

Unit Petroleum

**Reno County, Kansas
Section 30 T25S-R10W
Dye Trust 30 #1H**

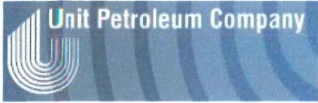
OH

Design: OH

Standard Survey Report

08 November, 2013





Unit Petroleum
 Project: Reno County, Kansas
 Site: Section 30 T26S-R10W
 Well: Dye Trust 30 #1H
 Wellbore: OH
 Design: Design #1
 Lat: 37° 51' 11.176 N
 Long: 98° 28' 9.767 W
 Pad GL: 1799.00
 KB: 14' KB @ 1813.00usft (UDI 331)



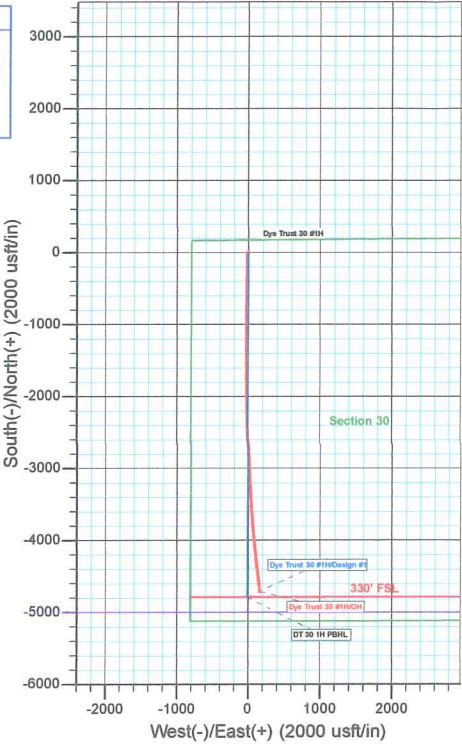
SECTION DETAILS										
MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
3362.49	0.00	0.00	3362.49	0.00	0.00	0.00	0.00	0.00		
3922.49	56.00	180.19	3837.49	-252.96	-0.84	10.00	180.19	252.56		
4072.49	56.00	180.19	3921.37	-376.92	-1.25	0.00	0.00	376.92		
4354.10	89.79	180.19	4003.00	-642.16	-2.13	12.00	0.00	642.19		
6499.27	89.79	180.19	4018.00	-4787.30	-16.00	0.00	0.00	4787.33		

PROJECT DETAILS: Reno County, Kansas
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Kansas Southern Zone
 System Datum: Mean Sea Level

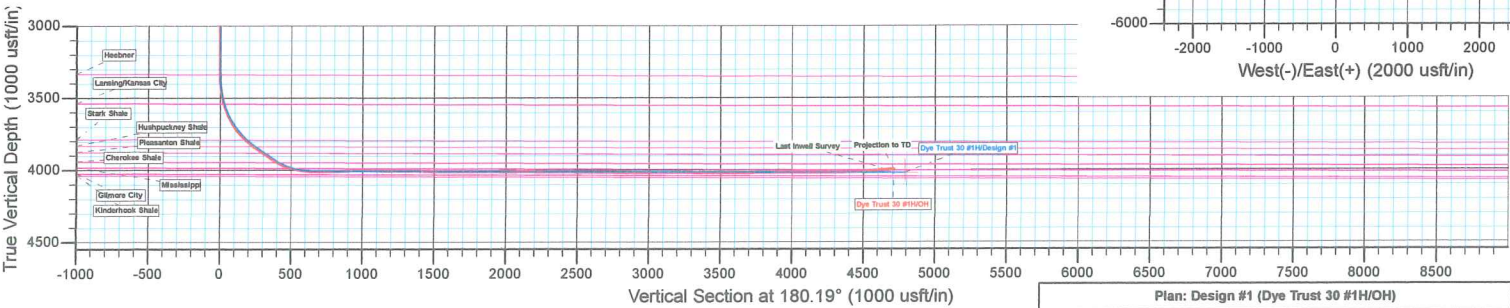
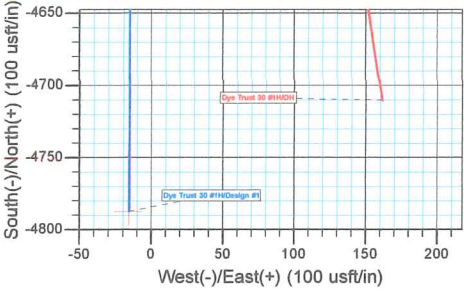
WELL DETAILS: Dye Trust 30 #1H						
+N-S	+E-W	Northing	Ground Level: Easting	1799.00 Latitude	Longitude	Slot
0.00	0.00	1744343.00	1321174.00	37° 51' 11.176 N	98° 28' 9.767 W	

T G M
 Azimuths to Grid North
 True North: -0.02°
 Magnetic North: 4.68°
 Magnetic Field
 Strength: 52084.3nT
 Dip Angle: 65.77°
 Date: 10/16/2013
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)						
Name	TVD	+N-S	+E-W	Latitude	Longitude	Shape Point
DT 30 1H PBHL	4018.00	-4787.30	-16.00	37° 50' 23.849 N	98° 28' 9.986 W	



NOTE: All Lease lines and Hard lines are estimates only and are subject to the customers' approval.



Plan: Design #1 (Dye Trust 30 #1H/OH)
 Created By: Derek Stephens Date: 8:03, November 08 2013

Company:	Unit Petroleum	Local Co-ordinate Reference:	Well Dye Trust 30 #1H
Project:	Reno County, Kansas	TVD Reference:	14' KB @ 1813.00usft (UDI 331)
Site:	Section 30 T25S-R10W	MD Reference:	14' KB @ 1813.00usft (UDI 331)
Well:	Dye Trust 30 #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project	Reno County, Kansas		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Kansas Southern Zone		Using geodetic scale factor

Site	Section 30 T25S-R10W				
Site Position:		Northing:	1,744,343.00 usft	Latitude:	37° 51' 11.176 N
From:	Map	Easting:	1,321,174.00 usft	Longitude:	98° 28' 9.767 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.02 °

Well	Dye Trust 30 #1H					
Well Position	+N/-S	0.00 usft	Northing:	1,744,343.00 usft	Latitude:	37° 51' 11.176 N
	+E/-W	0.00 usft	Easting:	1,321,174.00 usft	Longitude:	98° 28' 9.767 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	1,799.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/18/2013	4.70	65.77	52,084

Design	OH				
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	180.19	

Survey Program	Date	11/8/2013			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
125.37	3,264.00	Gyro (OH)	CB-GYRO-MS	Camera based gyro multishot	
3,295.00	8,440.00	MWD (OH)	MWD	MWD - Standard	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.37	0.67	326.30	125.37	0.61	-0.41	-0.61	0.53	0.53	0.00	
220.48	0.80	327.01	220.47	1.63	-1.08	-1.63	0.14	0.14	0.75	
315.59	0.82	324.11	315.57	2.74	-1.84	-2.73	0.05	0.02	-3.05	
410.70	0.90	320.54	410.67	3.87	-2.71	-3.86	0.10	0.08	-3.75	
505.81	0.78	330.75	505.77	5.01	-3.50	-5.00	0.20	-0.13	10.73	
600.92	0.99	324.35	600.87	6.24	-4.30	-6.23	0.24	0.22	-6.73	
696.03	0.68	321.34	695.97	7.35	-5.13	-7.33	0.33	-0.33	-3.16	
791.14	0.65	313.19	791.07	8.16	-5.87	-8.14	0.10	-0.03	-8.57	
886.25	0.50	299.80	886.18	8.73	-6.63	-8.71	0.21	-0.16	-14.08	

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Well:	Dye Trust 30 #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

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)
981.36	0.30	286.48	981.28	9.01	-7.23	-8.99	0.23	-0.21	-14.00
1,076.47	0.46	256.24	1,076.39	8.99	-7.84	-8.96	0.26	0.17	-31.79
1,171.58	0.44	244.74	1,171.50	8.74	-8.54	-8.72	0.10	-0.02	-12.09
1,266.69	0.25	226.63	1,266.61	8.45	-9.02	-8.42	0.23	-0.20	-19.04
1,361.80	0.48	222.25	1,361.72	8.01	-9.44	-7.98	0.24	0.24	-4.61
1,456.91	0.80	219.57	1,456.82	7.20	-10.13	-7.17	0.34	0.34	-2.82
1,552.02	0.63	217.67	1,551.92	6.28	-10.87	-6.24	0.18	-0.18	-2.00
1,647.13	0.66	225.37	1,647.03	5.48	-11.58	-5.44	0.10	0.03	8.10
1,742.24	0.97	239.37	1,742.13	4.68	-12.66	-4.64	0.39	0.33	14.72
1,837.35	0.47	255.19	1,837.23	4.17	-13.73	-4.13	0.56	-0.53	16.63
1,932.46	0.60	277.82	1,932.33	4.14	-14.60	-4.09	0.26	0.14	23.79
2,027.57	0.45	266.14	2,027.44	4.18	-15.47	-4.13	0.19	-0.16	-12.28
2,122.68	0.34	236.64	2,122.55	4.00	-16.08	-3.95	0.24	-0.12	-31.02
2,217.79	0.09	205.37	2,217.66	3.78	-16.35	-3.72	0.28	-0.26	-32.88
2,312.90	0.22	249.09	2,312.77	3.65	-16.55	-3.59	0.18	0.14	45.97
2,408.01	0.41	287.15	2,407.88	3.68	-17.04	-3.63	0.29	0.20	40.02
2,503.12	0.41	256.01	2,502.98	3.70	-17.70	-3.64	0.23	0.00	-32.74
2,598.23	0.55	242.61	2,598.09	3.41	-18.43	-3.35	0.19	0.15	-14.09
2,693.34	0.59	237.20	2,693.20	2.93	-19.25	-2.87	0.07	0.04	-5.69
2,788.45	0.37	231.56	2,788.30	2.48	-19.90	-2.41	0.24	-0.23	-5.93
2,883.56	0.37	241.90	2,883.41	2.14	-20.41	-2.07	0.07	0.00	10.87
2,978.67	0.39	252.86	2,978.52	1.90	-21.00	-1.83	0.08	0.02	11.52
3,073.78	0.12	276.11	3,073.63	1.82	-21.40	-1.74	0.30	-0.28	24.45
3,168.89	0.18	284.23	3,168.74	1.86	-21.65	-1.79	0.07	0.06	8.54
3,264.00	0.12	301.99	3,263.85	1.95	-21.88	-1.88	0.08	-0.06	18.67
3,295.00	0.30	315.50	3,294.85	2.03	-21.96	-1.95	0.60	0.58	43.58
3,327.00	0.10	303.40	3,326.85	2.10	-22.04	-2.03	0.64	-0.63	-37.81
3,359.00	1.10	176.50	3,358.84	1.81	-22.05	-1.74	3.63	3.13	-396.56
3,390.00	3.50	173.80	3,389.82	0.57	-21.93	-0.50	7.75	7.74	-8.71
3,422.00	6.10	174.00	3,421.70	-2.09	-21.64	2.16	8.13	8.13	0.63
3,453.00	8.90	175.00	3,452.43	-6.12	-21.26	6.19	9.04	9.03	3.23
3,485.00	11.40	177.10	3,483.93	-11.74	-20.89	11.81	7.90	7.81	6.56
3,516.00	13.80	178.40	3,514.18	-18.50	-20.63	18.57	7.80	7.74	4.19
3,548.00	16.40	178.00	3,545.07	-26.83	-20.36	26.90	8.13	8.13	-1.25
3,579.00	19.30	177.40	3,574.58	-36.32	-19.98	36.39	9.37	9.35	-1.94
3,610.00	22.50	177.10	3,603.54	-47.37	-19.45	47.43	10.33	10.32	-0.97
3,642.00	25.90	177.60	3,632.72	-60.47	-18.84	60.53	10.64	10.63	1.56
3,674.00	29.40	178.30	3,661.06	-75.31	-18.32	75.37	10.98	10.94	2.19
3,705.00	32.80	179.70	3,687.60	-91.31	-18.05	91.37	11.21	10.97	4.52
3,737.00	36.10	181.00	3,713.99	-109.41	-18.17	109.47	10.56	10.31	4.06
3,768.00	39.70	181.50	3,738.44	-128.45	-18.59	128.51	11.66	11.61	1.61
3,800.00	43.50	181.80	3,762.37	-149.68	-19.20	149.74	11.89	11.88	0.94
3,832.00	47.60	182.30	3,784.77	-172.50	-20.02	172.57	12.86	12.81	1.56



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Well:	Dye Trust 30 #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

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)	
3,864.00	51.60	181.70	3,805.51	-196.85	-20.87	196.92	12.58	12.50	-1.88	
3,896.00	53.90	180.70	3,824.88	-222.32	-21.40	222.39	7.61	7.19	-3.13	
3,926.00	55.00	180.90	3,842.32	-246.72	-21.74	246.79	3.71	3.67	0.67	
3,957.00	55.20	180.60	3,860.06	-272.15	-22.07	272.22	1.02	0.65	-0.97	
3,989.00	55.40	181.00	3,878.27	-298.45	-22.44	298.52	1.20	0.63	1.25	
4,020.00	55.50	180.70	3,895.85	-323.98	-22.82	324.06	0.86	0.32	-0.97	
4,052.00	55.90	180.60	3,913.89	-350.41	-23.12	350.49	1.28	1.25	-0.31	
4,084.00	58.30	180.60	3,931.27	-377.28	-23.40	377.36	7.50	7.50	0.00	
4,116.00	61.80	180.90	3,947.24	-405.00	-23.76	405.08	10.97	10.94	0.94	
4,148.00	65.60	180.90	3,961.42	-433.68	-24.21	433.76	11.88	11.88	0.00	
4,179.00	69.50	181.00	3,973.25	-462.32	-24.69	462.40	12.58	12.58	0.32	
4,211.00	73.50	181.30	3,983.40	-492.65	-25.30	492.73	12.53	12.50	0.94	
4,243.00	77.40	181.40	3,991.44	-523.61	-26.03	523.70	12.19	12.19	0.31	
4,275.00	81.50	181.40	3,997.30	-555.06	-26.80	555.14	12.81	12.81	0.00	
4,286.00	82.90	181.20	3,998.79	-565.95	-27.04	566.04	12.85	12.73	-1.82	
4,379.00	88.70	180.80	4,005.60	-658.65	-28.66	658.74	6.25	6.24	-0.43	
4,440.00	90.30	180.90	4,006.13	-719.64	-29.56	719.73	2.63	2.62	0.16	
4,502.00	91.60	180.50	4,005.10	-781.62	-30.32	781.72	2.19	2.10	-0.65	
4,564.00	91.10	180.50	4,003.64	-843.60	-30.86	843.70	0.81	-0.81	0.00	
4,625.00	90.70	180.10	4,002.69	-904.59	-31.18	904.69	0.93	-0.66	-0.66	
4,687.00	89.20	180.50	4,002.74	-966.59	-31.51	966.69	2.50	-2.42	0.65	
4,749.00	90.60	180.30	4,002.85	-1,028.59	-31.94	1,028.69	2.28	2.26	-0.32	
4,810.00	89.40	179.90	4,002.85	-1,089.59	-32.05	1,089.69	2.07	-1.97	-0.66	
4,872.00	90.60	179.90	4,002.85	-1,151.58	-31.94	1,151.68	1.94	1.94	0.00	
4,934.00	90.00	180.40	4,002.52	-1,213.58	-32.10	1,213.68	1.26	-0.97	0.81	
4,996.00	89.30	180.40	4,002.90	-1,275.58	-32.53	1,275.68	1.13	-1.13	0.00	
5,057.00	90.20	180.10	4,003.17	-1,336.58	-32.80	1,336.68	1.56	1.48	-0.49	
5,120.00	88.10	179.30	4,004.10	-1,399.57	-32.47	1,399.67	3.57	-3.33	-1.27	
5,181.00	88.30	179.10	4,006.02	-1,460.53	-31.62	1,460.63	0.46	0.33	-0.33	
5,242.00	89.30	179.10	4,007.30	-1,521.51	-30.66	1,521.60	1.64	1.64	0.00	
5,304.00	90.20	179.20	4,007.57	-1,583.50	-29.74	1,583.59	1.46	1.45	0.16	
5,365.00	91.80	179.40	4,006.50	-1,644.48	-29.00	1,644.57	2.64	2.62	0.33	
5,427.00	88.40	179.80	4,006.39	-1,706.47	-28.56	1,706.56	5.52	-5.48	0.65	
5,489.00	89.00	179.60	4,007.80	-1,768.46	-28.24	1,768.54	1.02	0.97	-0.32	
5,551.00	89.20	179.10	4,008.77	-1,830.44	-27.54	1,830.53	0.87	0.32	-0.81	
5,613.00	89.40	179.00	4,009.53	-1,892.43	-26.51	1,892.51	0.36	0.32	-0.16	
5,676.00	89.80	179.30	4,009.97	-1,955.42	-25.57	1,955.50	0.79	0.63	0.48	
5,737.00	90.10	179.10	4,010.02	-2,016.42	-24.72	2,016.49	0.59	0.49	-0.33	
5,798.00	90.40	178.80	4,009.76	-2,077.41	-23.60	2,077.47	0.70	0.49	-0.49	
5,860.00	90.90	178.40	4,009.05	-2,139.38	-22.09	2,139.44	1.03	0.81	-0.65	
5,922.00	89.70	178.80	4,008.73	-2,201.36	-20.57	2,201.42	2.04	-1.94	0.65	
5,983.00	89.00	178.80	4,009.42	-2,262.34	-19.30	2,262.40	1.15	-1.15	0.00	
6,045.00	89.60	178.80	4,010.18	-2,324.33	-18.00	2,324.37	0.97	0.97	0.00	

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6,106.00	90.00	178.90	4,010.39	-2,385.31	-16.77	2,385.36	0.68	0.66	0.16	
6,168.00	90.00	178.80	4,010.39	-2,447.30	-15.53	2,447.34	0.16	0.00	-0.16	
6,229.00	90.10	178.40	4,010.34	-2,508.28	-14.04	2,508.32	0.68	0.16	-0.66	
6,291.00	89.70	178.40	4,010.45	-2,570.26	-12.31	2,570.28	0.65	-0.65	0.00	
6,353.00	89.10	177.90	4,011.10	-2,632.22	-10.31	2,632.24	1.26	-0.97	-0.81	
6,414.00	89.00	177.60	4,012.11	-2,693.17	-7.91	2,693.18	0.52	-0.16	-0.49	
6,476.00	88.40	177.50	4,013.51	-2,755.09	-5.26	2,755.10	0.98	-0.97	-0.16	
6,537.00	88.60	177.30	4,015.11	-2,816.01	-2.50	2,816.00	0.46	0.33	-0.33	
6,599.00	89.10	176.80	4,016.36	-2,877.91	0.69	2,877.90	1.14	0.81	-0.81	
6,661.00	90.20	176.70	4,016.73	-2,939.81	4.21	2,939.78	1.78	1.77	-0.16	
6,722.00	90.80	176.70	4,016.20	-3,000.71	7.72	3,000.67	0.98	0.98	0.00	
6,784.00	90.00	177.30	4,015.77	-3,062.62	10.96	3,062.57	1.61	-1.29	0.97	
6,846.00	90.20	177.30	4,015.66	-3,124.55	13.89	3,124.49	0.32	0.32	0.00	
6,907.00	90.90	176.80	4,015.08	-3,185.47	17.02	3,185.39	1.41	1.15	-0.82	
6,969.00	89.10	176.90	4,015.08	-3,247.37	20.43	3,247.29	2.91	-2.90	0.16	
7,030.00	89.00	176.70	4,016.09	-3,308.27	23.84	3,308.17	0.37	-0.16	-0.33	
7,092.00	89.10	176.30	4,017.12	-3,370.14	27.62	3,370.03	0.66	0.16	-0.65	
7,154.00	89.80	175.80	4,017.71	-3,431.99	31.89	3,431.87	1.39	1.13	-0.81	
7,215.00	90.20	175.40	4,017.71	-3,492.81	36.57	3,492.67	0.93	0.66	-0.66	
7,277.00	91.00	174.80	4,017.06	-3,554.58	41.87	3,554.42	1.61	1.29	-0.97	
7,338.00	90.70	174.40	4,016.16	-3,615.31	47.61	3,615.13	0.82	-0.49	-0.66	
7,400.00	90.20	175.40	4,015.67	-3,677.06	53.12	3,676.86	1.80	-0.81	1.61	
7,462.00	89.90	176.00	4,015.62	-3,738.88	57.77	3,738.67	1.08	-0.48	0.97	
7,524.00	90.40	175.60	4,015.45	-3,800.72	62.31	3,800.49	1.03	0.81	-0.65	
7,586.00	89.10	175.50	4,015.72	-3,862.53	67.12	3,862.28	2.10	-2.10	-0.16	
7,647.00	90.10	175.20	4,016.15	-3,923.32	72.06	3,923.06	1.71	1.64	-0.49	
7,709.00	91.00	174.90	4,015.55	-3,985.09	77.41	3,984.81	1.53	1.45	-0.48	
7,771.00	89.90	174.80	4,015.07	-4,046.84	82.98	4,046.54	1.78	-1.77	-0.16	
7,833.00	90.10	174.40	4,015.07	-4,108.56	88.81	4,108.24	0.72	0.32	-0.65	
7,894.00	88.80	175.00	4,015.65	-4,169.29	94.45	4,168.96	2.35	-2.13	0.98	
7,956.00	90.10	174.70	4,016.25	-4,231.04	100.01	4,230.68	2.15	2.10	-0.48	
8,018.00	90.60	174.10	4,015.87	-4,292.74	106.06	4,292.36	1.26	0.81	-0.97	
8,080.00	91.30	173.70	4,014.84	-4,354.38	112.65	4,353.98	1.30	1.13	-0.65	
8,142.00	91.80	173.10	4,013.16	-4,415.95	119.77	4,415.52	1.26	0.81	-0.97	
8,203.00	92.70	172.70	4,010.77	-4,476.43	127.31	4,475.98	1.61	1.48	-0.66	
8,265.00	93.90	172.40	4,007.20	-4,537.81	135.33	4,537.33	1.99	1.94	-0.48	
8,327.00	94.30	171.30	4,002.77	-4,599.02	144.10	4,598.52	1.88	0.65	-1.77	
8,388.00	94.90	171.10	3,997.88	-4,659.11	153.40	4,658.57	1.04	0.98	-0.33	
Last Inwell Survey										
8,440.00	94.90	171.10	3,993.43	-4,710.30	161.41	4,709.73	0.00	0.00	0.00	
Projection to TD - DT 30 1H PBHL										



Company:	Unit Petroleum	Local Co-ordinate Reference:	Well Dye Trust 30 #1H
Project:	Reno County, Kansas	TVD Reference:	14' KB @ 1813.00usft (UDI 331)
Site:	Section 30 T25S-R10W	MD Reference:	14' KB @ 1813.00usft (UDI 331)
Well:	Dye Trust 30 #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
8,388.00	3,997.88	-4,659.11	153.40	Last Inwell Survey
8,440.00	3,993.43	-4,710.30	161.41	Projection to TD

Checked By: _____ Approved By: _____ Date: _____