

DELAWARE BASIN WEST

ATLAS PROSPECT (NM-E)

ADMIRAL FEDERAL PROJECT (ATLAS 2529)

ADMIRAL FEDERAL COM 502H

OWB

Design: AWP

Standard Survey Report

02 July, 2020

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well ADMIRAL FEDERAL COM 502H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 3007.9usft (Pioneer 84)
Site:	ADMIRAL FEDERAL PROJECT (ATLAS 2529)	MD Reference:	KB=25' @ 3007.9usft (Pioneer 84)
Well:	ADMIRAL FEDERAL COM 502H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	edm

Project	ATLAS PROSPECT (NM-E)		
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		

Well	ADMIRAL FEDERAL COM 502H, ACTIVE			
Well Position	+N/-S	0.0 usft	Northing:	398,093.70 usft
	+E/-W	0.0 usft	Easting:	604,947.40 usft
Position Uncertainty		3.0 usft	Wellhead Elevation:	usft
			Ground Level:	2,982.9 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/23/2020	6.84	59.84	47,535.99973547

Design	AWP				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	2.74	

Survey Program	Date	7/2/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
89.0	581.0	MWD-SURFACE (OWB)	MWD	OWSG MWD - Standard	
679.0	18,988.0	MWD-INTER/CURVE/LAT (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
89.0	0.22	36.16	89.0	0.1	0.1	0.1	0.25	0.25	0.00	
175.0	0.31	352.65	175.0	0.5	0.2	0.5	0.25	0.10	-50.59	
260.0	0.40	119.92	260.0	0.6	0.4	0.6	0.75	0.11	149.73	
320.0	0.35	133.63	320.0	0.4	0.7	0.4	0.17	-0.08	22.85	
407.0	0.44	141.01	407.0	-0.1	1.1	0.0	0.12	0.10	8.48	
495.0	0.53	148.66	495.0	-0.7	1.5	-0.6	0.13	0.10	8.69	
581.0	0.79	132.14	581.0	-1.4	2.2	-1.3	0.37	0.30	-19.21	
679.0	1.95	110.39	679.0	-2.5	4.2	-2.3	1.28	1.18	-22.19	
768.0	2.10	105.70	767.9	-3.4	7.2	-3.1	0.25	0.17	-5.27	
859.0	2.40	120.41	858.8	-4.9	10.5	-4.4	0.71	0.33	16.16	
949.0	2.13	123.07	948.8	-6.7	13.5	-6.1	0.32	-0.30	2.96	
1,040.0	1.46	120.53	1,039.7	-8.2	15.9	-7.5	0.74	-0.74	-2.79	
1,129.0	1.95	113.36	1,128.7	-9.4	18.3	-8.5	0.60	0.55	-8.06	
1,218.0	1.54	111.80	1,217.6	-10.5	20.8	-9.5	0.46	-0.46	-1.75	

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Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	edm

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,308.0	0.87	144.62	1,307.6	-11.5	22.3	-10.4	1.04	-0.74	36.47
1,403.0	1.26	146.04	1,402.6	-12.9	23.3	-11.8	0.41	0.41	1.49
1,497.0	2.29	148.39	1,496.6	-15.4	24.9	-14.2	1.10	1.10	2.50
1,592.0	2.78	146.37	1,591.5	-18.9	27.1	-17.6	0.52	0.52	-2.13
1,687.0	2.53	147.91	1,686.4	-22.6	29.5	-21.2	0.27	-0.26	1.62
1,782.0	2.77	164.12	1,781.3	-26.6	31.3	-25.1	0.83	0.25	17.06
1,877.0	2.58	182.16	1,876.2	-30.9	31.8	-29.4	0.90	-0.20	18.99
1,972.0	2.54	181.68	1,971.1	-35.2	31.7	-33.6	0.05	-0.04	-0.51
2,066.0	2.31	181.52	2,065.0	-39.1	31.6	-37.6	0.24	-0.24	-0.17
2,161.0	2.25	189.80	2,159.9	-42.9	31.2	-41.4	0.35	-0.06	8.72
2,256.0	2.35	171.46	2,254.8	-46.7	31.2	-45.1	0.78	0.11	-19.31
2,351.0	3.90	142.72	2,349.7	-51.2	33.4	-49.5	2.27	1.63	-30.25
2,446.0	4.05	138.12	2,444.5	-56.2	37.6	-54.4	0.37	0.16	-4.84
2,541.0	4.97	134.28	2,539.2	-61.6	42.8	-59.5	1.02	0.97	-4.04
2,635.0	6.84	132.07	2,632.7	-68.2	49.9	-65.7	2.00	1.99	-2.35
2,730.0	7.75	125.20	2,726.9	-75.7	59.3	-72.8	1.33	0.96	-7.23
2,825.0	6.13	105.53	2,821.2	-80.7	69.4	-77.3	3.00	-1.71	-20.71
2,920.0	5.13	102.79	2,915.7	-83.0	78.5	-79.2	1.09	-1.05	-2.88
3,081.0	4.60	102.81	3,076.2	-86.1	91.8	-81.6	0.33	-0.33	0.01
3,176.0	4.41	100.03	3,170.9	-87.5	99.1	-82.7	0.30	-0.20	-2.93
3,270.0	4.37	97.74	3,264.6	-88.6	106.2	-83.5	0.19	-0.04	-2.44
3,365.0	7.06	96.30	3,359.1	-89.8	115.6	-84.2	2.84	2.83	-1.52
3,460.0	8.83	96.94	3,453.2	-91.3	128.6	-85.1	1.87	1.86	0.67
3,554.0	8.32	96.54	3,546.2	-92.9	142.5	-86.0	0.55	-0.54	-0.43
3,649.0	8.05	94.64	3,640.2	-94.3	156.0	-86.7	0.40	-0.28	-2.00
3,744.0	7.75	92.57	3,734.3	-95.1	169.0	-86.9	0.44	-0.32	-2.18
3,838.0	6.37	89.34	3,827.6	-95.3	180.6	-86.6	1.53	-1.47	-3.44
3,933.0	7.23	84.54	3,921.9	-94.7	191.8	-85.4	1.08	0.91	-5.05
4,028.0	8.03	81.12	4,016.1	-93.1	204.3	-83.2	0.97	0.84	-3.60
4,123.0	7.76	79.08	4,110.2	-90.9	217.2	-80.4	0.41	-0.28	-2.15
4,218.0	7.56	77.61	4,204.3	-88.3	229.6	-77.2	0.29	-0.21	-1.55
4,313.0	7.09	74.31	4,298.5	-85.4	241.3	-73.8	0.66	-0.49	-3.47
4,408.0	6.30	71.55	4,392.9	-82.1	251.9	-70.0	0.90	-0.83	-2.91
4,502.0	6.33	69.32	4,486.3	-78.7	261.6	-66.1	0.26	0.03	-2.37
4,596.0	5.68	68.19	4,579.8	-75.1	270.8	-62.1	0.70	-0.69	-1.20
4,691.0	4.96	65.07	4,674.4	-71.6	278.9	-58.2	0.82	-0.76	-3.28
4,785.0	8.75	68.88	4,767.7	-67.3	289.3	-53.5	4.06	4.03	4.05
4,880.0	12.06	72.48	4,861.1	-61.8	305.5	-47.1	3.55	3.48	3.79
4,974.0	11.66	70.30	4,953.1	-55.6	323.8	-40.1	0.64	-0.43	-2.32
5,068.0	12.22	89.83	5,045.1	-52.4	342.7	-35.9	4.32	0.60	20.78
5,163.0	12.97	106.03	5,137.9	-55.3	363.0	-37.9	3.79	0.79	17.05
5,257.0	11.14	104.08	5,229.8	-60.4	381.9	-42.1	1.99	-1.95	-2.07
5,352.0	11.86	117.71	5,322.9	-67.2	399.5	-48.0	2.95	0.76	14.35

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5,446.0	11.16	116.05	5,415.0	-75.7	416.2	-55.7	0.82	-0.74	-1.77	
5,540.0	9.43	112.86	5,507.5	-82.6	431.5	-62.0	1.94	-1.84	-3.39	
5,635.0	8.43	110.27	5,601.3	-88.1	445.2	-66.7	1.13	-1.05	-2.73	
5,729.0	9.67	128.55	5,694.2	-95.4	457.8	-73.4	3.31	1.32	19.45	
5,824.0	9.74	137.42	5,787.8	-106.3	469.5	-83.7	1.57	0.07	9.34	
5,918.0	9.38	134.90	5,880.5	-117.5	480.3	-94.5	0.59	-0.38	-2.68	
6,013.0	8.62	134.17	5,974.4	-128.0	490.9	-104.4	0.81	-0.80	-0.77	
6,107.0	8.31	133.09	6,067.3	-137.5	500.9	-113.4	0.37	-0.33	-1.15	
6,202.0	7.61	132.10	6,161.4	-146.4	510.6	-121.9	0.75	-0.74	-1.04	
6,296.0	6.86	131.27	6,254.7	-154.3	519.4	-129.3	0.81	-0.80	-0.88	
6,390.0	6.29	130.38	6,348.1	-161.3	527.6	-136.0	0.62	-0.61	-0.95	
6,485.0	5.86	130.07	6,442.5	-167.8	535.2	-142.1	0.45	-0.45	-0.33	
6,580.0	4.89	130.43	6,537.1	-173.6	542.0	-147.5	1.02	-1.02	0.38	
6,675.0	4.64	99.86	6,631.8	-176.9	548.9	-150.5	2.65	-0.26	-32.18	
6,769.0	3.50	119.60	6,725.6	-178.9	555.1	-152.2	1.90	-1.21	21.00	
6,864.0	1.58	113.56	6,820.5	-180.9	558.9	-154.0	2.04	-2.02	-6.36	
6,959.0	0.25	144.36	6,915.4	-181.6	560.2	-154.6	1.44	-1.40	32.42	
7,054.0	1.26	358.75	7,010.4	-180.7	560.3	-153.7	1.55	1.06	-153.27	
7,149.0	2.22	3.16	7,105.4	-177.8	560.4	-150.9	1.02	1.01	4.64	
7,243.0	1.86	347.40	7,199.3	-174.5	560.1	-147.6	0.71	-0.38	-16.77	
7,338.0	1.83	310.31	7,294.3	-172.0	558.6	-145.2	1.24	-0.03	-39.04	
7,433.0	2.06	291.52	7,389.2	-170.4	555.9	-143.7	0.71	0.24	-19.78	
7,527.0	1.46	264.77	7,483.2	-169.9	553.1	-143.3	1.07	-0.64	-28.46	
7,622.0	1.05	245.61	7,578.2	-170.4	551.1	-143.9	0.61	-0.43	-20.17	
7,717.0	1.86	251.02	7,673.1	-171.2	548.9	-144.8	0.86	0.85	5.69	
7,812.0	2.38	254.80	7,768.1	-172.3	545.5	-146.0	0.57	0.55	3.98	
7,906.0	1.44	252.56	7,862.0	-173.1	542.5	-147.0	1.00	-1.00	-2.38	
8,001.0	0.46	167.70	7,957.0	-173.9	541.4	-147.8	1.55	-1.03	-89.33	
8,096.0	4.83	4.37	8,051.9	-170.2	541.8	-144.2	5.55	4.60	-171.93	
8,191.0	10.39	6.51	8,146.0	-157.7	543.1	-131.6	5.86	5.85	2.25	
8,285.0	16.69	2.05	8,237.4	-135.8	544.6	-109.6	6.79	6.70	-4.74	
8,342.3	20.43	3.70	8,291.7	-117.6	545.5	-91.4	6.60	6.53	2.89	
FTP @ 8342.3'MD										
8,374.0	22.51	4.39	8,321.2	-106.0	546.3	-79.8	6.60	6.55	2.17	
8,469.0	27.46	357.74	8,407.3	-66.0	546.8	-39.8	5.98	5.21	-7.00	
8,501.0	27.93	353.87	8,435.6	-51.1	545.8	-25.0	5.81	1.47	-12.09	
8,564.0	31.22	352.84	8,490.4	-20.3	542.1	5.6	5.28	5.22	-1.63	
8,596.0	38.04	354.42	8,516.7	-2.2	540.2	23.6	21.49	21.31	4.94	
8,627.0	44.98	357.21	8,539.9	18.3	538.7	44.0	23.16	22.39	9.00	
8,659.0	50.40	1.68	8,561.5	41.9	538.5	67.6	19.83	16.94	13.97	
8,690.0	58.55	6.32	8,579.5	67.1	540.3	92.8	28.96	26.29	14.97	
8,722.0	64.06	6.18	8,594.8	94.9	543.4	120.8	17.22	17.22	-0.44	
8,737.0	67.09	5.94	8,601.0	108.5	544.8	134.4	20.25	20.20	-1.60	

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8,768.0	73.61	5.51	8,611.4	137.6	547.7	163.6	21.07	21.03	-1.39
8,800.0	75.28	4.15	8,620.0	168.3	550.3	194.4	6.63	5.22	-4.25
8,831.0	77.00	2.17	8,627.4	198.3	552.0	224.5	8.32	5.55	-6.39
8,863.0	79.64	1.32	8,633.9	229.6	552.9	255.8	8.65	8.25	-2.66
8,895.0	81.70	0.96	8,639.1	261.2	553.5	287.3	6.53	6.44	-1.13
8,926.0	85.53	1.13	8,642.6	292.0	554.1	318.1	12.37	12.35	0.55
8,989.0	88.49	0.97	8,645.8	354.9	555.3	381.0	4.71	4.70	-0.25
9,084.0	88.01	0.13	8,648.7	449.9	556.2	475.9	1.02	-0.51	-0.88
9,179.0	88.50	0.34	8,651.6	544.8	556.6	570.8	0.56	0.52	0.22
9,274.0	90.33	1.03	8,652.6	639.8	557.7	665.7	2.06	1.93	0.73
9,369.0	92.41	1.79	8,650.3	734.7	560.0	760.6	2.33	2.19	0.80
9,464.0	90.02	0.88	8,648.3	829.7	562.2	855.6	2.69	-2.52	-0.96
9,559.0	91.16	0.84	8,647.3	924.7	563.7	950.5	1.20	1.20	-0.04
9,654.0	92.16	1.62	8,644.6	1,019.6	565.7	1,045.4	1.33	1.05	0.82
9,749.0	89.10	1.09	8,643.5	1,114.6	568.0	1,140.4	3.27	-3.22	-0.56
9,844.0	88.22	357.75	8,645.8	1,209.5	567.0	1,235.2	3.63	-0.93	-3.52
9,938.0	90.73	359.56	8,646.6	1,303.5	564.8	1,328.9	3.29	2.67	1.93
10,033.0	91.30	358.53	8,644.9	1,398.4	563.2	1,423.7	1.24	0.60	-1.08
10,128.0	92.41	358.60	8,641.9	1,493.4	560.8	1,518.4	1.17	1.17	0.07
10,223.0	89.48	358.38	8,640.3	1,588.3	558.3	1,613.1	3.09	-3.08	-0.23
10,318.0	88.87	357.56	8,641.7	1,683.2	555.0	1,707.8	1.08	-0.64	-0.86
10,412.0	90.89	358.00	8,641.9	1,777.2	551.3	1,801.5	2.20	2.15	0.47
10,507.0	92.77	358.15	8,638.8	1,872.1	548.1	1,896.1	1.99	1.98	0.16
10,602.0	90.54	359.54	8,636.1	1,967.0	546.2	1,990.8	2.77	-2.35	1.46
10,697.0	89.09	359.45	8,636.4	2,062.0	545.4	2,085.7	1.53	-1.53	-0.09
10,792.0	88.13	359.13	8,638.7	2,156.9	544.2	2,180.5	1.07	-1.01	-0.34
10,887.0	88.30	358.04	8,641.7	2,251.9	541.9	2,275.2	1.16	0.18	-1.15
10,982.0	88.65	356.85	8,644.2	2,346.7	537.6	2,369.7	1.31	0.37	-1.25
11,076.0	91.40	358.16	8,644.2	2,440.6	533.5	2,463.3	3.24	2.93	1.39
11,171.0	92.30	357.69	8,641.1	2,535.5	530.1	2,557.9	1.07	0.95	-0.49
11,266.0	93.03	357.91	8,636.7	2,630.3	526.5	2,652.5	0.80	0.77	0.23
11,361.0	90.57	0.06	8,633.7	2,725.3	524.8	2,747.2	3.44	-2.59	2.26
11,456.0	88.38	359.65	8,634.6	2,820.3	524.5	2,842.1	2.35	-2.31	-0.43
11,551.0	88.66	1.86	8,637.0	2,915.2	525.8	2,937.0	2.34	0.29	2.33
11,645.0	88.95	2.75	8,639.0	3,009.1	529.6	3,031.0	1.00	0.31	0.95
11,740.0	89.82	3.81	8,640.0	3,104.0	535.0	3,126.0	1.44	0.92	1.12
11,835.0	90.07	3.36	8,640.1	3,198.8	540.9	3,220.9	0.54	0.26	-0.47
11,930.0	90.61	5.02	8,639.5	3,293.5	547.9	3,315.9	1.84	0.57	1.75
12,024.0	89.29	3.42	8,639.6	3,387.2	554.8	3,409.9	2.21	-1.40	-1.70
12,119.0	88.61	2.12	8,641.3	3,482.1	559.4	3,504.9	1.54	-0.72	-1.37
12,214.0	88.31	1.40	8,643.9	3,577.0	562.3	3,599.8	0.82	-0.32	-0.76
12,309.0	88.75	1.14	8,646.3	3,672.0	564.4	3,694.7	0.54	0.46	-0.27
12,404.0	90.13	1.74	8,647.3	3,766.9	566.8	3,789.7	1.58	1.45	0.63
12,499.0	90.80	2.01	8,646.5	3,861.9	569.9	3,884.7	0.76	0.71	0.28

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well ADMIRAL FEDERAL COM 502H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 3007.9usft (Pioneer 84)
Site:	ADMIRAL FEDERAL PROJECT (ATLAS 2529)	MD Reference:	KB=25' @ 3007.9usft (Pioneer 84)
Well:	ADMIRAL FEDERAL COM 502H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	edm

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,593.0	90.92	1.15	8,645.1	3,955.8	572.5	3,978.7	0.92	0.13	-0.91
12,688.0	87.72	357.88	8,646.2	4,050.8	571.7	4,073.5	4.82	-3.37	-3.44
12,782.0	87.69	358.50	8,650.0	4,144.7	568.7	4,167.1	0.66	-0.03	0.66
12,877.0	88.70	358.02	8,653.0	4,239.6	565.8	4,261.8	1.18	1.06	-0.51
12,972.0	90.55	357.73	8,653.6	4,334.5	562.3	4,356.4	1.97	1.95	-0.31
13,067.0	91.17	357.73	8,652.2	4,429.4	558.6	4,451.1	0.65	0.65	0.00
13,162.0	91.75	357.56	8,649.7	4,524.3	554.7	4,545.6	0.64	0.61	-0.18
13,257.0	91.81	357.04	8,646.8	4,619.2	550.2	4,640.2	0.55	0.06	-0.55
13,351.0	91.33	357.42	8,644.2	4,713.0	545.6	4,733.7	0.65	-0.51	0.40
13,446.0	89.65	357.48	8,643.4	4,807.9	541.4	4,828.3	1.77	-1.77	0.06
13,541.0	89.95	357.34	8,643.7	4,902.8	537.1	4,922.9	0.35	0.32	-0.15
13,636.0	91.32	357.85	8,642.7	4,997.7	533.1	5,017.5	1.54	1.44	0.54
13,731.0	92.94	357.68	8,639.1	5,092.6	529.4	5,112.1	1.71	1.71	-0.18
13,826.0	90.08	358.91	8,636.6	5,187.5	526.6	5,206.7	3.28	-3.01	1.29
13,921.0	87.27	358.31	8,638.8	5,282.4	524.3	5,301.5	3.02	-2.96	-0.63
14,015.0	87.62	357.97	8,643.0	5,376.3	521.3	5,395.1	0.52	0.37	-0.36
14,110.0	87.60	357.67	8,647.0	5,471.2	517.6	5,489.6	0.32	-0.02	-0.32
14,205.0	88.21	357.49	8,650.5	5,566.0	513.6	5,584.2	0.67	0.64	-0.19
14,300.0	89.36	358.07	8,652.5	5,660.9	510.0	5,678.8	1.36	1.21	0.61
14,395.0	89.61	358.02	8,653.3	5,755.9	506.7	5,773.5	0.27	0.26	-0.05
14,490.0	90.45	357.85	8,653.3	5,850.8	503.3	5,868.1	0.90	0.88	-0.18
14,585.0	90.98	357.81	8,652.1	5,945.7	499.7	5,962.8	0.56	0.56	-0.04
14,679.0	90.78	359.30	8,650.7	6,039.7	497.3	6,056.5	1.60	-0.21	1.59
14,774.0	90.93	359.87	8,649.2	6,134.7	496.6	6,151.4	0.62	0.16	0.60
14,869.0	90.47	0.51	8,648.1	6,229.6	497.0	6,246.3	0.83	-0.48	0.67
14,964.0	90.60	0.51	8,647.2	6,324.6	497.8	6,341.2	0.14	0.14	0.00
15,059.0	90.84	359.92	8,646.0	6,419.6	498.2	6,436.1	0.67	0.25	-0.62
15,154.0	91.13	0.47	8,644.4	6,514.6	498.5	6,531.0	0.65	0.31	0.58
15,249.0	91.57	359.71	8,642.1	6,609.6	498.6	6,625.9	0.92	0.46	-0.80
15,344.0	92.43	359.85	8,638.8	6,704.5	498.3	6,720.7	0.92	0.91	0.15
15,439.0	90.69	1.24	8,636.2	6,799.5	499.2	6,815.6	2.34	-1.83	1.46
15,533.0	89.90	1.69	8,635.7	6,893.5	501.6	6,909.5	0.97	-0.84	0.48
15,628.0	89.03	359.98	8,636.6	6,988.4	503.0	7,004.5	2.02	-0.92	-1.80
15,723.0	89.44	359.12	8,637.9	7,083.4	502.2	7,099.3	1.00	0.43	-0.91
15,818.0	90.21	358.58	8,638.2	7,178.4	500.3	7,194.1	0.99	0.81	-0.57
15,913.0	90.72	357.90	8,637.4	7,273.3	497.4	7,288.8	0.89	0.54	-0.72
16,008.0	91.21	357.52	8,635.8	7,368.3	493.6	7,383.4	0.65	0.52	-0.40
16,102.0	86.69	1.35	8,637.5	7,462.2	492.7	7,477.2	6.30	-4.81	4.07
16,197.0	87.67	1.16	8,642.2	7,557.1	494.7	7,572.1	1.05	1.03	-0.20
16,292.0	88.46	1.09	8,645.4	7,652.0	496.6	7,667.0	0.83	0.83	-0.07
16,386.0	89.25	0.82	8,647.3	7,746.0	498.2	7,760.9	0.89	0.84	-0.29
16,481.0	88.72	359.67	8,649.0	7,840.9	498.6	7,855.8	1.33	-0.56	-1.21
16,577.0	89.61	359.24	8,650.4	7,936.9	497.7	7,951.6	1.03	0.93	-0.45

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well ADMIRAL FEDERAL COM 502H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 3007.9usft (Pioneer 84)
Site:	ADMIRAL FEDERAL PROJECT (ATLAS 2529)	MD Reference:	KB=25' @ 3007.9usft (Pioneer 84)
Well:	ADMIRAL FEDERAL COM 502H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	edm

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,672.0	90.43	359.31	8,650.3	8,031.9	496.5	8,046.5	0.87	0.86	0.07
16,766.0	89.96	359.04	8,650.0	8,125.9	495.1	8,140.3	0.58	-0.50	-0.29
16,861.0	89.92	358.87	8,650.1	8,220.9	493.4	8,235.1	0.18	-0.04	-0.18
16,956.0	89.73	359.20	8,650.4	8,315.9	491.8	8,329.9	0.40	-0.20	0.35
17,051.0	91.06	0.15	8,649.8	8,410.9	491.2	8,424.7	1.72	1.40	1.00
17,145.0	91.04	0.13	8,648.0	8,504.8	491.5	8,518.6	0.03	-0.02	-0.02
17,240.0	88.93	0.61	8,648.1	8,599.8	492.1	8,613.5	2.28	-2.22	0.51
17,335.0	88.52	1.23	8,650.2	8,694.8	493.6	8,708.5	0.78	-0.43	0.65
17,430.0	88.28	1.02	8,652.8	8,789.7	495.5	8,803.4	0.34	-0.25	-0.22
17,525.0	88.29	0.51	8,655.7	8,884.7	496.7	8,898.3	0.54	0.01	-0.54
17,620.0	89.90	0.45	8,657.2	8,979.7	497.5	8,993.2	1.70	1.69	-0.06
17,714.0	90.07	0.25	8,657.2	9,073.7	498.1	9,087.1	0.28	0.18	-0.21
17,809.0	90.29	0.75	8,656.9	9,168.7	498.9	9,182.0	0.58	0.23	0.53
17,903.0	90.27	0.60	8,656.4	9,262.7	500.0	9,276.0	0.16	-0.02	-0.16
17,998.0	90.15	1.05	8,656.1	9,357.7	501.4	9,370.9	0.49	-0.13	0.47
18,093.0	90.45	0.60	8,655.6	9,452.6	502.8	9,465.9	0.57	0.32	-0.47
18,188.0	90.53	0.15	8,654.8	9,547.6	503.4	9,560.8	0.48	0.08	-0.47
18,282.0	90.38	359.97	8,654.0	9,641.6	503.5	9,654.7	0.25	-0.16	-0.19
18,377.0	90.24	0.01	8,653.5	9,736.6	503.5	9,749.6	0.15	-0.15	0.04
18,472.0	90.21	359.84	8,653.1	9,831.6	503.4	9,844.5	0.18	-0.03	-0.18
18,566.0	90.22	359.57	8,652.8	9,925.6	502.9	9,938.3	0.29	0.01	-0.29
18,661.0	90.28	359.69	8,652.4	10,020.6	502.3	10,033.2	0.14	0.06	0.13
18,756.0	90.47	359.46	8,651.8	10,115.6	501.6	10,128.0	0.31	0.20	-0.24
18,851.0	90.46	359.47	8,651.0	10,210.6	500.7	10,222.9	0.01	-0.01	0.01
18,925.0	90.78	359.10	8,650.2	10,284.6	499.7	10,296.7	0.66	0.43	-0.50
LAST MWD SVY @ 18925'MD									
18,938.5	90.78	359.10	8,650.0	10,298.1	499.5	10,310.2	0.00	0.00	0.00
LTP @ 18938.5'MD									
18,988.0	90.78	359.10	8,649.3	10,347.6	498.8	10,359.6	0.00	0.00	0.00
PTD @ 18988'MD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,342.3	8,291.7	-117.6	545.5	FTP @ 8342.3'MD
18,925.0	8,650.2	10,284.6	499.7	LAST MWD SVY @ 18925'MD
18,938.5	8,650.0	10,298.1	499.5	LTP @ 18938.5'MD
18,988.0	8,649.3	10,347.6	498.8	PTD @ 18988'MD

Checked By: _____ Approved By: _____ Date: _____