	181.60	3492.60	3492.35	0.46
6562.00	88.31	178.52	3243.17	-3553.21	-96.48	181.56	3554.52	3554.30	1.86
6624.00	88.79	179.75	3244.74	-3615.18	-95.54	181.51	3616.45	3616.25	2.13
6686.00	89.23	178.78	3245.81	-3677.17	-94.75	181.48	3678.39	3678.21	1.72
6747.00	89.71	179.49	3246.37	-3738.16	-93.83	181.44	3739.34	3739.18	1.40
6808.00	89.36	179.13	3246.87	-3799.15	-93.09	181.40	3800.29	3800.15	0.82
6870.00	88.92	179.22	3247.80	-3861.14	-92.20	181.37	3862.24	3862.12	0.72
6932.00	89.32	179.05	3248.75	-3923.12	-91.26	181.33	3924.18	3924.08	0.70
6994.00	89.58	179.13	3249.35	-3985.11	-90.28	181.30	3986.14	3986.04	0.44

7056.00	89.01	179.05	3250.11	-4047.10	-89.30	181.26	4048.09	4048.01	0.93
7118.00	88.31	178.87	3251.56	-4109.07	-88.17	181.23	4110.02	4109.95	1.17
7180.00	87.82	178.96	3253.65	-4171.03	-87.00	181.19	4171.93	4171.88	0.80
7242.00	88.18	178.61	3255.82	-4232.97	-85.68	181.16	4233.84	4233.80	0.81
7304.00	88.57	179.57	3257.58	-4294.94	-84.70	181.13	4295.78	4295.74	1.67
7365.00	89.14	179.49	3258.79	-4355.93	-84.20	181.11	4356.74	4356.71	0.94
7427.00	89.54	179.40	3259.51	-4417.92	-83.60	181.08	4418.71	4418.69	0.66
7489.00	89.85	180.19	3259.84	-4479.92	-83.38	181.07	4480.69	4480.68	1.37
7550.00	90.33	180.45	3259.74	-4540.92	-83.72	181.06	4541.69	4541.67	0.89
7612.00	90.15	180.01	3259.48	-4602.91	-83.97	181.05	4603.68	4603.67	0.77
7674.00	90.77	180.80	3258.99	-4664.91	-84.40	181.04	4665.67	4665.66	1.62
7736.00	89.45	180.45	3258.87	-4726.90	-85.08	181.03	4727.67	4727.66	2.20
7798.00	87.87	180.01	3260.32	-4788.89	-85.33	181.02	4789.65	4789.64	2.65
7859.00	88.31	179.66	3262.35	-4849.85	-85.15	181.01	4850.60	4850.59	0.92
7919.00	88.75	179.66	3263.89	-4909.83	-84.80	180.99	4910.56	4910.56	0.73
7981.00	89.19	180.63	3265.00	-4971.82	-84.95	180.98	4972.54	4972.54	1.72
8042.00	89.54	180.80	3265.68	-5032.81	-85.72	180.98	5033.54	5033.54	0.64
8104.00	89.98	180.19	3265.94	-5094.81	-86.25	180.97	5095.54	5095.53	1.21
8166.00	90.55	180.01	3265.65	-5156.81	-86.36	180.96	5157.53	5157.53	0.96
8227.00	90.33	180.54	3265.18	-5217.80	-86.65	180.95	5218.52	5218.52	0.94
8289.00	89.85	180.45	3265.09	-5279.80	-87.19	180.95	5280.52	5280.52	0.79
8351.00	90.55	179.31	3264.87	-5341.80	-87.06	180.93	5342.51	5342.51	2.16
8413.00	91.21	180.89	3263.92	-5403.79	-87.17	180.92	5404.49	5404.49	2.76
8476.00	91.47	180.72	3262.44	-5466.77	-88.05	180.92	5467.47	5467.47	0.49

Projected Survey

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
8532.00	91.47	180.72	3261.01	-5522.74	-88.75	180.92	5523.46	5523.46	0.00