


Helmer Directional Drilling, Inc.

SG Interests Federal 15-3 NW Proposed Well Plan		Page: 1 Minimum of Curvature Plane of Vertical Section: 340.13°
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Measured Depth Feet	B O R E Inc Degrees	H O L E Direction Degrees	True Vertical Depth Feet	RECTANGULAR COORDINATES		Vertical Section Feet	C L O S U R E S		Dogleg Severity Deg/100'
				North/South Feet	East/West Feet		Distance Feet	Direction Deg	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP-Start Build									
1100.00	1.50	87.08	1099.99	0.07	1.31	-0.38	1.31	87.08	1.50
1200.00	3.00	87.08	1199.91	0.27	5.23	-1.53	5.23	87.08	1.50
1300.00	4.50	87.08	1299.69	0.60	11.76	-3.43	11.77	87.08	1.50
1400.00	6.00	87.08	1399.27	1.07	20.90	-6.10	20.92	87.08	1.50
1500.00	7.50	87.08	1498.57	1.67	32.64	-9.53	32.68	87.08	1.50
1591.22	8.87	87.08	1588.86	2.33	45.60	-13.31	45.66	87.08	1.50
End Build									
2091.22	8.87	87.08	2082.89	6.25	122.58	-35.78	122.74	87.08	0.00
2591.22	8.87	87.08	2576.91	10.18	199.56	-58.25	199.82	87.08	0.00
3091.22	8.87	87.08	3070.93	14.11	276.54	-80.71	276.90	87.08	0.00
3591.22	8.87	87.08	3564.96	18.04	353.52	-103.18	353.98	87.08	0.00
4091.22	8.87	87.08	4058.98	21.97	430.50	-125.65	431.06	87.08	0.00
4591.22	8.87	87.08	4553.00	25.89	507.48	-148.12	508.14	87.08	0.00
5091.22	8.87	87.08	5047.03	29.82	584.46	-170.58	585.22	87.08	0.00
5591.22	8.87	87.08	5541.05	33.75	661.44	-193.05	662.30	87.08	0.00
6091.22	8.87	87.08	6035.07	37.68	738.42	-215.52	739.38	87.08	0.00
6591.22	8.87	87.08	6529.09	41.61	815.40	-237.99	816.46	87.08	0.00
7091.22	8.87	87.08	7023.12	45.53	892.37	-260.45	893.54	87.08	0.00
7366.45	8.87	87.08	7295.05	47.70	934.75	-272.82	935.96	87.08	0.00
Start Drop									
7466.45	7.87	87.08	7393.99	48.44	949.28	-277.06	950.52	87.08	1.00
7566.45	6.87	87.08	7493.16	49.09	962.09	-280.80	963.34	87.08	1.00
7666.45	5.87	87.08	7592.54	49.66	973.17	-284.03	974.43	87.08	1.00

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				North/South Feet	East/West Feet		Distance Feet	Direction Deg	
7766.45	4.87	87.08	7692.10	50.13	982.51	-286.76	983.79	87.08	1.00
7866.45	3.87	87.08	7791.81	50.52	990.12	-288.98	991.40	87.08	1.00
7966.45	2.87	87.08	7891.64	50.82	995.98	-290.69	997.28	87.08	1.00
8066.45	1.87	87.08	7991.55	51.03	1000.11	-291.90	1001.41	87.08	1.00
8166.45	0.87	87.08	8091.52	51.15	1002.49	-292.59	1003.80	87.08	1.00
8253.28	0.00	87.08	8178.35	51.19	1003.15	-292.79	1004.46	87.08	1.00
Vertical / KOP 2									
8283.28	3.00	328.31	8208.34	51.85	1002.74	-292.02	1004.08	87.04	10.00
8313.28	6.00	328.31	8238.24	53.86	1001.50	-289.71	1002.95	86.92	10.00
8343.28	9.00	328.31	8267.98	57.19	999.44	-285.88	1001.08	86.73	10.00
8373.28	12.00	328.31	8297.48	61.84	996.57	-280.53	998.49	86.45	10.00
8403.28	15.00	328.31	8326.64	67.80	992.89	-273.68	995.21	86.09	10.00
8433.28	18.00	328.31	8355.41	75.05	988.42	-265.34	991.26	85.66	10.00
8463.28	21.00	328.31	8383.68	83.57	983.16	-255.54	986.70	85.14	10.00
8493.28	24.00	328.31	8411.39	93.33	977.13	-244.30	981.57	84.54	10.00
8523.28	27.00	328.31	8438.47	104.32	970.34	-231.66	975.93	83.86	10.00
8553.28	30.00	328.31	8464.83	116.50	962.82	-217.65	969.84	83.10	10.00
8583.28	33.00	328.31	8490.41	129.84	954.59	-202.31	963.38	82.25	10.00
8613.28	36.00	328.31	8515.13	144.29	945.66	-185.68	956.61	81.32	10.00
8643.28	39.00	328.31	8538.93	159.83	936.07	-167.81	949.61	80.31	10.00
8673.28	42.00	328.31	8561.74	176.41	925.83	-148.74	942.49	79.21	10.00
8703.28	45.00	328.31	8583.49	193.97	914.98	-128.53	935.32	78.03	10.00
8733.28	48.00	328.31	8604.14	212.49	903.55	-107.24	928.20	76.77	10.00
8763.28	51.00	328.31	8623.62	231.90	891.57	-84.91	921.23	75.42	10.00
8793.28	54.00	328.31	8641.88	252.14	879.06	-61.62	914.51	74.00	10.00

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				North/South Feet	East/West Feet		Distance Feet	Direction Deg	
8823.28	57.00	328.31	8658.87	273.18	866.08	-37.42	908.14	72.49	10.00
8853.28	60.00	328.31	8674.55	294.94	852.64	-12.39	902.21	70.92	10.00
8883.28	63.00	328.31	8688.86	317.37	838.79	13.41	896.82	69.27	10.00
8913.28	66.00	328.31	8701.77	340.41	824.56	39.91	892.07	67.57	10.00
8943.28	69.00	328.31	8713.25	363.99	810.00	67.04	888.03	65.80	10.00
8973.28	72.00	328.31	8723.27	388.05	795.15	94.72	884.78	63.99	10.00
9003.28	75.00	328.31	8731.79	412.52	780.04	122.87	882.40	62.13	10.00
9033.28	78.00	328.31	8738.79	437.34	764.71	151.41	880.94	60.23	10.00
9063.28	81.00	328.31	8744.26	462.43	749.22	180.28	880.44	58.32	10.00
9093.28	84.00	328.31	8748.17	487.74	733.59	209.39	880.94	56.38	10.00
9123.28	87.00	328.31	8750.52	513.18	717.88	238.66	882.45	54.44	10.00
9153.28	90.00	328.31	8751.31	538.70	702.13	268.01	884.97	52.50	10.00
9179.83	92.65	328.31	8750.69	561.28	688.18	293.99	888.05	50.80	10.00
Landing / Start Reach									
9679.83	92.65	328.31	8727.53	986.26	425.77	782.85	1074.24	23.35	0.00
10179.83	92.65	328.31	8704.37	1411.23	163.37	1271.71	1420.66	6.60	0.00
10679.83	92.65	328.31	8681.21	1836.21	-99.04	1760.57	1838.88	356.91	0.00
11179.83	92.65	328.31	8658.05	2261.19	-361.45	2249.44	2289.89	350.92	0.00
11679.83	92.65	328.31	8634.89	2686.16	-623.86	2738.30	2757.66	346.92	0.00
12179.83	92.65	328.31	8611.73	3111.14	-886.27	3227.16	3234.91	344.10	0.00
12679.83	92.65	328.31	8588.57	3536.11	-1148.68	3716.02	3718.01	342.00	0.00
13179.83	92.65	328.31	8565.41	3961.09	-1411.09	4204.88	4204.93	340.39	0.00
13273.17	92.65	328.31	8561.08	4040.42	-1460.08	4296.14	4296.14	340.13	0.00
Terminus									

Final Station Closure Distance: 4296.14' Direction: 340.13°

SG Interests

Federal 15-3 NW Proposed Well Plan

Horizontal Plan
1" = 2000'



5000

4000

3000

2000

1000

0

1000

0

1000

0

1000

0

1000

0

1000

0

1000

0

Terminus
4296.14' Displacement from S/L
@ 340.13° Azimuth from S/L
North-4040.42' West-1460.08' of S/L
TVD-8561' MD-13273'

Plane of Proposal
340.13° Azimuth

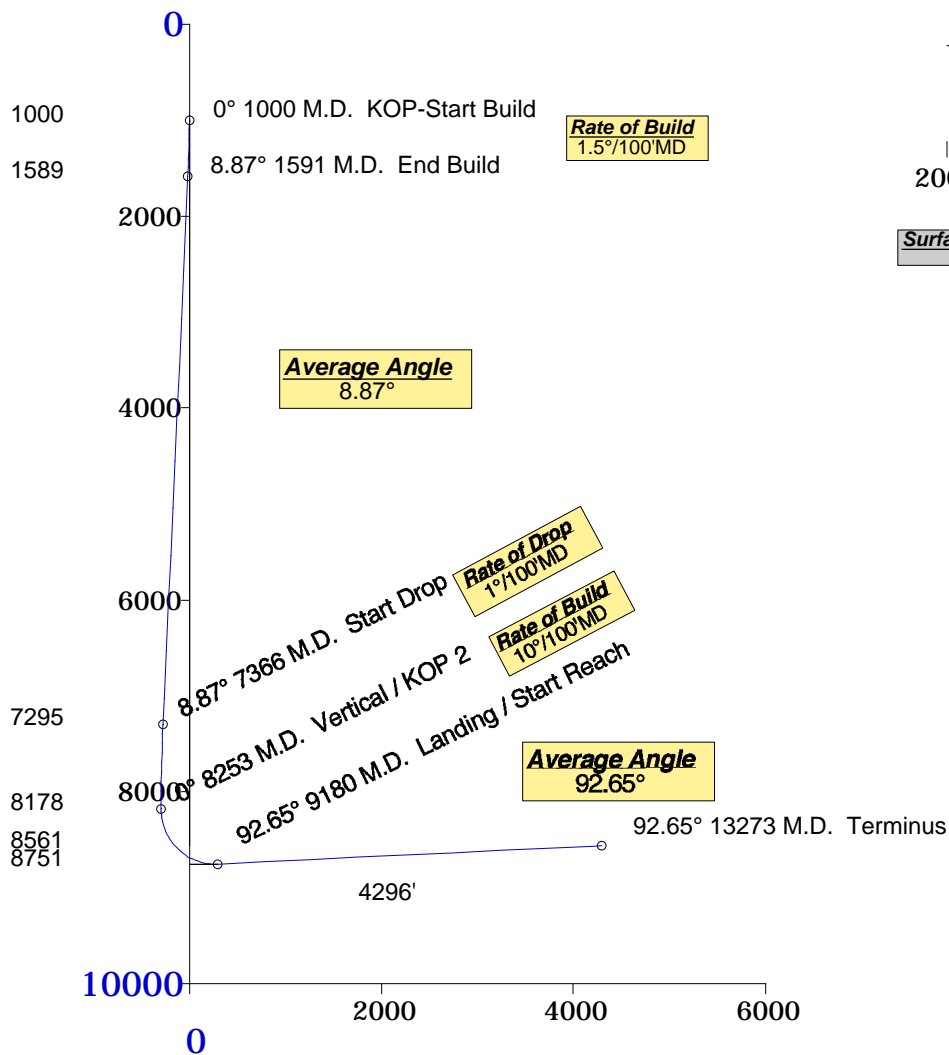
Vertical Section
1" = 2000'

Landing/Start Reach
888.05' Displacement from S/L
@ 50.8° Azimuth from S/L
North-561.28' East-688.18' of S/L
TVD-8751' MD-9180'

Rate of Build
1.5°/100'MD

Surface Location

Vertical/KOP2
1004.46' Displacement from S/L
@ 87.08° Azimuth from S/L
North-51.19' East-1003.15' of S/L
TVD-8178' MD-8253'



Helmer

DIRECTIONAL DRILLING, INC.
1-800-435-8983

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