MS Directional

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Fort Worth, Texas 76140
817.568.1038 (office)
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MS Directional Survey Data Certification

MS Directional Job Number:	DDMO-180601
Survey Type:	MWD
Operating Company:	ConocoPhillips Company
Well Name & Number:	Zia Hills 25E FED COM 404H
Location:	Lea County, NM
API Number:	30-025-43363

Original Wellbore

Tie In Depth:	Surface
Surveyed Depths:	205' – 15,742' MD
Projected TD Survey:	15,793' MD

Sidetrack

Tie In Depth:	9,760' MD
Surveyed Depths:	9,809' – 17,719' MD
Projected TD Survey:	17,771' MD

Dates Performed:	06/25/2018 – 08/22/2018

I certify that the data is true, correct and complete and within the limitations of the tool set forth by MS Directional; that I am authorized and qualified to make this report and that I have reviewed this report and find it conforms to the principles and procedures as set forth by MS Directional.

Digitally signed by:	Fallon Kosechata
MWD Surveyor Name:	Fallon Kosechata
Date:	09-07-2018
Email:	fkosechata@msdir.com

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V09.04.02

SURVEY CALCULATION PROGRAM

9/7/18 11:46

Company:	ConocoPhillips Company			
Well Name:	Zia Hills 25E FED COM 404H - Original Wellbore			
Location:	Lea County, NM			
Rig:	Nabors #891	Magnetic Declination:	6.54	REFERENCED TO GRID NORTH
Job Number:	DDMO-180601			
API #:	30-025-43363			
Vertical Section Azimuth:	179.60	Proposed Direction:	179.60	
Survey Calculation Method:	Minimum Curvature			

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	15,793	90.31	182.61	10634.41	-5179.31	-962.74	5172.46

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Closure Azm	DLS/ 100	BUR/ 100'
TIE IN	0	0.00	0.00	0.00	0.00	0.00			0.00		
1	205	1.24	338.35	204.98	2.06	-0.82	-2.07	2.22	338.35	0.60	0.60
2	393	2.04	325.59	392.91	6.71	-3.46	-6.74	7.55	332.73	0.47	0.43
3	582	2.65	318.06	581.75	12.74	-8.28	-12.80	15.19	326.97	0.36	0.32
4	771	2.39	301.14	770.57	18.03	-14.57	-18.13	23.18	321.04	0.42	-0.14
5	854	1.46	287.12	853.52	19.23	-17.07	-19.35	25.71	318.42	1.25	-1.12
6	976	1.10	247.52	975.49	19.24	-19.63	-19.38	27.49	314.42	0.76	-0.30
7	1,067	2.88	266.84	1066.43	18.78	-22.72	-18.94	29.48	309.58	2.06	1.96
8	1,161	3.55	270.01	1160.29	18.65	-27.99	-18.85	33.64	303.68	0.74	0.71
9	1,255	3.21	270.37	1254.12	18.67	-33.53	-18.90	38.38	299.11	0.36	-0.36
10	1,350	3.28	275.16	1348.97	18.93	-38.90	-19.20	43.26	295.95	0.29	0.07
11	1,445	3.15	274.67	1443.82	19.39	-44.21	-19.70	48.27	293.68	0.14	-0.14
12	1,539	3.76	281.23	1537.65	20.20	-49.81	-20.55	53.75	292.08	0.77	0.65
13	1,634	3.36	270.22	1632.47	20.82	-55.64	-21.20	59.41	290.51	0.83	-0.42
14	1,728	6.26	280.91	1726.13	21.80	-63.43	-22.24	67.07	288.96	3.22	3.09
15	1,822	8.84	282.14	1819.30	24.29	-75.53	-24.81	79.34	287.83	2.75	2.74
16	1,917	8.97	280.92	1913.16	27.22	-89.94	-27.85	93.97	286.84	0.24	0.14
17	2,011	9.09	282.22	2005.99	30.18	-104.39	-30.91	108.67	286.13	0.25	0.13
18	2,106	9.34	280.64	2099.77	33.20	-119.30	-34.03	123.83	285.55	0.37	0.26
19	2,200	10.31	287.85	2192.39	37.18	-134.81	-38.12	139.84	285.42	1.66	1.03
20	2,294	8.46	290.70	2285.13	42.21	-149.28	-43.25	155.13	285.79	2.03	-1.97
21	2,388	6.79	289.27	2378.30	46.48	-161.00	-47.61	167.57	286.11	1.79	-1.78
22	2,483	7.02	288.91	2472.61	50.22	-171.79	-51.42	178.98	286.30	0.25	0.24
23	2,577	7.23	289.56	2565.88	54.06	-182.80	-55.34	190.62	286.48	0.24	0.22
24	2,671	6.81	292.21	2659.18	58.15	-193.53	-59.50	202.08	286.72	0.56	-0.45
25	2,766	6.35	292.67	2753.55	62.30	-203.59	-63.72	212.91	287.01	0.49	-0.48
26	2,860	5.65	295.96	2847.04	66.33	-212.55	-67.81	222.66	287.33	0.83	-0.74
27	2,955	6.33	284.53	2941.52	69.69	-221.82	-71.24	232.52	287.44	1.44	0.72
28	3,050	6.53	283.79	3035.92	72.29	-232.14	-73.91	243.14	287.30	0.23	0.21
29	3,144	6.12	284.07	3129.35	74.79	-242.19	-76.48	253.48	287.16	0.44	-0.44
30	3,239	5.40	282.70	3223.87	77.00	-251.46	-78.75	262.99	287.02	0.77	-0.76
31	3,333	6.26	281.75	3317.38	79.02	-260.80	-80.84	272.50	286.86	0.92	0.91
32	3,428	6.85	285.59	3411.76	81.59	-271.33	-83.49	283.33	286.74	0.77	0.62
33	3,523	6.40	289.21	3506.13	84.86	-281.78	-86.82	294.28	286.76	0.65	-0.47

MS Directional
V09.04.02

SURVEY CALCULATION PROGRAM

9/7/18 11:46

Company:	ConocoPhillips Company			
Well Name:	Zia Hills 25E FED COM 404H - Original Wellbore			
Location:	Lea County, NM			
Rig:	Nabors #891	Magnetic Declination:	6.54	REFERENCED TO GRID NORTH
Job Number:	DDMO-180601			
API #:	30-025-43363			
Vertical Section Azimuth:	179.60	Proposed Direction:	179.60	
Survey Calculation Method:	Minimum Curvature			

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	15,793	90.31	182.61	10634.41	-5179.31	-962.74	5172.46

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Closure Azm	DLS/ 100	BUR/ 100'
34	3,617	8.34	281.34	3599.35	87.92	-293.42	-89.97	306.31	286.68	2.32	2.06
35	3,711	9.22	280.23	3692.25	90.60	-307.51	-92.75	320.58	286.42	0.95	0.94
36	3,805	9.10	280.47	3785.05	93.29	-322.23	-95.54	335.46	286.15	0.13	-0.13
37	3,900	8.54	280.46	3878.92	95.94	-336.56	-98.28	349.96	285.91	0.59	-0.59
38	3,994	7.82	280.39	3971.97	98.36	-349.71	-100.79	363.28	285.71	0.77	-0.77
39	4,089	7.69	278.61	4066.10	100.47	-362.35	-103.00	376.02	285.50	0.29	-0.14
40	4,184	7.09	276.52	4160.31	102.09	-374.46	-104.70	388.13	285.25	0.69	-0.63
41	4,278	6.10	274.08	4253.69	103.10	-385.21	-105.79	398.77	284.98	1.09	-1.05
42	4,373	6.52	286.60	4348.11	105.00	-395.41	-107.76	409.11	284.87	1.51	0.44
43	4,468	6.88	290.09	4442.47	108.50	-405.92	-111.33	420.17	284.96	0.57	0.38
44	4,562	6.34	291.51	4535.84	112.34	-416.04	-115.24	430.94	285.11	0.60	-0.57
45	4,657	5.70	290.85	4630.32	115.94	-425.33	-118.91	440.85	285.25	0.68	-0.67
46	4,776	5.37	291.94	4748.76	120.12	-436.02	-123.16	452.26	285.40	0.29	-0.28
47	4,852	4.97	286.48	4824.45	122.39	-442.47	-125.47	459.08	285.46	0.83	-0.53
48	4,947	8.32	289.87	4918.80	125.89	-452.88	-129.05	470.06	285.53	3.55	3.53
49	5,042	8.92	290.39	5012.73	130.79	-466.25	-134.04	484.25	285.67	0.64	0.63
50	5,136	8.99	290.97	5105.58	135.96	-479.94	-139.31	498.83	285.82	0.12	0.07
51	5,230	8.60	289.22	5198.48	140.90	-493.44	-144.34	513.16	285.94	0.50	-0.41
52	5,324	8.24	288.06	5291.46	145.30	-506.48	-148.84	526.91	286.01	0.42	-0.38
53	5,418	8.17	287.95	5384.50	149.45	-519.23	-153.07	540.31	286.06	0.08	-0.07
54	5,513	8.06	287.81	5478.55	153.57	-532.00	-157.28	553.72	286.10	0.12	-0.12
55	5,607	7.56	286.09	5571.68	157.30	-544.21	-161.09	566.49	286.12	0.59	-0.53
56	5,702	7.16	284.38	5665.89	160.50	-555.95	-164.38	578.66	286.10	0.48	-0.42
57	5,797	6.90	283.53	5760.18	163.31	-567.23	-167.26	590.27	286.06	0.29	-0.27
58	5,891	6.75	283.34	5853.51	165.90	-578.10	-169.93	601.43	286.01	0.16	-0.16
59	5,986	6.51	281.95	5947.88	168.30	-588.80	-172.41	612.38	285.95	0.30	-0.25
60	6,081	6.59	280.62	6042.26	170.42	-599.43	-174.60	623.18	285.87	0.18	0.08
61	6,176	6.58	281.89	6136.63	172.55	-610.11	-176.81	634.04	285.79	0.15	-0.01
62	6,270	6.48	282.38	6230.02	174.80	-620.56	-179.12	644.71	285.73	0.12	-0.11
63	6,365	6.53	282.75	6324.41	177.14	-631.07	-181.54	655.46	285.68	0.07	0.05
64	6,459	7.82	287.04	6417.67	180.19	-642.40	-184.67	667.19	285.67	1.49	1.37
65	6,553	7.65	285.89	6510.82	183.78	-654.53	-188.34	679.84	285.68	0.24	-0.18
66	6,648	7.25	282.52	6605.02	186.81	-666.46	-191.46	692.15	285.66	0.62	-0.42
67	6,742	6.91	280.69	6698.30	189.14	-677.81	-193.87	703.70	285.59	0.43	-0.36

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V09.04.02

SURVEY CALCULATION PROGRAM

9/7/18 11:46

Company:	ConocoPhillips Company
Well Name:	Zia Hills 25E FED COM 404H - Original Wellbore
Location:	Lea County, NM
Rig:	Nabors #891
Job Number:	DDMO-180601
API #:	30-025-43363
Vertical Section Azimuth:	179.60
Survey Calculation Method:	Minimum Curvature

Magnetic Declination:	6.54	REFERENCED TO GRID NORTH	
Proposed Direction:	179.60		

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	15,793	90.31	182.61	10634.41	-5179.31	-962.74	5172.46

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Closure Azm	DLS/ 100	BUR/ 100'
68	6,835	9.18	287.94	6790.38	192.47	-690.36	-197.28	716.69	285.58	2.67	2.44
69	6,929	8.93	288.11	6883.21	197.05	-704.43	-201.96	731.47	285.63	0.27	-0.27
70	7,024	8.87	287.56	6977.07	201.55	-718.42	-206.56	746.16	285.67	0.11	-0.06
71	7,118	8.66	285.95	7069.97	205.68	-732.14	-210.78	760.48	285.69	0.34	-0.22
72	7,213	8.36	286.27	7163.92	209.58	-745.64	-214.78	774.54	285.70	0.32	-0.32
73	7,308	7.47	285.30	7258.02	213.14	-758.23	-218.43	787.62	285.70	0.95	-0.94
74	7,402	6.85	278.92	7351.28	215.62	-769.66	-220.99	799.30	285.65	1.07	-0.66
75	7,496	7.92	288.36	7444.51	218.53	-781.35	-223.98	811.33	285.63	1.72	1.14
76	7,591	7.24	288.09	7538.68	222.45	-793.25	-227.99	823.85	285.67	0.72	-0.72
77	7,686	6.52	288.83	7632.99	226.05	-804.04	-231.66	835.22	285.70	0.76	-0.76
78	7,780	6.42	287.76	7726.39	229.38	-814.10	-235.06	845.80	285.74	0.17	-0.11
79	7,875	6.31	286.76	7820.81	232.50	-824.16	-238.25	856.33	285.75	0.16	-0.12
80	7,969	5.95	287.07	7914.27	235.42	-833.76	-241.24	866.36	285.77	0.38	-0.38
81	8,064	5.74	285.34	8008.78	238.13	-843.05	-244.01	876.04	285.77	0.29	-0.22
82	8,158	6.66	287.48	8102.22	241.01	-852.78	-246.96	886.18	285.78	1.01	0.98
83	8,252	6.52	288.28	8195.60	244.32	-863.05	-250.34	896.96	285.81	0.18	-0.15
84	8,346	7.89	291.23	8288.86	248.33	-874.13	-254.43	908.72	285.86	1.51	1.46
85	8,440	7.64	291.28	8382.00	252.93	-885.97	-259.11	921.37	285.93	0.27	-0.27
86	8,534	6.94	290.42	8475.24	257.18	-897.11	-263.44	933.25	286.00	0.75	-0.74
87	8,628	6.35	288.15	8568.61	260.78	-907.37	-267.11	944.11	286.03	0.69	-0.63
88	8,723	7.48	292.86	8662.91	264.82	-918.07	-271.23	955.50	286.09	1.33	1.19
89	8,817	7.09	293.59	8756.15	269.52	-929.02	-276.00	967.33	286.18	0.43	-0.41
90	8,911	6.12	290.86	8849.53	273.63	-939.02	-280.18	978.07	286.25	1.08	-1.03
91	9,006	4.83	288.91	8944.09	276.73	-947.53	-283.33	987.12	286.28	1.37	-1.36
92	9,100	4.28	279.70	9037.80	278.60	-954.74	-285.26	994.55	286.27	0.97	-0.59
93	9,195	3.95	270.93	9132.55	279.25	-961.50	-285.96	1001.23	286.19	0.75	-0.35
94	9,289	3.81	264.73	9226.34	279.02	-967.85	-285.77	1007.26	286.08	0.47	-0.15
95	9,383	3.09	291.24	9320.17	279.65	-973.32	-286.44	1012.70	286.03	1.84	-0.77
96	9,476	1.69	300.77	9413.09	281.26	-976.84	-288.07	1016.52	286.06	1.56	-1.51
97	9,571	1.19	310.57	9508.06	282.61	-978.79	-289.44	1018.77	286.11	0.58	-0.53
98	9,665	1.26	286.11	9602.04	283.54	-980.52	-290.37	1020.69	286.13	0.56	0.07
99	9,760	0.83	267.31	9697.02	283.79	-982.21	-290.64	1022.39	286.12	0.57	-0.45
100	9,854	1.14	282.34	9791.01	283.96	-983.81	-290.82	1023.97	286.10	0.43	0.33
101	9,966	5.02	206.82	9902.85	279.82	-987.11	-286.71	1026.00	285.83	4.34	3.46

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SURVEY CALCULATION PROGRAM

9/7/18 11:46

Company:	ConocoPhillips Company
Well Name:	Zia Hills 25E FED COM 404H - Original Wellbore
Location:	Lea County, NM
Rig:	Nabors #891
Job Number:	DDMO-180601
API #:	30-025-43363
Vertical Section Azimuth:	179.60
Survey Calculation Method:	Minimum Curvature

Magnetic Declination: 6.54 REFERENCED TO GRID NORTH

Proposed Direction: 179.60

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	15,793	90.31	182.61	10634.41	-5179.31	-962.74	5172.46

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Closure Azm	DLS/ 100	BUR/ 100'
102	10,013	10.47	196.01	9949.41	273.88	-989.22	-280.78	1026.43	285.48	11.95	11.60
103	10,061	13.18	193.70	9996.38	264.37	-991.72	-271.29	1026.35	284.93	5.73	5.65
104	10,108	18.28	187.84	10041.61	251.85	-993.99	-258.79	1025.40	284.22	11.35	10.85
105	10,155	22.70	182.66	10085.63	235.48	-995.42	-242.43	1022.89	283.31	10.16	9.40
106	10,202	27.45	178.58	10128.19	215.58	-995.57	-222.53	1018.64	282.22	10.75	10.11
107	10,248	29.66	175.96	10168.60	193.62	-994.51	-200.56	1013.18	281.02	5.52	4.80
108	10,295	32.68	176.71	10208.81	169.35	-992.96	-176.28	1007.30	279.68	6.48	6.43
109	10,343	35.82	178.32	10248.48	142.37	-991.80	-149.29	1001.97	278.17	6.81	6.54
110	10,390	40.44	179.00	10285.44	113.36	-991.13	-120.28	997.59	276.52	9.87	9.83
111	10,435	45.75	179.84	10318.29	82.63	-990.83	-89.55	994.27	274.77	11.87	11.80
112	10,482	47.78	178.45	10350.48	48.40	-990.32	-55.31	991.50	272.80	4.83	4.32
113	10,528	48.01	178.67	10381.33	14.28	-989.46	-21.19	989.56	270.83	0.61	0.50
114	10,575	51.65	180.78	10411.64	-21.63	-989.30	14.72	989.54	268.75	8.47	7.74
115	10,620	53.41	181.57	10439.01	-57.33	-990.04	50.42	991.70	266.69	4.15	3.91
116	10,667	52.72	181.67	10467.26	-94.88	-991.10	87.96	995.63	264.53	1.48	-1.47
117	10,713	54.20	180.11	10494.65	-131.83	-991.67	124.91	1000.39	262.43	4.22	3.22
118	10,760	60.09	180.69	10520.13	-171.30	-991.95	164.37	1006.63	260.20	12.57	12.53
119	10,806	64.96	181.26	10541.35	-212.09	-992.65	205.16	1015.06	257.94	10.64	10.59
120	10,853	65.48	179.93	10561.05	-254.76	-993.09	247.82	1025.25	255.61	2.80	1.11
121	10,899	67.01	179.22	10579.58	-296.86	-992.78	289.92	1036.21	253.35	3.61	3.33
122	10,946	69.71	178.09	10596.91	-340.53	-991.75	333.60	1048.58	251.05	6.16	5.74
123	10,990	72.81	178.57	10611.04	-382.18	-990.54	375.25	1061.71	248.90	7.12	7.05
124	11,037	76.00	178.87	10623.68	-427.43	-989.53	420.51	1077.89	246.64	6.82	6.79
125	11,084	81.09	180.56	10633.01	-473.47	-989.30	466.56	1096.77	244.42	11.39	10.83
126	11,131	84.19	179.10	10639.03	-520.08	-989.16	513.16	1117.55	242.27	7.28	6.60
127	11,178	85.66	179.38	10643.19	-566.89	-988.54	559.97	1139.55	240.17	3.18	3.13
128	11,225	86.45	179.11	10646.42	-613.77	-987.92	606.86	1163.06	238.15	1.78	1.68
129	11,272	88.42	178.31	10648.52	-660.71	-986.87	653.81	1187.62	236.20	4.52	4.19
130	11,366	88.73	178.16	10650.86	-754.64	-983.97	747.75	1240.03	232.51	0.37	0.33
131	11,461	89.36	178.09	10652.45	-849.57	-980.87	842.71	1297.64	229.10	0.67	0.66
132	11,555	89.22	178.41	10653.61	-943.52	-977.99	936.67	1358.94	226.03	0.37	-0.15
133	11,649	89.80	178.38	10654.41	-1037.48	-975.36	1030.65	1423.97	223.23	0.62	0.62
134	11,743	88.88	177.76	10655.50	-1131.42	-972.20	1124.61	1491.74	220.67	1.18	-0.98
135	11,838	88.51	178.12	10657.66	-1226.33	-968.78	1219.54	1562.83	218.31	0.54	-0.39

MS Directional
V09.04.02

SURVEY CALCULATION PROGRAM

9/7/18 11:46

Company:	ConocoPhillips Company
Well Name:	Zia Hills 25E FED COM 404H - Original Wellbore
Location:	Lea County, NM
Rig:	Nabors #891
Job Number:	DDMO-180601
API #:	30-025-43363
Vertical Section Azimuth:	179.60
Survey Calculation Method:	Minimum Curvature

Magnetic Declination: 6.54 REFERENCED TO GRID NORTH

Proposed Direction: 179.60

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	15,793	90.31	182.61	10634.41	-5179.31	-962.74	5172.46

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Closure Azm	DLS/ 100	BUR/ 100'
136	11,963	89.85	180.49	10659.45	-1351.30	-967.27	1344.52	1661.81	215.60	2.18	1.07
137	12,057	89.72	180.81	10659.80	-1445.29	-968.33	1438.50	1739.70	213.82	0.37	-0.14
138	12,152	92.47	181.46	10657.99	-1540.25	-970.21	1533.44	1820.35	212.21	2.97	2.89
139	12,246	92.60	181.00	10653.83	-1634.13	-972.23	1627.31	1901.48	210.75	0.51	0.14
140	12,340	91.85	181.35	10650.18	-1728.04	-974.16	1721.20	1983.71	209.41	0.88	-0.80
141	12,435	89.66	180.68	10648.93	-1823.01	-975.84	1816.16	2067.76	208.16	2.41	-2.31
142	12,529	88.54	180.72	10650.40	-1916.99	-976.99	1910.13	2151.60	207.01	1.19	-1.19
143	12,624	88.32	180.79	10653.01	-2011.95	-978.24	2005.07	2237.16	205.93	0.24	-0.23
144	12,718	88.16	180.24	10655.89	-2105.90	-979.08	2099.01	2322.37	204.93	0.61	-0.17
145	12,813	87.53	179.85	10659.47	-2200.83	-979.16	2193.94	2408.82	203.98	0.78	-0.66
146	12,908	88.89	179.27	10662.43	-2295.78	-978.43	2288.89	2495.58	203.08	1.56	1.43
147	13,002	91.78	179.28	10661.88	-2389.76	-977.24	2382.88	2581.85	202.24	3.07	3.07
148	13,097	93.08	179.54	10657.86	-2484.67	-976.26	2477.79	2669.58	201.45	1.40	1.37
149	13,191	92.77	179.10	10653.06	-2578.54	-975.15	2571.67	2756.77	200.72	0.57	-0.33
150	13,285	92.48	178.90	10648.75	-2672.43	-973.51	2665.57	2844.22	200.02	0.37	-0.31
151	13,380	90.50	179.40	10646.28	-2767.38	-972.10	2760.53	2933.15	199.35	2.15	-2.08
152	13,474	90.69	179.37	10645.31	-2861.37	-971.09	2854.52	3021.66	198.75	0.20	0.20
153	13,569	90.08	178.73	10644.67	-2956.35	-969.52	2949.51	3111.27	198.16	0.93	-0.64
154	13,663	90.45	178.55	10644.24	-3050.33	-967.28	3043.50	3200.02	197.59	0.44	0.39
155	13,758	90.43	178.30	10643.51	-3145.29	-964.67	3138.48	3289.90	197.05	0.26	-0.02
156	13,852	90.80	177.74	10642.50	-3239.22	-961.43	3232.43	3378.89	196.53	0.71	0.39
157	13,947	90.45	177.77	10641.46	-3334.15	-957.71	3327.38	3468.97	196.03	0.37	-0.37
158	14,041	89.99	177.72	10641.10	-3428.07	-954.01	3421.33	3558.34	195.55	0.49	-0.49
159	14,135	89.90	177.92	10641.19	-3522.00	-950.43	3515.28	3647.99	195.10	0.23	-0.10
160	14,230	89.45	178.02	10641.73	-3616.94	-947.07	3610.24	3738.88	194.67	0.49	-0.47
161	14,324	89.19	178.59	10642.84	-3710.89	-944.29	3704.21	3829.15	194.28	0.67	-0.28
162	14,418	89.47	179.01	10643.94	-3804.87	-942.32	3798.20	3919.82	193.91	0.54	0.30
163	14,513	88.69	178.47	10645.47	-3899.83	-940.23	3893.17	4011.57	193.56	1.00	-0.82
164	14,608	90.49	180.83	10646.15	-3994.82	-939.65	3988.16	4103.84	193.24	3.12	1.89
165	14,702	90.78	180.63	10645.11	-4088.80	-940.85	4082.13	4195.65	192.96	0.37	0.31
166	14,797	91.43	181.14	10643.27	-4183.77	-942.31	4177.09	4288.58	192.69	0.87	0.68
167	14,891	91.16	180.85	10641.15	-4277.73	-943.94	4271.04	4380.64	192.44	0.42	-0.29
168	14,985	91.54	180.54	10638.94	-4371.70	-945.08	4365.00	4472.69	192.20	0.52	0.40
169	15,080	91.79	180.45	10636.18	-4466.66	-945.91	4459.94	4565.72	191.96	0.28	0.26

MS Directional
V09.04.02

SURVEY CALCULATION PROGRAM

9/7/18 11:46

Company:	ConocoPhillips Company				
Well Name:	Zia Hills 25E FED COM 404H - Original Wellbore				
Location:	Lea County, NM				
Rig:	Nabors #891	Magnetic Declination:	6.54	REFERENCED TO GRID NORTH	
Job Number:	DDMO-180601				
API #:	30-025-43363				
Vertical Section Azimuth:	179.60	Proposed Direction:	179.60		
Survey Calculation Method:	Minimum Curvature				

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	15,793	90.31	182.61	10634.41	-5179.31	-962.74	5172.46

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Closure Azm	DLS/ 100	BUR/ 100'
170	15,174	90.31	179.09	10634.45	-4560.64	-945.53	4553.92	4657.62	191.71	2.14	-1.57
171	15,268	89.23	181.58	10634.83	-4654.62	-946.08	4647.91	4749.80	191.49	2.89	-1.15
172	15,363	88.52	181.51	10636.70	-4749.57	-948.64	4742.83	4843.38	191.30	0.75	-0.75
173	15,458	90.69	181.48	10637.35	-4844.53	-951.12	4837.77	4937.01	191.11	2.28	2.28
174	15,552	90.37	181.69	10636.48	-4938.49	-953.72	4931.71	5029.74	190.93	0.41	-0.34
175	15,647	90.74	181.89	10635.56	-5033.44	-956.68	5026.64	5123.55	190.76	0.44	0.39
176	15,742	90.31	182.61	10634.69	-5128.36	-960.41	5121.53	5217.52	190.61	0.88	-0.45
PTB:	15,793	90.31	182.61	10634.41	-5179.31	-962.74	5172.46	5268.03	190.53	0.00	0.00

MS Directional
V09.04.02

SURVEY CALCULATION PROGRAM

9/7/18 11:42

Company:	ConocoPhillips Company
Well Name:	Zia Hills 25E FED COM 404H - Sidetrack
Location:	Lea County, NM
Rig:	Nabors #891
Job Number:	DDMO-180601
API #:	30-025-43363
Vertical Section Azimuth:	179.60
Survey Calculation Method:	Minimum Curvature

Magnetic Declination:	6.53
Proposed Direction:	179.60

REFERENCED TO GRID NORTH

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	17,771	91.87	178.65	10625.11	-7156.3	-949.28	7149.5

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Closure Azm	DLS/ 100	BUR/ 100'
TIE IN	9,760	0.83	267.31	9697.02	283.79	-982.21		1022.39	286.12		
1	9,809	6.56	1.51	9745.91	286.57	-982.49	-293.43	1023.43	286.26	13.62	11.69
2	9,871	5.61	353.49	9807.56	293.13	-982.74	-299.98	1025.53	286.61	2.05	-1.53
3	9,918	3.10	285.87	9854.45	295.76	-984.23	-302.62	1027.70	286.73	11.22	-5.34
4	9,966	5.35	208.49	9902.35	294.14	-986.54	-301.02	1029.46	286.60	11.59	4.69
5	10,013	9.65	183.04	9948.95	288.28	-987.80	-295.17	1029.00	286.27	11.35	9.15
6	10,060	14.75	188.49	9994.87	278.42	-988.89	-285.32	1027.34	285.72	11.11	10.85
7	10,107	19.21	192.59	10039.81	264.95	-991.46	-271.87	1026.25	284.96	9.82	9.49
8	10,155	24.05	192.50	10084.42	247.69	-995.30	-254.63	1025.66	283.97	10.08	10.08
9	10,202	28.81	191.38	10126.49	227.22	-999.61	-234.19	1025.11	282.81	10.18	10.13
10	10,248	32.66	188.86	10166.03	204.08	-1003.71	-211.08	1024.25	281.49	8.82	8.37
11	10,295	36.22	185.82	10204.79	177.73	-1007.07	-184.75	1022.64	280.01	8.41	7.57
12	10,342	39.89	183.06	10241.79	148.85	-1009.29	-155.89	1020.21	278.39	8.61	7.81
13	10,389	42.62	180.76	10277.12	117.88	-1010.30	-124.93	1017.16	276.66	6.64	5.81
14	10,434	45.29	179.82	10309.52	86.65	-1010.46	-93.70	1014.16	274.90	6.11	5.93
15	10,481	48.30	176.58	10341.69	52.42	-1009.36	-59.47	1010.72	272.97	8.14	6.40
16	10,527	49.81	174.66	10371.84	17.78	-1006.70	-24.81	1006.85	271.01	4.55	3.28
17	10,574	51.53	175.17	10401.63	-18.43	-1003.48	11.42	1003.65	268.95	3.75	3.66
18	10,619	54.33	175.78	10428.75	-54.22	-1000.65	47.23	1002.11	266.90	6.32	6.22
19	10,665	58.10	176.88	10454.33	-92.36	-998.21	85.39	1002.47	264.71	8.43	8.20
20	10,712	61.09	176.47	10478.11	-132.83	-995.86	125.87	1004.67	262.40	6.41	6.36
21	10,757	63.19	175.11	10499.14	-172.50	-992.93	165.56	1007.80	260.14	5.38	4.67
22	10,804	65.47	174.15	10519.50	-214.67	-988.96	207.76	1011.99	257.75	5.19	4.85
23	10,850	67.11	174.20	10537.99	-256.57	-984.69	249.69	1017.57	255.40	3.57	3.57
24	10,897	67.50	174.26	10556.13	-299.71	-980.33	292.86	1025.12	253.00	0.84	0.83
25	10,941	68.04	175.04	10572.77	-340.26	-976.53	333.44	1034.11	250.79	2.05	1.23
26	10,988	69.62	177.15	10589.75	-383.98	-973.55	377.18	1046.54	248.48	5.37	3.36
27	11,036	70.53	179.29	10606.11	-429.08	-972.15	422.29	1062.64	246.18	4.60	1.90
28	11,083	73.31	180.60	10620.69	-473.76	-972.11	466.96	1081.41	244.02	6.48	5.91
29	11,130	76.15	180.96	10633.07	-519.09	-972.73	512.29	1102.57	241.91	6.09	6.04
30	11,177	81.92	180.79	10642.01	-565.21	-973.44	558.40	1125.63	239.86	12.28	12.28
31	11,213	86.46	180.58	10645.65	-601.01	-973.86	594.20	1144.39	238.32	12.62	12.61
32	11,307	89.40	177.09	10649.05	-694.90	-971.95	688.10	1194.81	234.44	4.85	3.13
33	11,401	90.03	177.08	10649.51	-788.78	-967.17	782.01	1248.04	230.80	0.67	0.67

MS Directional

V09.04.02

SURVEY CALCULATION PROGRAM

9/7/18 11:42

Company:	ConocoPhillips Company		
Well Name:	Zia Hills 25E FED COM 404H - Sidetrack		
Location:	Lea County, NM		
Rig:	Nabors #891	Magnetic Declination:	6.53
Job Number:	DDMO-180601		
API #:	30-025-43363		
Vertical Section Azimuth:	179.60	Proposed Direction:	179.60
Survey Calculation Method:	Minimum Curvature		

REFERENCED TO GRID NORTH

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	17,771	91.87	178.65	10625.11	-7156.3	-949.28	7149.5

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Closure Azm	DLS/ 100	BUR/ 100'
34	11,496	91.15	177.17	10648.54	-883.65	-962.41	876.91	1306.55	227.44	1.18	1.18
35	11,589	88.77	177.41	10648.60	-976.54	-958.01	969.83	1368.00	224.45	2.57	-2.56
36	11,684	89.28	178.29	10650.22	-1071.46	-954.45	1064.77	1434.92	221.69	1.07	0.54
37	11,778	89.75	178.43	10651.01	-1165.42	-951.76	1158.75	1504.67	219.24	0.52	0.50
38	11,873	90.38	178.74	10650.90	-1260.39	-949.41	1253.73	1577.96	216.99	0.74	0.66
39	11,967	88.41	178.44	10651.90	-1354.35	-947.10	1347.71	1652.65	214.97	2.12	-2.10
40	12,061	88.68	178.52	10654.28	-1448.29	-944.61	1441.66	1729.11	213.11	0.30	0.29
41	12,156	88.67	178.37	10656.48	-1543.23	-942.03	1536.61	1808.03	211.40	0.16	-0.01
42	12,250	89.72	179.85	10657.80	-1637.20	-940.57	1630.60	1888.15	209.88	1.93	1.12
43	12,345	89.76	180.63	10658.23	-1732.20	-940.97	1725.59	1971.28	208.51	0.82	0.04
44	12,439	89.98	180.97	10658.45	-1826.19	-942.28	1819.57	2054.96	207.29	0.43	0.23
45	12,534	90.30	181.75	10658.21	-1921.16	-944.53	1914.52	2140.80	206.18	0.89	0.34
46	12,628	90.69	182.04	10657.40	-2015.11	-947.64	2008.44	2226.81	205.19	0.52	0.41
47	12,723	89.43	179.70	10657.30	-2110.09	-949.08	2103.41	2313.71	204.22	2.80	-1.33
48	12,818	89.39	180.03	10658.28	-2205.08	-948.86	2198.41	2400.57	203.28	0.35	-0.04
49	12,912	91.70	179.40	10657.39	-2299.07	-948.39	2292.39	2487.00	202.42	2.55	2.46
50	13,007	92.56	179.73	10653.86	-2394.00	-947.67	2387.33	2574.75	201.60	0.97	0.91
51	13,101	89.98	178.81	10651.77	-2487.96	-946.47	2481.29	2661.91	200.83	2.91	-2.74
52	13,195	89.61	178.36	10652.11	-2581.93	-944.15	2575.28	2749.15	200.09	0.62	-0.39
53	13,290	91.05	180.41	10651.56	-2676.92	-943.13	2670.27	2838.20	199.41	2.64	1.52
54	13,384	92.08	181.06	10648.99	-2770.87	-944.34	2764.21	2927.37	198.82	1.30	1.10
55	13,479	89.31	180.58	10647.84	-2865.85	-945.70	2859.17	3017.85	198.26	2.96	-2.92
56	13,573	90.01	180.32	10648.40	-2959.84	-946.44	2953.16	3107.48	197.73	0.79	0.74
57	13,668	91.29	180.35	10647.32	-3054.83	-946.99	3048.15	3198.25	197.22	1.35	1.35
58	13,762	90.18	180.49	10646.12	-3148.82	-947.68	3142.13	3288.34	196.75	1.19	-1.18
59	13,857	90.55	180.49	10645.51	-3243.81	-948.49	3237.11	3379.64	196.30	0.39	0.39
60	13,951	90.39	179.82	10644.74	-3337.81	-948.75	3331.11	3470.03	195.87	0.73	-0.17
61	14,045	88.52	179.76	10645.63	-3431.80	-948.40	3425.10	3560.44	195.45	1.99	-1.99
62	14,140	88.32	179.79	10648.25	-3526.76	-948.03	3520.06	3651.96	195.05	0.21	-0.21
63	14,234	88.52	180.05	10650.85	-3620.73	-947.90	3614.02	3742.75	194.67	0.35	0.21
64	14,328	90.29	180.31	10651.82	-3714.72	-948.19	3708.01	3833.82	194.32	1.90	1.88
65	14,416	94.07	178.85	10648.47	-3802.64	-947.55	3795.93	3918.91	193.99	4.60	4.30
66	14,510	92.07	180.43	10643.44	-3896.49	-946.96	3889.78	4009.91	193.66	2.71	-2.13
67	14,604	90.24	180.38	10641.55	-3990.47	-947.63	3983.75	4101.44	193.36	1.95	-1.95

MS Directional
V09.04.02

SURVEY CALCULATION PROGRAM

9/7/18 11:42

Company:	ConocoPhillips Company		
Well Name:	Zia Hills 25E FED COM 404H - Sidetrack		
Location:	Lea County, NM		
Rig:	Nabors #891	Magnetic Declination:	6.53
Job Number:	DDMO-180601		
API #:	30-025-43363		
Vertical Section Azimuth:	179.60	Proposed Direction:	179.60
Survey Calculation Method:	Minimum Curvature		

REFERENCED TO GRID NORTH

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	17,771	91.87	178.65	10625.11	-7156.3	-949.28	7149.6

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Closure Azm	DLS/ 100	BUR/ 100'
68	14,699	90.99	180.35	10640.53	-4085.46	-948.23	4078.74	4194.06	193.07	0.79	0.79
69	14,793	89.99	180.66	10639.72	-4179.45	-949.06	4172.72	4285.85	192.79	1.11	-1.06
70	14,888	89.34	180.28	10640.28	-4274.44	-949.84	4267.71	4378.71	192.53	0.79	-0.68
71	14,982	89.50	180.03	10641.23	-4368.44	-950.09	4361.70	4470.56	192.27	0.32	0.17
72	15,077	89.41	180.15	10642.13	-4463.43	-950.24	4456.69	4563.46	192.02	0.16	-0.09
73	15,171	91.55	181.70	10641.34	-4557.41	-951.76	4550.65	4655.73	191.80	2.81	2.28
74	15,265	91.92	182.28	10638.50	-4651.31	-955.02	4644.53	4748.34	191.60	0.73	0.39
75	15,360	92.27	181.66	10635.03	-4746.19	-958.29	4739.38	4841.96	191.41	0.75	0.37
76	15,455	90.97	181.72	10632.34	-4841.11	-961.09	4834.28	4935.59	191.23	1.37	-1.37
77	15,549	89.22	181.27	10632.18	-4935.07	-963.54	4928.22	5028.25	191.05	1.92	-1.86
78	15,644	89.54	181.17	10633.21	-5030.04	-965.56	5023.18	5121.88	190.87	0.35	0.34
79	15,739	89.07	180.06	10634.36	-5125.03	-966.58	5118.16	5215.38	190.68	1.27	-0.49
80	15,833	89.57	180.46	10635.48	-5219.02	-967.01	5212.14	5307.85	190.50	0.68	0.53
81	15,927	89.03	180.63	10636.63	-5313.01	-967.90	5306.12	5400.46	190.32	0.60	-0.57
82	16,021	89.61	180.34	10637.74	-5407.00	-968.70	5400.11	5493.09	190.16	0.69	0.62
83	16,116	91.54	180.93	10636.79	-5501.98	-969.75	5495.08	5586.79	190.00	2.12	2.03
84	16,210	91.62	180.75	10634.20	-5595.94	-971.13	5589.02	5679.58	189.85	0.21	0.09
85	16,304	91.53	180.46	10631.62	-5689.90	-972.12	5682.97	5772.34	189.70	0.32	-0.10
86	16,399	89.58	180.76	10630.70	-5784.88	-973.13	5777.95	5866.16	189.55	2.08	-2.05
87	16,494	89.60	181.98	10631.38	-5879.85	-975.40	5872.90	5960.21	189.42	1.28	0.02
88	16,588	90.17	179.69	10631.56	-5973.83	-976.77	5966.87	6053.16	189.29	2.51	0.61
89	16,682	91.38	178.21	10630.29	-6067.81	-975.05	6060.85	6145.65	189.13	2.03	1.29
90	16,777	92.28	178.50	10627.26	-6162.72	-972.32	6155.78	6238.95	188.97	1.00	0.95
91	16,871	91.31	178.64	10624.31	-6256.64	-969.98	6249.72	6331.38	188.81	1.04	-1.03
92	16,965	89.10	178.77	10623.98	-6350.61	-967.86	6343.70	6423.94	188.67	2.36	-2.35
93	17,059	89.69	179.24	10624.97	-6444.59	-966.22	6437.69	6516.62	188.53	0.80	0.63
94	17,154	88.77	178.45	10626.25	-6539.56	-964.31	6532.67	6610.28	188.39	1.28	-0.97
95	17,248	89.10	178.50	10627.99	-6633.51	-961.81	6626.63	6702.88	188.25	0.36	0.35
96	17,343	89.43	178.38	10629.21	-6728.47	-959.22	6721.61	6796.50	188.11	0.37	0.35
97	17,437	90.79	178.85	10629.03	-6822.44	-956.95	6815.59	6889.22	187.98	1.53	1.45
98	17,532	90.08	178.64	10628.31	-6917.41	-954.87	6910.58	6983.01	187.86	0.78	-0.75
99	17,627	89.96	178.68	10628.28	-7012.39	-952.65	7005.56	7076.80	187.74	0.13	-0.13
100	17,719	91.87	178.65	10626.81	-7104.34	-950.50	7097.54	7167.65	187.62	2.08	2.08
PTB:	17,771	91.87	178.65	10625.11	-7156.30	-949.28	7149.50	7218.99	187.56	0.00	0.00