



PHOENIX
TECHNOLOGY SERVICES

HOBBS OCD
AUG 02 2019
RECEIVED

COG Operating LLC

Lea County, NM (NAD27 NME)

Little Bear Federal Com

5H

OH / 63526

Survey: Phoenix MWD Surveys

Standard Survey Report

23 October, 2018





Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 5H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3831.50usft (Ensign 155)
Site:	Little Bear Federal Com	MD Reference:	RKB @ 3831.50usft (Ensign 155)
Well:	5H	North Reference:	Grid
Wellbore:	OH / 63526	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Ensign 155)	Database:	USA Compass

Project	Lea County, NM (NAD27 NME)		
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	Little Bear Federal Com				
Site Position:		Northing:	555,243.20 usft	Latitude:	32° 31' 26.81346 N
From:	Map	Easting:	737,377.40 usft	Longitude:	103° 33' 47.46075 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well	5H					
Well Position	+N/-S	0.00 usft	Northing:	554,915.40 usft	Latitude:	32° 31' 23.71516 N
	+E/-W	0.00 usft	Easting:	735,337.10 usft	Longitude:	103° 34' 11.31681 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,807.50 usft	

Wellbore	OH / 63526				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	9/11/2018	6.71	60.43	48,196.89785853

Design	Surveys (Ensign 155)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	353.66	

Survey Program	Date	10/23/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	10,761.00	Scientific Gyros (OH / 63526)	Scientific Keeper	Scientific Drilling Intl. Standard Wireline Keeper
10,797.00	18,797.00	Phoenix MWD Surveys (OH / 63526)	MWD+HDGM	OWSG Rev.2 MWD + HDGM

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)
10,761.00	1.64	206.10	10,734.63	-240.02	-517.08	-181.45	0.00	0.00	0.00
Tie In									
10,797.00	0.56	120.42	10,770.62	-240.57	-517.15	-181.99	4.70	-3.00	-238.00
First Phoenix MWD Survey									
10,815.00	0.68	94.23	10,788.62	-240.62	-516.97	-182.06	1.69	0.67	-145.50
10,905.00	1.73	11.27	10,878.61	-239.33	-516.17	-180.87	1.98	1.17	-92.18
10,952.00	8.22	344.16	10,925.41	-235.40	-516.95	-176.87	14.31	13.81	-57.68
10,999.00	14.35	343.80	10,971.48	-226.56	-519.50	-167.81	13.04	13.04	-0.77
11,046.00	20.77	341.28	11,016.26	-213.06	-523.80	-153.92	13.75	13.66	-5.36



Survey Report



Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Little Bear Federal Com
Well: 5H
Wellbore: OH / 63526
Design: Surveys (Ensign 155)

Local Co-ordinate Reference: Well 5H
TVD Reference: RKB @ 3831.50usft (Ensign 155)
MD Reference: RKB @ 3831.50usft (Ensign 155)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: USA Compass

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)
13,657.00	92.21	359.24	11,350.92	2,202.79	-769.29	2,274.27	0.70	-0.66	-0.23
13,751.00	91.06	358.92	11,348.24	2,296.74	-770.80	2,367.81	1.27	-1.22	-0.34
13,844.00	90.03	358.01	11,347.36	2,389.70	-773.29	2,460.48	1.48	-1.11	-0.98
13,939.00	91.07	358.13	11,346.44	2,484.64	-776.49	2,555.19	1.10	1.09	0.13
14,033.00	92.99	358.10	11,343.11	2,578.52	-779.58	2,648.84	2.04	2.04	-0.03
14,128.00	95.10	358.19	11,336.41	2,673.23	-782.65	2,743.31	2.22	2.22	0.09
14,222.00	94.91	358.95	11,328.21	2,766.84	-784.98	2,836.61	0.83	-0.20	0.81
14,316.00	92.66	359.79	11,322.01	2,860.63	-786.01	2,929.93	2.55	-2.39	0.89
14,410.00	92.91	0.05	11,317.44	2,954.52	-786.14	3,023.26	0.38	0.27	0.28
14,504.00	94.26	1.07	11,311.56	3,048.32	-785.23	3,116.39	1.80	1.44	1.09
14,598.00	93.84	1.89	11,304.92	3,142.06	-782.81	3,209.28	0.98	-0.45	0.87
14,692.00	93.45	1.24	11,298.95	3,235.83	-780.24	3,302.20	0.81	-0.41	-0.69
14,786.00	92.77	1.09	11,293.85	3,329.67	-778.34	3,395.28	0.74	-0.72	-0.16
14,880.00	93.62	1.01	11,288.61	3,423.51	-776.62	3,488.33	0.91	0.90	-0.09
14,974.00	93.28	0.07	11,282.95	3,517.33	-775.73	3,581.48	1.06	-0.36	-1.00
15,068.00	94.43	359.64	11,276.63	3,611.12	-775.97	3,674.72	1.31	1.22	-0.46
15,162.00	94.57	358.85	11,269.26	3,704.82	-777.20	3,767.99	0.85	0.15	-0.84
15,256.00	93.17	358.32	11,262.91	3,798.57	-779.52	3,861.42	1.59	-1.49	-0.56
15,350.00	90.92	359.13	11,259.56	3,892.48	-781.61	3,954.99	2.54	-2.39	0.86
15,444.00	91.09	359.69	11,257.91	3,986.47	-782.58	4,048.50	0.62	0.18	0.60
15,538.00	90.25	0.40	11,256.81	4,080.46	-782.50	4,141.91	1.17	-0.89	0.76
15,632.00	90.48	0.95	11,256.21	4,174.45	-781.40	4,235.21	0.63	0.24	0.59
15,726.00	91.85	1.14	11,254.30	4,268.41	-779.68	4,328.40	1.47	1.46	0.20
15,820.00	91.82	0.16	11,251.29	4,362.36	-778.62	4,421.66	1.04	-0.03	-1.04
15,914.00	90.59	359.36	11,249.31	4,456.33	-779.01	4,515.10	1.56	-1.31	-0.85
16,008.00	90.64	359.26	11,248.30	4,550.32	-780.14	4,608.64	0.12	0.05	-0.11
16,101.00	92.02	359.51	11,246.15	4,643.29	-781.14	4,701.15	1.51	1.48	0.27
16,195.00	92.19	359.72	11,242.69	4,737.22	-781.77	4,794.58	0.29	0.18	0.22
16,289.00	90.67	359.99	11,240.35	4,831.19	-782.01	4,888.00	1.64	-1.62	0.29
16,383.00	89.83	359.86	11,239.94	4,925.19	-782.13	4,981.43	0.90	-0.89	-0.14
16,477.00	90.34	0.11	11,239.80	5,019.19	-782.16	5,074.86	0.60	0.54	0.27
16,570.00	91.79	0.06	11,238.07	5,112.17	-782.02	5,167.26	1.56	1.56	-0.05
16,654.00	92.21	359.91	11,235.14	5,196.12	-782.04	5,250.70	0.53	0.50	-0.18
16,747.00	91.60	359.05	11,232.05	5,289.06	-782.88	5,343.18	1.13	-0.66	-0.92
16,841.00	90.14	358.42	11,230.62	5,383.02	-784.96	5,436.78	1.69	-1.55	-0.67
16,935.00	89.97	358.22	11,230.53	5,476.98	-787.71	5,530.47	0.28	-0.18	-0.21
17,029.00	90.62	357.95	11,230.04	5,570.93	-790.86	5,624.19	0.75	0.69	-0.29
17,123.00	91.23	357.85	11,228.53	5,664.85	-794.30	5,717.92	0.66	0.65	-0.11
17,230.00	92.10	357.55	11,225.42	5,771.72	-798.59	5,824.61	0.86	0.81	-0.28
17,324.00	91.06	357.93	11,222.83	5,865.61	-802.30	5,918.33	1.18	-1.11	0.40
17,418.00	89.80	358.18	11,222.12	5,959.55	-805.49	6,012.05	1.37	-1.34	0.27
17,512.00	90.03	358.53	11,222.26	6,053.51	-808.19	6,105.74	0.45	0.24	0.37
17,606.00	90.22	358.82	11,222.06	6,147.49	-810.36	6,199.38	0.37	0.20	0.31



Survey Report



Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Little Bear Federal Com
Well: 5H
Wellbore: OH / 63526
Design: Surveys (Ensign 155)

Local Co-ordinate Reference: Well 5H
TVD Reference: RKB @ 3831.50usft (Ensign 155)
MD Reference: RKB @ 3831.50usft (Ensign 155)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: USA Compass

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)
17,699.00	90.50	358.99	11,221.47	6,240.47	-812.14	6,291.98	0.35	0.30	0.18
17,793.00	90.59	359.05	11,220.58	6,334.45	-813.74	6,385.57	0.12	0.10	0.06
17,887.00	90.76	359.41	11,219.47	6,428.43	-815.01	6,479.12	0.42	0.18	0.38
17,982.00	90.92	359.87	11,218.08	6,523.42	-815.60	6,573.59	0.51	0.17	0.48
18,076.00	90.81	359.89	11,216.66	6,617.41	-815.80	6,667.03	0.12	-0.12	0.02
18,170.00	90.98	0.51	11,215.19	6,711.40	-815.47	6,760.40	0.68	0.18	0.66
18,264.00	90.95	0.29	11,213.61	6,805.38	-814.82	6,853.74	0.24	-0.03	-0.23
18,358.00	90.98	0.62	11,212.02	6,899.37	-814.07	6,947.07	0.35	0.03	0.35
18,452.00	90.95	0.91	11,210.44	6,993.34	-812.82	7,040.33	0.31	-0.03	0.31
18,546.00	90.92	1.00	11,208.91	7,087.32	-811.25	7,133.56	0.10	-0.03	0.10
18,641.00	90.90	1.21	11,207.40	7,182.29	-809.42	7,227.75	0.22	-0.02	0.22
18,667.36	90.92	1.36	11,206.98	7,208.64	-808.83	7,253.87	0.57	0.09	0.57
LTP: 18667.40' MD									
18,731.00	90.98	1.72	11,205.92	7,272.25	-807.12	7,316.90	0.57	0.09	0.57
Final Phoenix MWD Survey									
18,797.00	90.98	1.72	11,204.79	7,338.21	-805.14	7,382.24	0.00	0.00	0.00
Projection to TD									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL v4 - Little Bear Fed	0.00	0.00	11,211.00	7,338.50	-815.80	562,253.90	734,521.30	32° 32' 36.38747 N	103° 34' 20.23218 W
- survey misses target center by 12.34usft at 18796.87usft MD (11204.79 TVD, 7338.07 N, -805.14 E)									
- Point									
LTP v4 - Little Bear Fed	0.00	0.00	11,212.77	7,208.64	-814.65	562,124.04	734,522.45	32° 32' 35.10240 N	103° 34' 20.22960 W
- survey misses target center by 8.21usft at 18667.14usft MD (11206.98 TVD, 7208.41 N, -808.83 E)									
- Point									
FTP v3 - Little Bear Fed	0.00	0.00	11,407.00	-59.73	-760.57	554,855.68	734,576.53	32° 31' 23.17800 N	103° 34' 20.20440 W
- survey misses target center by 208.36usft at 11442.80usft MD (11314.05 TVD, 25.86 N, -594.89 E)									
- Point									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,761.00	10,734.63	-240.02	-517.08	Tie In
10,797.00	10,770.62	-240.57	-517.15	First Phoenix MWD Survey
11,337.00	11,253.07	-58.41	-576.71	FTP: 11337.00' MD
18,667.36	11,206.98	7,208.64	-808.83	LTP: 18667.40' MD
18,731.00	11,205.92	7,272.25	-807.12	Final Phoenix MWD Survey
18,797.00	11,204.79	7,338.21	-805.14	Projection to TD

Little Bear Federal Com #5H

<u>Perfs</u>	<u>7 1/2% Acid (Gal)</u>	<u>Sand (#)</u>	<u>Fluid (Gal)</u>
1	1512	399830	343518
2	3024	399800	364266
3	3024	399330	362376
4	3024	401610	347508
5	3024	401300	342416
6	3024	401010	358344
7	3024	400210	370776
8	3024	400160	351078
9	3024	400100	349524
10	3024	398610	366702
11	2268	399950	423192
12	3024	400500	338022
13	3024	400920	364056
14	3024	399180	396018
15	3024	400250	359478
16	3024	400680	332724
17	3024	400950	344274
18	3024	399930	364266
19	3024	400070	358092
20	3024	399280	423528
21	3024	407820	377706
22	3024	402150	347802
23	3234	400070	354900
24	3024	400450	341418
25	3024	405210	330204
26	3024	406601	350784
27	3024	391410	369642
28	3024	401220	335832
29	3024	400290	344568
30	3864	405171	334320
31	3024	394020	333984
32	3024	403238	336546
33	3024	400320	349650
34	3024	398230	341250
35	3024	401690	333732
36	4704	392010	322854
Totals	109,326	14,413,570	12,765,350

From Bottom to Top		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
	18,690	22	4	18,468	67	4	18,290	30	4	18,098	25	4	17,896	30	4
	18,668	22	4	18,463	19	4	18,274	28	4	18,074	25	4	17,876	24	4
	18,646	23	4	18,444	25	4	18,246	26	4	18,049	25	4	17,852	25	4
	18,623	22	4	18,419	25	4	18,220	23	4	18,024	24	4	17,827	25	4
	18,601	22	4	18,394	24	4	18,197		4	18,000	25	4	17,802	24	4
	18,579	22	4	18,370	25	4	18,172	24	4	17,975	23	4	17,778	25	4
	18,557	22	3	18,345	25	3	18,148	25	3	17,952	26	3	17,753	25	3
	18,535		3	18,320		3	18,123		3	17,926		3	17,728		3
	Plug to Plug	92	30	Plug to Plug	64	30	Plug to Plug	80	30	Plug to Plug	87	30	Plug to Plug	83	30
	Frac Plug	18,715	Total Shots	Frac Plug	18,483	Total Shots	Frac Plug	18,300	Total Shots	Frac Plug	18,111	Total Shots	Frac Plug	17,910	Total Shots

From Bottom to Top		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
	17,698	30	4	17,500	31	4	17,290	44	4	17,112	24	4	16,910	29	4
	17,682	28	4	17,482	25	4	17,276	16	4	17,087	25	4	16,890	25	4
	17,654	26	4	17,457	25	4	17,260	25	4	17,062	25	4	16,865	25	4
	17,628	23	4	17,432	24	4	17,235	25	4	17,037	24	4	16,840	24	4
	17,605	25	4	17,408	25	4	17,210	24	4	17,013	25	4	16,816	25	4
	17,580	24	4	17,383	21	4	17,186	25	4	16,988	24	4	16,791	21	4
	17,558	25	3	17,362	28	3	17,161	25	3	16,964	25	3	16,770	28	3
	17,531		3	17,334		3	17,136		3	16,939		3	16,742		3
	Plug to Plug	84	30	Plug to Plug	83	30	Plug to Plug	70	30	Plug to Plug	87	30	Plug to Plug	84	30
	Frac Plug	17,712	Total Shots	Frac Plug	17,515	Total Shots	Frac Plug	17,305	Total Shots	Frac Plug	17,124	Total Shots	Frac Plug	16,924	Total Shots

From Bottom to Top		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
	16,717	25	4	16,520	24	4	16,322	25	4	16,110	40	4	15,928	27	4
	16,692	24	4	16,493	23	4	16,298	30	4	16,092	16	4	15,900	22	4
	16,668	25	4	16,470	24	4	16,268	20	4	16,076	25	4	15,878	24	4
	16,643	25	4	16,446	25	4	16,248	26	4	16,051	25	4	15,854	25	4
	16,618	24	4	16,421	25	4	16,222	23	4	16,026	24	4	15,829	25	4
	16,594	25	4	16,396	24	4	16,199	25	4	16,002	25	4	15,804	24	4
	16,569	25	3	16,372	25	3	16,174	24	3	15,977	22	3	15,780	25	3
	16,544		3	16,347		3	16,150		3	15,955		3	15,755		3
	Plug to Plug	86	30	Plug to Plug	86	30	Plug to Plug	87	30	Plug to Plug	74	30	Plug to Plug	86	30
	Frac Plug	16,729	Total Shots	Frac Plug	16,532	Total Shots	Frac Plug	16,335	Total Shots	Frac Plug	16,125	Total Shots	Frac Plug	15,940	Total Shots

From Bottom to Top		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
	15,724	31	4	15,533	25	4	15,336	24	4	15,138	25	4	14,936	30	4
	15,706	25	4	15,508	24	4	15,311	25	4	15,114	25	4	14,916	24	4
	15,681	25	4	15,484	25	4	15,286	27	4	15,089	25	4	14,892	25	4
	15,656	24	4	15,459	25	4	15,259	22	4	15,064	24	4	14,867	25	4
	15,632	25	4	15,434	24	4	15,237	25	4	15,040	25	4	14,842	24	4
	15,607	29	4	15,410	25	4	15,212	24	4	15,015	24	4	14,818	25	4
	15,578	20	3	15,385	25	3	15,188	25	3	14,991	25	3	14,793	25	3
	15,558		3	15,360		3	15,163		3	14,966		3	14,768		3
	Plug to Plug	82	30	Plug to Plug	86	30	Plug to Plug	89	30	Plug to Plug	87	30	Plug to Plug	86	30
	Frac Plug	15,738	Total Shots	Frac Plug	15,545	Total Shots	Frac Plug	15,348	Total Shots	Frac Plug	15,151	Total Shots	Frac Plug	14,953	Total Shots

From Bottom to Top		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
	14,734	34	4	14,540	36	4	14,349	25	4	14,138	38	4	13,954	28	4
	14,719	25	4	14,522	25	4	14,324	29	4	14,125	23	4	13,927	22	4
	14,694	24	4	14,497	25	4	14,295	20	4	14,102	24	4	13,905	25	4
	14,670	25	4	14,472	24	4	14,275	25	4	14,078	25	4	13,880	24	4
	14,645	25	4	14,448	25	4	14,250	24	4	14,053	25	4	13,856	25	4
	14,620	24	4	14,423	25	4	14,226	25	4	14,028	24	4	13,831	25	4
	14,596	20	3	14,398	24	3	14,201	25	3	14,004	22	3	13,806	24	3
	14,576		3	14,374		3	14,176		3	13,982		3	13,782		3
	Plug to Plug	76	30	Plug to Plug	84	30	Plug to Plug	86	30	Plug to Plug	74	30	Plug to Plug	87	30
	Frac Plug	14,746	Total Shots	Frac Plug	14,556	Total Shots	Frac Plug	14,361	Total Shots	Frac Plug	14,152	Total Shots	Frac Plug	13,967	Total Shots

From Bottom to Top		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
	13,757	25	4	13,547	37	4	13,362	25	4	13,160	30	4	12,968	24	4
	13,732	24	4	13,507	40	4	13,338	25	4	13,140	26	4	12,943	25	4
	13,708	25	4	13,467	40	4	13,313	25	4	13,114	23	4	12,918	24	4
	13,683	27	4	13,427	40	4	13,288	24	4	13,091	25	4	12,894	25	4
	13,656	22	4	13,387		4	13,264	25	4	13,066	24	4	12,869	20	4
	13,634	25	4				13,239	25	4	13,042	25	4	12,849	29	4
	13,609	25	3				13,214	24	3	13,017	25	3	12,820	28	3
	13,584		3				13,190		3	12,992		3	12,792		3
	Plug to Plug	86	30	Plug to Plug	139	20	Plug to Plug	87	30	Plug to Plug	86	30	Plug to Plug	91	30
	Frac Plug	13,769	Total Shots	Frac Plug	13,566	Total Shots	Frac Plug	13,375	Total Shots	Frac Plug	13,177	Total Shots	Frac Plug	12,985	Total Shots

From Bottom to Top		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
	12,770	22	4	12,573	25	4	12,376	24	4	12,179	24	4	11,981	25	4
	12,746	25	4	12,548	22	4	12,351	24	4	12,153	24	4	11,957	25	4
	12,721	25	4	12,526	27	4	12,327	25	4	12,129	24	4	11,932	25	4
	12,696	24	4	12,499	29	4	12,302	25	4	12,105	25	4	11,907	19	4
	12,672	25	4	12,470	20	4	12,277	24	4	12,080	25	4	11,888	30	4
	12,647	25	4	12,450	27	4	12,253	25	4	12,055	24	4	11,858	25	4
	12,622	24	3	12,423	23	3	12,228	25	3	12,031	25	3	11,833	24	3
	12,598		3	12,400		3	12,203		3	12,006		3	11,809		3
	Plug to Plug	87	30	Plug to Plug	86	30	Plug to Plug	86	30	Plug to Plug	86	30	Plug to Plug	60	30
	Frac Plug	12,783	Total Shots	Frac Plug	12,585	Total Shots	Frac Plug	12,388	Total Shots	Frac Plug	12,191	Total Shots	Frac Plug	11,967	Total Shots

From Bottom to Top		Distance Between Perfs	Shots	Stage 37	Distance Between Perfs	Shots	Stage 38	Distance Between Perfs	Shots	Stage 39	Distance Between Perfs	Shots	Stage 40	Distance Between Perfs	Shots
	11,772	37	4		11,614			0			0			0	
	11,740	55	4												
	11,685	24	4												
	11,661	25	4												
	11,636	22	3												
	11,614		3												
	Plug to Plug	123	22	Plug to Plug	0	0	Plug to Plug	0	0	Plug to Plug	0	0	Plug to Plug	0	0
	Frac Plug	11,784	Total Shots	Frac Plug		Total Shots	Frac Plug		Total Shots	Frac Plug		Total Shots	Frac Plug		Total Shots