

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Harvesters Resources 15R-403**

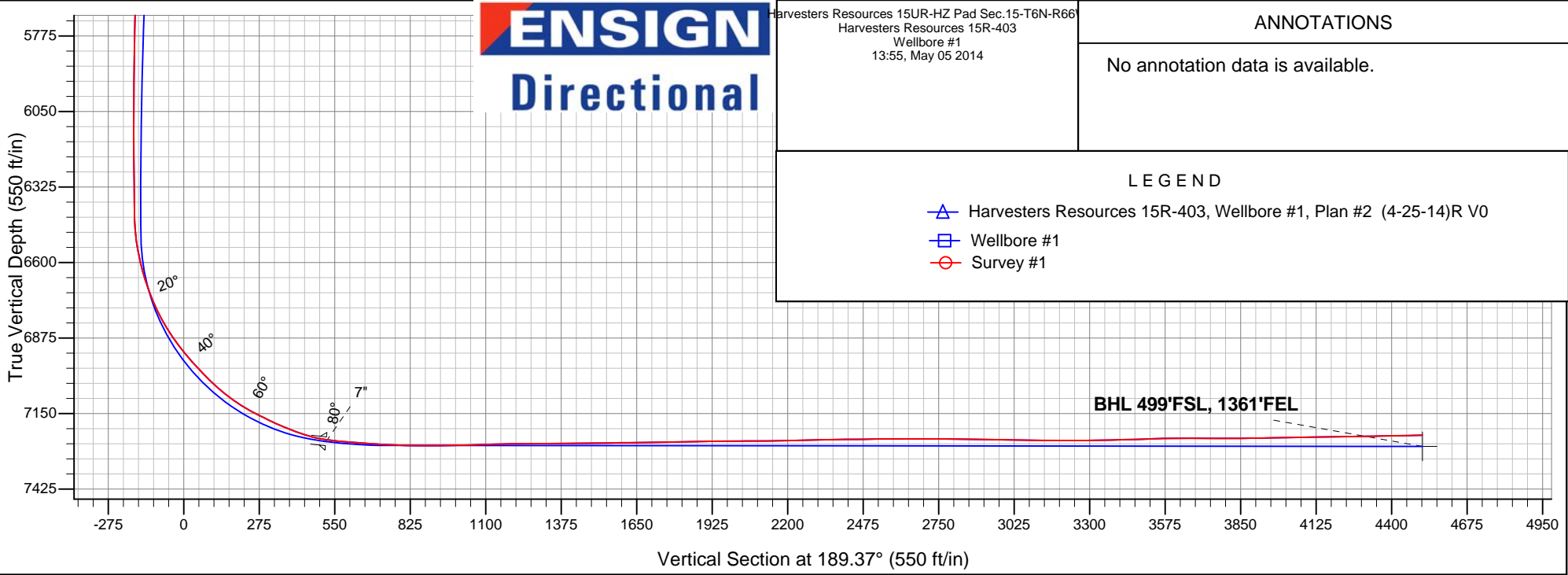
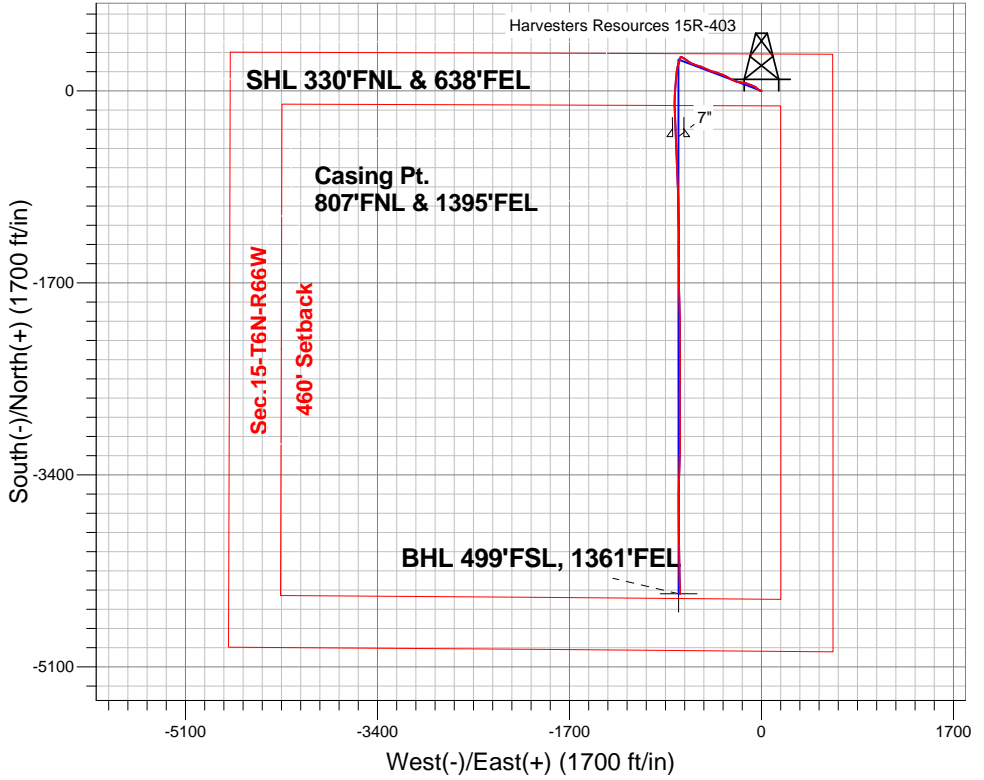
Surface Location: Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4815.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1423919.45	3206803.08	40.494680	-104.756420	
RKB - 15' WELL @ 4830.0ft (RKB - 15')						

FINAL SURVEY

Projected Bottom Hole Location
11711'MD 7229'TVD 4453'S & 721'W of SHL
91.3 degree Incl @ 178.4 degree AZM



Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W Harvesters Resources 15R-403 Wellbore #1 13:55, May 05 2014	ANNOTATIONS
	No annotation data is available.
LEGEND	
△ Harvesters Resources 15R-403, Wellbore #1, Plan #2 (4-25-14)R V0	
□ Wellbore #1	
○ Survey #1	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.15-T6N-R66W

Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W

Harvesters Resources 15R-403

Wellbore #1

Survey: Survey #1

Standard Survey Report

05 May, 2014

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15R-403
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Site:	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Well:	Harvesters Resources 15R-403	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.15-T6N-R66W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W				
Site Position:		Northing:	1,423,919.73 ft	Latitude:	40.494680
From:	Lat/Long	Easting:	3,206,833.67 ft	Longitude:	-104.756310
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.48 °

Well	Harvesters Resources 15R-403					
Well Position	+N-S	0.0 ft	Northing:	1,423,919.45 ft	Latitude:	40.494680
	+E-W	0.0 ft	Easting:	3,206,803.08 ft	Longitude:	-104.756420
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,815.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/24/2014	8.48	67.03	52,881

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)	
	7,270.0	0.0	0.0	189.37	

Survey Program	Date 5/5/2014				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
146.0	11,711.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
146.0	1.10	265.60	146.0	-0.1	-1.4	0.3	0.75	0.75	0.00
238.0	1.80	278.80	238.0	0.0	-3.7	0.6	0.84	0.76	14.35
328.0	2.50	283.80	327.9	0.7	-7.0	0.4	0.80	0.78	5.56
420.0	2.80	297.70	419.8	2.3	-10.9	-0.4	0.77	0.33	15.11
511.0	3.00	298.90	510.7	4.4	-15.0	-1.9	0.23	0.22	1.32
602.0	3.50	303.30	601.5	7.1	-19.4	-3.9	0.61	0.55	4.84
695.0	3.80	305.40	694.3	10.5	-24.3	-6.4	0.35	0.32	2.26
787.0	4.20	309.90	786.1	14.4	-29.4	-9.4	0.55	0.43	4.89
886.0	4.20	305.90	884.9	18.8	-35.1	-12.9	0.30	0.00	-4.04
970.0	4.00	311.30	968.6	22.6	-39.8	-15.8	0.52	-0.24	6.43

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15R-403
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Site:	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Well:	Harvesters Resources 15R-403	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,061.0	6.40	315.40	1,059.3	28.3	-45.7	-20.5	2.67	2.64	4.51
1,153.0	9.20	300.50	1,150.4	35.7	-55.7	-26.1	3.73	3.04	-16.20
1,250.0	11.10	293.70	1,245.9	43.4	-70.9	-31.2	2.31	1.96	-7.01
1,345.0	11.10	290.80	1,339.1	50.3	-87.8	-35.3	0.59	0.00	-3.05
1,441.0	11.50	290.90	1,433.3	57.0	-105.4	-39.1	0.42	0.42	0.10
1,536.0	11.30	293.00	1,526.4	64.0	-122.8	-43.1	0.48	-0.21	2.21
1,631.0	12.00	281.70	1,619.4	69.6	-141.0	-45.7	2.51	0.74	-11.89
1,725.0	11.60	279.30	1,711.4	73.1	-159.9	-46.1	0.67	-0.43	-2.55
1,821.0	11.60	276.80	1,805.5	75.8	-179.1	-45.7	0.52	0.00	-2.60
1,916.0	10.40	280.20	1,898.7	78.5	-197.0	-45.4	1.44	-1.26	3.58
2,011.0	9.50	282.90	1,992.3	81.8	-213.1	-46.0	1.07	-0.95	2.84
2,106.0	8.80	291.00	2,086.1	86.1	-227.5	-47.9	1.54	-0.74	8.53
2,201.0	9.20	292.90	2,179.9	91.7	-241.3	-51.2	0.52	0.42	2.00
2,296.0	9.50	296.40	2,273.7	98.1	-255.3	-55.3	0.68	0.32	3.68
2,391.0	9.80	299.40	2,367.3	105.6	-269.3	-60.3	0.62	0.32	3.16
2,486.0	8.90	296.80	2,461.1	112.9	-283.0	-65.3	1.05	-0.95	-2.74
2,580.0	8.60	298.90	2,554.0	119.5	-295.6	-69.8	0.47	-0.32	2.23
2,675.0	8.20	298.10	2,648.0	126.2	-307.8	-74.4	0.44	-0.42	-0.84
2,770.0	8.40	297.00	2,742.0	132.5	-319.9	-78.6	0.27	0.21	-1.16
2,865.0	9.70	292.70	2,835.8	138.7	-333.5	-82.6	1.54	1.37	-4.53
2,960.0	10.80	291.00	2,929.3	145.0	-349.2	-86.2	1.20	1.16	-1.79
3,055.0	9.90	290.20	3,022.7	151.0	-365.2	-89.6	0.96	-0.95	-0.84
3,151.0	9.80	289.20	3,117.3	156.6	-380.6	-92.5	0.21	-0.10	-1.04
3,246.0	10.00	290.20	3,210.9	162.1	-396.0	-95.4	0.28	0.21	1.05
3,341.0	8.00	287.10	3,304.7	166.9	-410.1	-97.9	2.17	-2.11	-3.26
3,436.0	8.10	280.70	3,398.8	170.0	-423.0	-98.9	0.95	0.11	-6.74
3,531.0	7.20	283.30	3,492.9	172.7	-435.3	-99.5	1.01	-0.95	2.74
3,626.0	7.70	290.30	3,587.1	176.2	-447.1	-101.1	1.09	0.53	7.37
3,721.0	8.30	295.40	3,681.2	181.4	-459.3	-104.2	0.98	0.63	5.37
3,816.0	9.70	296.40	3,775.0	187.9	-472.6	-108.4	1.48	1.47	1.05
3,910.0	10.50	296.00	3,867.6	195.2	-487.4	-113.2	0.85	0.85	-0.43
4,005.0	10.70	293.40	3,961.0	202.5	-503.3	-117.8	0.55	0.21	-2.74
4,195.0	11.10	287.40	4,147.5	214.9	-536.9	-124.7	0.63	0.21	-3.16
4,386.0	9.10	288.40	4,335.6	225.2	-568.8	-129.6	1.05	-1.05	0.52
4,576.0	8.70	290.90	4,523.3	235.1	-596.5	-134.8	0.29	-0.21	1.32
4,766.0	7.60	295.30	4,711.4	245.6	-621.3	-141.2	0.67	-0.58	2.32
4,862.0	6.90	300.70	4,806.6	251.2	-632.0	-145.0	1.02	-0.73	5.63
4,957.0	6.20	303.90	4,901.0	257.0	-641.2	-149.2	0.83	-0.74	3.37
5,051.0	6.00	304.50	4,994.4	262.6	-649.4	-153.4	0.22	-0.21	0.64
5,146.0	7.10	305.70	5,088.8	268.8	-658.3	-158.1	1.17	1.16	1.26
5,242.0	6.20	306.30	5,184.2	275.4	-667.3	-163.1	0.94	-0.94	0.63
5,337.0	5.60	302.40	5,278.7	280.9	-675.3	-167.2	0.76	-0.63	-4.11
5,432.0	4.50	301.10	5,373.3	285.3	-682.4	-170.4	1.16	-1.16	-1.37
5,527.0	3.50	303.10	5,468.1	288.8	-688.0	-173.0	1.06	-1.05	2.11
5,621.0	2.70	302.10	5,561.9	291.6	-692.3	-175.0	0.85	-0.85	-1.06
5,716.0	2.80	306.20	5,656.8	294.1	-696.1	-176.9	0.23	0.11	4.32
5,811.0	2.60	304.20	5,751.7	296.7	-699.7	-178.8	0.23	-0.21	-2.11
5,905.0	2.30	300.50	5,845.6	298.9	-703.1	-180.4	0.36	-0.32	-3.94
6,000.0	1.58	295.50	5,940.6	300.4	-706.0	-181.5	0.78	-0.76	-5.26
6,095.0	1.58	290.28	6,035.5	301.4	-708.4	-182.1	0.15	0.00	-5.49
6,189.0	1.49	284.83	6,129.5	302.2	-710.8	-182.4	0.18	-0.10	-5.80
6,284.0	1.06	232.97	6,224.5	302.0	-712.7	-181.9	1.24	-0.45	-54.59
6,379.0	0.97	243.17	6,319.5	301.1	-714.1	-180.8	0.21	-0.09	10.74

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15R-403
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Site:	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Well:	Harvesters Resources 15R-403	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,442.0	1.06	253.01	6,382.5	300.6	-715.1	-180.2	0.31	0.14	15.62
6,474.0	1.32	256.35	6,414.4	300.5	-715.8	-180.0	0.84	0.81	10.44
6,505.0	2.37	213.99	6,445.4	299.9	-716.5	-179.2	5.34	3.39	-136.65
6,537.0	4.48	198.52	6,477.4	298.1	-717.2	-177.4	7.14	6.59	-48.34
6,569.0	6.95	197.82	6,509.2	295.1	-718.2	-174.3	7.72	7.72	-2.19
6,601.0	9.41	198.34	6,540.9	290.8	-719.6	-169.8	7.69	7.69	1.63
6,633.0	11.61	199.05	6,572.3	285.2	-721.5	-164.0	6.89	6.88	2.22
6,665.0	13.72	198.17	6,603.6	278.6	-723.7	-157.1	6.62	6.59	-2.75
6,696.0	15.65	196.06	6,633.6	271.1	-726.0	-149.3	6.46	6.23	-6.81
6,728.0	17.59	196.06	6,664.2	262.3	-728.6	-140.2	6.06	6.06	0.00
6,760.0	20.05	197.64	6,694.5	252.4	-731.6	-130.0	7.85	7.69	4.94
6,792.0	21.80	197.70	6,724.4	241.5	-735.0	-118.7	5.47	5.47	0.19
6,824.0	23.90	195.80	6,753.9	229.6	-738.6	-106.3	6.95	6.56	-5.94
6,855.0	26.10	193.50	6,782.0	216.9	-741.9	-93.3	7.76	7.10	-7.42
6,887.0	28.80	191.40	6,810.4	202.5	-745.1	-78.6	8.96	8.44	-6.56
6,919.0	31.60	190.00	6,838.0	186.7	-748.1	-62.5	9.02	8.75	-4.38
6,950.0	34.20	188.10	6,864.0	170.1	-750.7	-45.6	9.02	8.39	-6.13
6,982.0	35.90	186.00	6,890.2	151.9	-753.0	-27.3	6.51	5.31	-6.56
7,014.0	38.40	185.30	6,915.7	132.6	-754.9	-8.0	7.92	7.81	-2.19
7,046.0	39.90	185.40	6,940.6	112.5	-756.7	12.1	4.69	4.69	0.31
7,077.0	41.90	185.10	6,964.0	92.3	-758.6	32.4	6.48	6.45	-0.97
7,109.0	43.40	184.60	6,987.5	70.7	-760.4	54.0	4.81	4.69	-1.56
7,141.0	44.70	184.20	7,010.5	48.5	-762.1	76.2	4.15	4.06	-1.25
7,172.0	46.40	183.90	7,032.2	26.5	-763.7	98.2	5.53	5.48	-0.97
7,204.0	48.20	183.70	7,053.9	3.0	-765.3	121.6	5.64	5.63	-0.63
7,236.0	50.50	183.30	7,074.8	-21.2	-766.7	145.8	7.25	7.19	-1.25
7,268.0	53.30	182.80	7,094.5	-46.4	-768.1	170.8	8.84	8.75	-1.56
7,299.0	56.90	182.10	7,112.3	-71.8	-769.2	196.0	11.76	11.61	-2.26
7,331.0	60.00	180.30	7,129.0	-99.0	-769.7	223.0	10.81	9.69	-5.63
7,363.0	62.40	177.70	7,144.4	-127.1	-769.2	250.6	10.34	7.50	-8.13
7,395.0	63.70	176.60	7,158.9	-155.6	-767.8	278.5	5.09	4.06	-3.44
7,426.0	64.90	176.80	7,172.4	-183.5	-766.2	305.7	3.91	3.87	0.65
7,458.0	66.10	177.70	7,185.6	-212.5	-764.8	334.2	4.54	3.75	2.81
7,490.0	67.30	178.80	7,198.3	-241.9	-763.9	363.0	4.90	3.75	3.44
7,521.0	68.90	179.50	7,209.9	-270.7	-763.5	391.3	5.57	5.16	2.26
7,552.0	70.90	179.60	7,220.5	-299.8	-763.2	420.0	6.46	6.45	0.32
7,584.0	73.40	178.90	7,230.3	-330.2	-762.8	450.0	8.09	7.81	-2.19
7,615.0	77.40	178.10	7,238.1	-360.2	-762.1	479.4	13.14	12.90	-2.58
7,647.0	80.80	177.40	7,244.2	-391.6	-760.8	510.2	10.84	10.63	-2.19
7,671.0	83.50	177.50	7,247.5	-415.4	-759.8	533.5	11.26	11.25	0.42
7,733.0	85.80	176.70	7,253.2	-477.0	-756.6	593.8	3.93	3.71	-1.29
7,764.0	85.80	176.30	7,255.5	-507.9	-754.8	623.9	1.29	0.00	-1.29
7,794.0	85.30	176.20	7,257.8	-537.7	-752.8	653.1	1.70	-1.67	-0.33
7,824.0	85.80	176.60	7,260.2	-567.6	-750.9	682.2	2.13	1.67	1.33
7,854.0	86.40	176.90	7,262.2	-597.4	-749.2	711.4	2.24	2.00	1.00
7,884.0	87.30	177.50	7,263.9	-627.4	-747.8	740.7	3.60	3.00	2.00
7,915.0	87.60	177.60	7,265.2	-658.3	-746.4	771.0	1.02	0.97	0.32
7,945.0	88.20	177.70	7,266.3	-688.3	-745.2	800.4	2.03	2.00	0.33
7,975.0	89.30	178.20	7,267.0	-718.2	-744.1	829.8	4.03	3.67	1.67
8,006.0	89.80	178.70	7,267.2	-749.2	-743.3	860.2	2.28	1.61	1.61
8,036.0	90.00	178.60	7,267.3	-779.2	-742.6	889.7	0.75	0.67	-0.33
8,066.0	90.30	178.40	7,267.2	-809.2	-741.8	919.1	1.20	1.00	-0.67

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15R-403
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Site:	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Well:	Harvesters Resources 15R-403	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,097.0	90.70	178.10	7,266.9	-840.2	-740.9	949.6	1.61	1.29	-0.97
8,127.0	91.20	177.90	7,266.4	-870.2	-739.8	979.0	1.80	1.67	-0.67
8,157.0	91.70	178.50	7,265.7	-900.1	-738.9	1,008.4	2.60	1.67	2.00
8,187.0	91.40	178.50	7,264.9	-930.1	-738.1	1,037.8	1.00	-1.00	0.00
8,218.0	91.50	178.70	7,264.1	-961.1	-737.3	1,068.3	0.72	0.32	0.65
8,248.0	91.50	178.70	7,263.3	-991.1	-736.6	1,097.8	0.00	0.00	0.00
8,278.0	91.50	178.70	7,262.5	-1,021.1	-736.0	1,127.2	0.00	0.00	0.00
8,308.0	91.50	178.70	7,261.7	-1,051.0	-735.3	1,156.7	0.00	0.00	0.00
8,339.0	91.60	178.50	7,260.9	-1,082.0	-734.5	1,187.1	0.72	0.32	-0.65
8,369.0	90.80	178.40	7,260.3	-1,112.0	-733.7	1,216.6	2.69	-2.67	-0.33
8,399.0	90.00	178.80	7,260.0	-1,142.0	-733.0	1,246.1	2.98	-2.67	1.33
8,430.0	90.10	179.10	7,260.0	-1,173.0	-732.4	1,276.6	1.02	0.32	0.97
8,460.0	90.20	179.50	7,259.9	-1,203.0	-732.1	1,306.1	1.37	0.33	1.33
8,491.0	90.40	180.00	7,259.8	-1,234.0	-731.9	1,336.7	1.74	0.65	1.61
8,522.0	90.60	180.30	7,259.5	-1,265.0	-732.0	1,367.3	1.16	0.65	0.97
8,554.0	90.60	180.30	7,259.2	-1,297.0	-732.2	1,398.9	0.00	0.00	0.00
8,586.0	90.70	180.00	7,258.8	-1,329.0	-732.2	1,430.4	0.99	0.31	-0.94
8,617.0	90.60	180.00	7,258.5	-1,360.0	-732.2	1,461.0	0.32	-0.32	0.00
8,649.0	90.60	179.70	7,258.1	-1,392.0	-732.2	1,492.6	0.94	0.00	-0.94
8,681.0	90.70	179.70	7,257.8	-1,424.0	-732.0	1,524.1	0.31	0.31	0.00
8,712.0	90.70	179.60	7,257.4	-1,455.0	-731.8	1,554.7	0.32	0.00	-0.32
8,744.0	90.70	179.40	7,257.0	-1,487.0	-731.5	1,586.2	0.62	0.00	-0.63
8,776.0	90.90	179.50	7,256.5	-1,519.0	-731.2	1,617.7	0.70	0.63	0.31
8,807.0	90.80	179.40	7,256.1	-1,550.0	-730.9	1,648.3	0.46	-0.32	-0.32
8,839.0	90.80	179.20	7,255.6	-1,582.0	-730.5	1,679.8	0.62	0.00	-0.63
8,871.0	90.80	179.40	7,255.2	-1,613.9	-730.1	1,711.3	0.62	0.00	0.63
8,903.0	90.80	179.30	7,254.7	-1,645.9	-729.8	1,742.8	0.31	0.00	-0.31
8,934.0	91.00	179.30	7,254.3	-1,676.9	-729.4	1,773.3	0.65	0.65	0.00
8,966.0	91.00	179.60	7,253.7	-1,708.9	-729.1	1,804.8	0.94	0.00	0.94
8,997.0	91.10	179.80	7,253.1	-1,739.9	-728.9	1,835.4	0.72	0.32	0.65
9,029.0	91.10	179.70	7,252.5	-1,771.9	-728.8	1,866.9	0.31	0.00	-0.31
9,061.0	91.00	179.70	7,251.9	-1,803.9	-728.6	1,898.4	0.31	-0.31	0.00
9,092.0	91.00	179.70	7,251.4	-1,834.9	-728.5	1,929.0	0.00	0.00	0.00
9,124.0	90.70	179.20	7,250.9	-1,866.9	-728.2	1,960.5	1.82	-0.94	-1.56
9,155.0	90.30	178.20	7,250.6	-1,897.9	-727.5	1,991.0	3.47	-1.29	-3.23
9,187.0	90.20	177.70	7,250.5	-1,929.9	-726.3	2,022.4	1.59	-0.31	-1.56
9,219.0	90.20	177.30	7,250.4	-1,961.8	-724.9	2,053.7	1.25	0.00	-1.25
9,250.0	90.20	177.60	7,250.3	-1,992.8	-723.5	2,084.0	0.97	0.00	0.97
9,282.0	90.50	178.60	7,250.1	-2,024.8	-722.5	2,115.4	3.26	0.94	3.13
9,313.0	91.00	179.70	7,249.7	-2,055.8	-722.0	2,145.9	3.90	1.61	3.55
9,345.0	91.30	179.80	7,249.0	-2,087.8	-721.9	2,177.4	0.99	0.94	0.31
9,377.0	90.90	179.70	7,248.4	-2,119.8	-721.7	2,209.0	1.29	-1.25	-0.31
9,409.0	91.00	179.70	7,247.9	-2,151.8	-721.6	2,240.5	0.31	0.31	0.00
9,440.0	91.30	180.20	7,247.3	-2,182.8	-721.5	2,271.1	1.88	0.97	1.61
9,472.0	91.60	180.50	7,246.5	-2,214.7	-721.7	2,302.7	1.33	0.94	0.94
9,503.0	91.60	180.30	7,245.6	-2,245.7	-721.9	2,333.3	0.64	0.00	-0.65
9,535.0	90.90	179.80	7,244.9	-2,277.7	-722.0	2,364.9	2.69	-2.19	-1.56
9,567.0	90.50	179.50	7,244.5	-2,309.7	-721.8	2,396.4	1.56	-1.25	-0.94
9,598.0	90.50	179.50	7,244.2	-2,340.7	-721.5	2,426.9	0.00	0.00	0.00
9,630.0	90.70	179.60	7,243.9	-2,372.7	-721.3	2,458.5	0.70	0.63	0.31
9,662.0	90.90	179.60	7,243.5	-2,404.7	-721.0	2,490.0	0.63	0.63	0.00
9,694.0	90.20	180.00	7,243.1	-2,436.7	-720.9	2,521.6	2.52	-2.19	1.25
9,725.0	90.00	180.20	7,243.1	-2,467.7	-721.0	2,552.2	0.91	-0.65	0.65

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15R-403
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Site:	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Well:	Harvesters Resources 15R-403	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,757.0	90.10	180.10	7,243.1	-2,499.7	-721.1	2,583.7	0.44	0.31	-0.31
9,789.0	90.20	180.60	7,243.0	-2,531.7	-721.3	2,615.3	1.59	0.31	1.56
9,820.0	90.50	180.90	7,242.8	-2,562.7	-721.7	2,646.0	1.37	0.97	0.97
9,852.0	90.70	180.90	7,242.5	-2,594.7	-722.2	2,677.6	0.63	0.63	0.00
9,884.0	90.70	180.40	7,242.1	-2,626.7	-722.5	2,709.3	1.56	0.00	-1.56
9,915.0	89.70	180.30	7,242.0	-2,657.7	-722.7	2,739.9	3.24	-3.23	-0.32
9,947.0	89.10	180.60	7,242.3	-2,689.7	-723.0	2,771.5	2.10	-1.88	0.94
9,979.0	89.10	180.50	7,242.8	-2,721.7	-723.3	2,803.1	0.31	0.00	-0.31
10,011.0	89.10	179.80	7,243.3	-2,753.7	-723.4	2,834.7	2.19	0.00	-2.19
10,042.0	88.80	179.60	7,243.9	-2,784.7	-723.2	2,865.3	1.16	-0.97	-0.65
10,074.0	88.70	179.50	7,244.6	-2,816.7	-722.9	2,896.8	0.44	-0.31	-0.31
10,106.0	88.80	179.70	7,245.3	-2,848.7	-722.7	2,928.3	0.70	0.31	0.63
10,138.0	88.80	179.50	7,245.9	-2,880.7	-722.5	2,959.8	0.62	0.00	-0.63
10,169.0	88.90	179.30	7,246.6	-2,911.6	-722.2	2,990.4	0.72	0.32	-0.65
10,201.0	89.10	179.20	7,247.1	-2,943.6	-721.8	3,021.9	0.70	0.63	-0.31
10,233.0	89.20	179.10	7,247.6	-2,975.6	-721.3	3,053.3	0.44	0.31	-0.31
10,264.0	89.20	179.00	7,248.0	-3,006.6	-720.8	3,083.8	0.32	0.00	-0.32
10,295.0	89.70	179.70	7,248.3	-3,037.6	-720.4	3,114.4	2.77	1.61	2.26
10,327.0	89.90	180.80	7,248.4	-3,069.6	-720.6	3,146.0	3.49	0.63	3.44
10,359.0	90.20	180.90	7,248.4	-3,101.6	-721.0	3,177.6	0.99	0.94	0.31
10,390.0	90.20	181.00	7,248.3	-3,132.6	-721.5	3,208.3	0.32	0.00	0.32
10,422.0	90.40	181.10	7,248.1	-3,164.6	-722.1	3,239.9	0.70	0.63	0.31
10,454.0	90.50	181.40	7,247.9	-3,196.6	-722.8	3,271.6	0.99	0.31	0.94
10,486.0	90.70	181.40	7,247.5	-3,228.6	-723.6	3,303.3	0.63	0.63	0.00
10,518.0	90.80	181.60	7,247.1	-3,260.6	-724.4	3,335.0	0.70	0.31	0.63
10,549.0	91.00	181.60	7,246.6	-3,291.6	-725.3	3,365.7	0.65	0.65	0.00
10,581.0	91.10	181.60	7,246.0	-3,323.5	-726.2	3,397.4	0.31	0.31	0.00
10,613.0	91.30	181.70	7,245.4	-3,355.5	-727.1	3,429.1	0.70	0.63	0.31
10,645.0	91.50	181.80	7,244.6	-3,387.5	-728.1	3,460.8	0.70	0.63	0.31
10,677.0	91.70	181.80	7,243.7	-3,419.5	-729.1	3,492.5	0.63	0.63	0.00
10,709.0	92.00	182.10	7,242.7	-3,451.4	-730.2	3,524.3	1.33	0.94	0.94
10,740.0	92.00	182.30	7,241.6	-3,482.4	-731.4	3,555.0	0.64	0.00	0.65
10,772.0	91.10	181.20	7,240.7	-3,514.4	-732.4	3,586.7	4.44	-2.81	-3.44
10,804.0	90.80	180.80	7,240.2	-3,546.4	-732.9	3,618.4	1.56	-0.94	-1.25
10,835.0	89.90	180.00	7,240.0	-3,577.3	-733.1	3,649.0	3.88	-2.90	-2.58
10,867.0	89.50	179.50	7,240.2	-3,609.3	-733.0	3,680.5	2.00	-1.25	-1.56
10,898.0	89.60	179.10	7,240.4	-3,640.3	-732.6	3,711.0	1.33	0.32	-1.29
10,930.0	89.80	179.10	7,240.6	-3,672.3	-732.1	3,742.5	0.63	0.63	0.00
10,962.0	89.90	179.30	7,240.7	-3,704.3	-731.7	3,774.0	0.70	0.31	0.63
10,993.0	90.10	179.20	7,240.7	-3,735.3	-731.3	3,804.5	0.72	0.65	-0.32
11,025.0	90.40	179.50	7,240.5	-3,767.3	-730.9	3,836.1	1.33	0.94	0.94
11,057.0	90.50	179.50	7,240.3	-3,799.3	-730.6	3,867.6	0.31	0.31	0.00
11,088.0	90.60	179.50	7,240.0	-3,830.3	-730.4	3,898.1	0.32	0.32	0.00
11,120.0	91.10	180.20	7,239.5	-3,862.3	-730.3	3,929.7	2.69	1.56	2.19
11,152.0	91.10	180.10	7,238.9	-3,894.3	-730.4	3,961.3	0.31	0.00	-0.31
11,183.0	91.00	179.90	7,238.3	-3,925.3	-730.4	3,991.8	0.72	-0.32	-0.65
11,215.0	91.20	179.70	7,237.7	-3,957.3	-730.2	4,023.4	0.88	0.63	-0.63
11,247.0	91.30	179.40	7,237.0	-3,989.3	-730.0	4,054.9	0.99	0.31	-0.94
11,278.0	91.50	179.40	7,236.3	-4,020.3	-729.7	4,085.4	0.65	0.65	0.00
11,310.0	90.60	179.10	7,235.7	-4,052.3	-729.2	4,116.9	2.96	-2.81	-0.94
11,342.0	90.40	179.10	7,235.4	-4,084.3	-728.7	4,148.4	0.63	-0.63	0.00
11,374.0	90.60	179.40	7,235.1	-4,116.3	-728.3	4,179.9	1.13	0.63	0.94

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15R-403
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Site:	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Well:	Harvesters Resources 15R-403	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,405.0	90.80	179.50	7,234.7	-4,147.3	-728.0	4,210.5	0.72	0.65	0.32
11,437.0	90.90	179.40	7,234.3	-4,179.3	-727.7	4,242.0	0.44	0.31	-0.31
11,469.0	90.90	179.10	7,233.7	-4,211.3	-727.3	4,273.5	0.94	0.00	-0.94
11,500.0	90.90	179.00	7,233.3	-4,242.2	-726.8	4,304.0	0.32	0.00	-0.32
11,531.0	91.00	179.00	7,232.7	-4,273.2	-726.2	4,334.5	0.32	0.32	0.00
11,563.0	91.00	178.50	7,232.2	-4,305.2	-725.5	4,365.9	1.56	0.00	-1.56
11,594.0	91.10	178.60	7,231.6	-4,336.2	-724.8	4,396.4	0.46	0.32	0.32
11,625.0	91.10	178.20	7,231.0	-4,367.2	-723.9	4,426.8	1.29	0.00	-1.29
11,657.0	91.30	178.20	7,230.4	-4,399.2	-722.9	4,458.2	0.63	0.63	0.00
11,708.5	91.30	178.39	7,229.2	-4,450.6	-721.4	4,508.7	0.37	0.00	0.37
BHL 500'FSL, 1374'FEL									
11,711.0	91.30	178.40	7,229.1	-4,453.1	-721.3	4,511.1	0.37	0.00	0.37

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------