

# **Unit Petroleum**

**Reno County, Kansas [NAD 83]**

**Section 22 T25S-R10W**

**Haw 22 #1H**

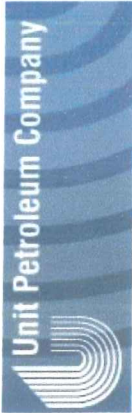
**Sidetrack 1**

**Design: Sidetrack 1**

## **Standard Survey Report**

**08 July, 2014**





Unit Petroleum  
 Project: Reno County, Kansas [NAD 83]  
 Site: Section 22 T25S-R10W  
 Well: Haw 22 #1H  
 Wellbore: Sidetrack 1  
 Design: Sidetrack 1 Design #1  
 Lat: 37° 52' 7.214 N  
 Long: 98° 24' 24.933 W  
 Pad GL: 1742.00  
 KB: 14' KB @ 1756.00ustf (UDI 331)



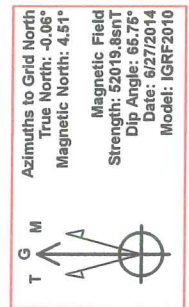
**SECTION DETAILS**

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
3069.00	7.50	70.20	3077.70	63.24	170.65	0.00	0.00	-64.31
3149.30	7.50	70.20	3136.52	65.86	177.94	0.00	0.00	-66.98
3894.51	56.00	180.64	3763.49	-251.45	223.85	8.00	114.87	250.04
4034.51	56.00	180.64	3827.37	-375.90	222.46	0.00	0.00	374.39
4315.78	89.87	180.64	3925.00	-541.71	219.48	12.00	0.01	640.32
8810.69	89.87	180.64	3933.00	-5135.33	185.01	0.00	0.00	5134.16

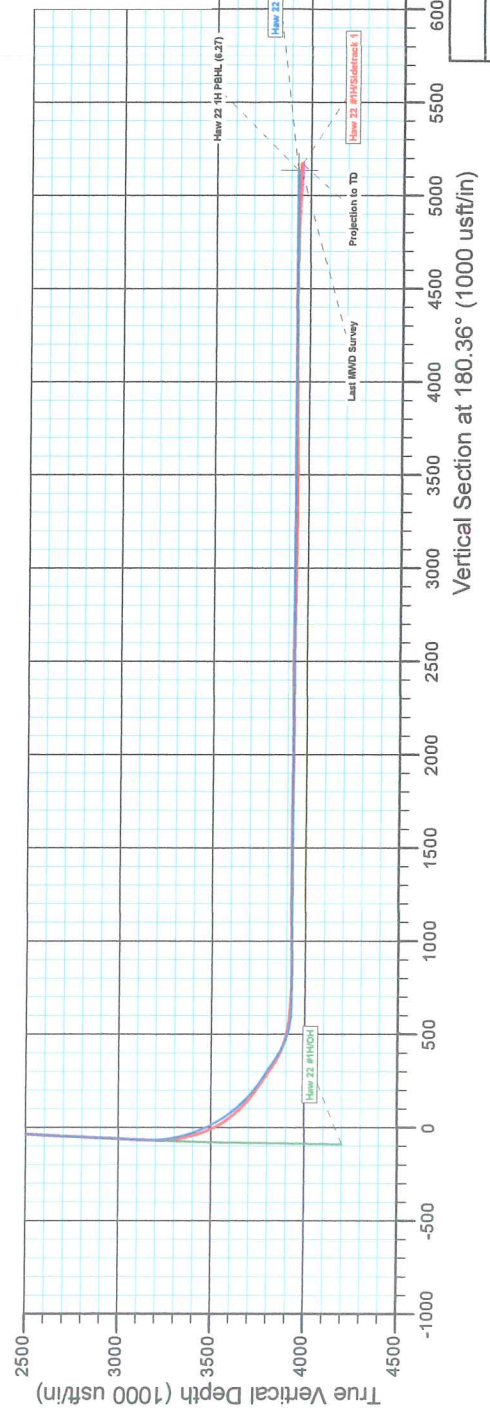
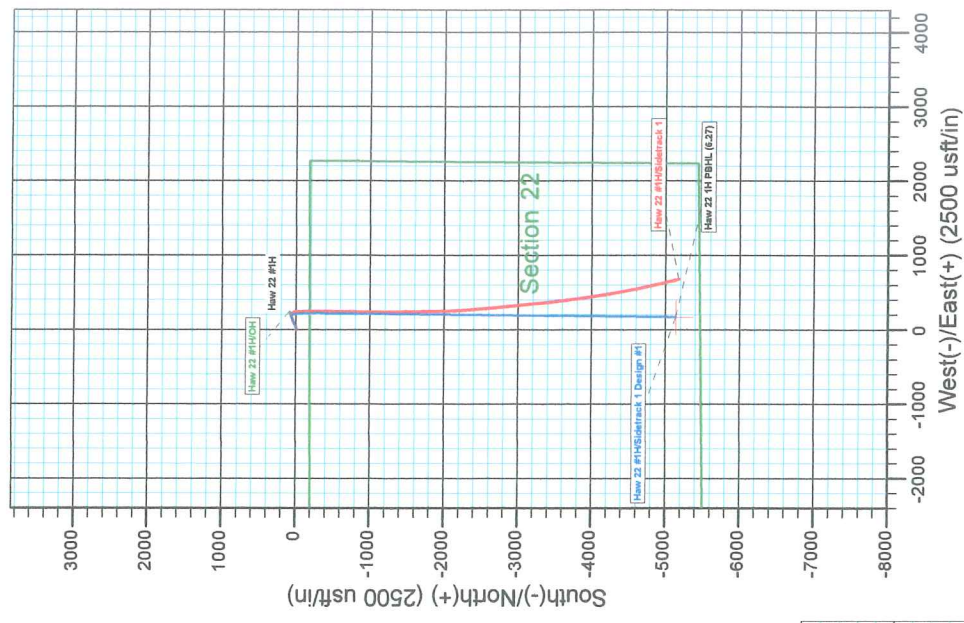
**WELL DETAILS: Haw 22 #1H**

+N/-S	+E/-W	Northing	Ground Level	Latitude	Longitude	Slot
0.00	0.00	1750023.00	1742.00	37° 52' 7.214 N	98° 24' 24.933 W	

**PROJECT DETAILS: Reno County, Kansas [NAD 83]**  
 Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Kansas Southern Zone  
 System Datum: Mean Sea Level



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







<b>Company:</b>	Unit Petroleum	<b>Local Co-ordinate Reference:</b>	Well Haw 22 #1H
<b>Project:</b>	Reno County, Kansas [NAD 83]	<b>TVD Reference:</b>	14' KB @ 1756.00usft (UDI 331)
<b>Site:</b>	Section 22 T25S-R10W	<b>MD Reference:</b>	14' KB @ 1756.00usft (UDI 331)
<b>Well:</b>	Haw 22 #1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Sidetrack 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Sidetrack 1	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Reno County, Kansas [NAD 83]		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Kansas Southern Zone		Using geodetic scale factor

<b>Site</b>	Section 22 T25S-R10W				
<b>Site Position:</b>		<b>Northing:</b>	1,750,023.00 usft	<b>Latitude:</b>	37° 52' 7.214 N
<b>From:</b>	Map	<b>Easting:</b>	1,339,200.00 usft	<b>Longitude:</b>	98° 24' 24.933 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.06 °

<b>Well</b>	Haw 22 #1H					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,750,023.00 usft	<b>Latitude:</b>	37° 52' 7.214 N
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	1,339,200.00 usft	<b>Longitude:</b>	98° 24' 24.933 W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,742.00 usft

<b>Wellbore</b>	Sidetrack 1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/27/2014	4.57	65.75	52,020

<b>Design</b>	Sidetrack 1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	3,089.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	180.36	

<b>Survey Program</b>	Date 7/7/2014			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
100.00	3,089.00	MWD (OH)	MWD	MWD - Standard
3,134.00	8,900.00	Sidetrack 1 (Sidetrack 1)	MWD	MWD - Standard

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.63	105.46	100.00	-0.15	0.53	0.14	0.63	0.63	0.00	
200.00	0.92	123.98	199.99	-0.74	1.73	0.73	0.38	0.29	18.52	
300.00	0.90	112.09	299.98	-1.49	3.12	1.47	0.19	-0.02	-11.89	
400.00	0.90	110.53	399.96	-2.06	4.58	2.03	0.02	0.00	-1.56	
500.00	0.74	105.96	499.95	-2.51	5.94	2.47	0.17	-0.16	-4.57	
600.00	0.55	117.06	599.95	-2.91	6.99	2.86	0.23	-0.19	11.10	
700.00	0.14	62.10	699.95	-3.07	7.52	3.02	0.48	-0.41	-54.96	
800.00	0.29	62.85	799.94	-2.89	7.86	2.84	0.15	0.15	0.75	
900.00	0.36	44.77	899.94	-2.56	8.30	2.50	0.12	0.07	-18.08	



<b>Company:</b>	Unit Petroleum	<b>Local Co-ordinate Reference:</b>	Well Haw 22 #1H
<b>Project:</b>	Reno County, Kansas [NAD 83]	<b>TVD Reference:</b>	14' KB @ 1756.00usft (UDI 331)
<b>Site:</b>	Section 22 T25S-R10W	<b>MD Reference:</b>	14' KB @ 1756.00usft (UDI 331)
<b>Well:</b>	Haw 22 #1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Sidetrack 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Sidetrack 1	<b>Database:</b>	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)
1,000.00	0.09	292.34	999.94	-2.30	8.45	2.25	0.40	-0.27	-112.43
1,100.00	0.08	175.03	1,099.94	-2.34	8.38	2.29	0.15	-0.01	-117.31
1,200.00	0.12	189.22	1,199.94	-2.52	8.37	2.46	0.05	0.04	14.19
1,300.00	0.12	103.22	1,299.94	-2.64	8.46	2.59	0.16	0.00	-86.00
1,400.00	0.23	206.53	1,399.94	-2.85	8.47	2.79	0.28	0.11	103.31
1,453.00	0.22	199.12	1,452.94	-3.04	8.39	2.98	0.06	-0.02	-13.98
1,566.00	0.20	259.80	1,565.94	-3.28	8.12	3.23	0.19	-0.02	53.70
1,661.00	1.20	83.90	1,660.93	-3.20	8.95	3.14	1.47	1.05	-185.16
1,755.00	3.60	69.80	1,754.85	-2.08	12.70	2.00	2.61	2.55	-15.00
1,850.00	5.70	71.80	1,849.53	0.43	19.98	-0.55	2.22	2.21	2.11
1,946.00	7.70	68.20	1,944.87	4.30	30.48	-4.50	2.13	2.08	-3.75
2,041.00	7.60	65.60	2,039.02	9.26	42.11	-9.53	0.38	-0.11	-2.74
2,137.00	7.70	66.20	2,134.17	14.48	53.78	-14.82	0.13	0.10	0.63
2,232.00	7.70	65.40	2,228.31	19.70	65.39	-20.11	0.11	0.00	-0.84
2,328.00	7.70	65.20	2,323.45	25.07	77.07	-25.56	0.03	0.00	-0.21
2,424.00	7.40	65.00	2,418.61	30.38	88.52	-30.94	0.31	-0.31	-0.21
2,519.00	7.60	65.70	2,512.80	35.55	99.79	-36.18	0.23	0.21	0.74
2,614.00	7.60	65.70	2,606.97	40.72	111.24	-41.42	0.00	0.00	0.00
2,709.00	7.90	69.40	2,701.10	45.61	123.07	-46.38	0.61	0.32	3.89
2,804.00	7.40	68.50	2,795.25	50.15	134.88	-50.99	0.54	-0.53	-0.95
2,898.00	8.00	70.60	2,888.41	54.54	146.68	-55.46	0.70	0.64	2.23
2,992.00	7.60	69.70	2,981.54	58.87	158.68	-59.86	0.44	-0.43	-0.96
3,089.00	7.50	70.20	3,077.70	63.24	170.65	-64.31	0.12	-0.10	0.52
3,134.00	7.30	70.50	3,122.32	65.19	176.11	-66.29	0.45	-0.44	0.67
3,165.00	8.00	73.00	3,153.04	66.47	180.03	-67.60	2.50	2.26	8.06
3,197.00	9.80	80.20	3,184.66	67.59	184.84	-68.75	6.60	5.63	22.50
3,228.00	12.00	89.60	3,215.10	68.06	190.67	-69.26	9.10	7.10	30.32
3,259.00	13.90	100.10	3,245.31	67.43	197.56	-68.67	9.73	6.13	33.87
3,291.00	14.90	111.80	3,276.32	65.23	205.16	-66.52	9.60	3.13	36.56
3,323.00	16.20	121.70	3,307.15	61.35	212.78	-62.69	9.22	4.06	30.94
3,355.00	16.80	131.90	3,337.84	55.92	220.02	-57.30	9.23	1.88	31.88
3,387.00	16.40	142.90	3,368.51	49.22	226.19	-50.64	9.89	-1.25	34.38
3,418.00	16.70	152.70	3,398.23	41.77	230.87	-43.22	9.05	0.97	31.61
3,450.00	17.90	160.50	3,428.79	33.05	234.63	-34.53	8.15	3.75	24.38
3,482.00	20.30	167.10	3,459.03	23.00	237.51	-24.49	10.08	7.50	20.63
3,513.00	23.20	173.00	3,487.82	11.70	239.45	-13.20	11.70	9.35	19.03
3,545.00	26.60	177.10	3,516.85	-1.72	240.58	0.21	11.91	10.63	12.81
3,577.00	30.40	178.40	3,544.96	-16.97	241.17	15.46	12.03	11.88	4.06
3,608.00	34.30	178.40	3,571.15	-33.55	241.64	32.03	12.58	12.58	0.00
3,640.00	38.20	178.50	3,596.95	-52.46	242.15	50.94	12.19	12.19	0.31
3,672.00	41.20	178.90	3,621.57	-72.90	242.61	71.37	9.41	9.38	1.25
3,704.00	43.80	179.30	3,645.16	-94.51	242.95	92.98	8.17	8.13	1.25
3,735.00	45.20	180.00	3,667.27	-116.24	243.08	114.71	4.79	4.52	2.26





<b>Company:</b>	Unit Petroleum	<b>Local Co-ordinate Reference:</b>	Well Haw 22 #1H
<b>Project:</b>	Reno County, Kansas [NAD 83]	<b>TVD Reference:</b>	14' KB @ 1756.00usft (UDI 331)
<b>Site:</b>	Section 22 T25S-R10W	<b>MD Reference:</b>	14' KB @ 1756.00usft (UDI 331)
<b>Well:</b>	Haw 22 #1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Sidetrack 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Sidetrack 1	<b>Database:</b>	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)	
3,767.00	48.10	180.20	3,689.23	-139.50	243.04	137.97	9.07	9.06	0.63	
3,798.00	51.00	179.90	3,709.34	-163.09	243.02	161.56	9.38	9.35	-0.97	
3,830.00	53.80	180.10	3,728.86	-188.44	243.02	186.91	8.76	8.75	0.63	
3,846.00	54.60	180.20	3,738.22	-201.42	242.98	199.89	5.03	5.00	0.63	
3,862.00	54.80	180.30	3,747.47	-214.48	242.92	212.95	1.35	1.25	0.63	
3,894.00	55.10	179.80	3,765.85	-240.67	242.90	239.14	1.59	0.94	-1.56	
3,925.00	55.30	179.90	3,783.54	-266.13	242.97	264.60	0.70	0.65	0.32	
3,957.00	55.60	179.80	3,801.69	-292.49	243.04	290.95	0.97	0.94	-0.31	
3,989.00	56.00	179.30	3,819.67	-318.95	243.25	317.42	1.80	1.25	-1.56	
4,021.00	57.30	179.60	3,837.26	-345.68	243.50	344.14	4.14	4.06	0.94	
4,052.00	61.00	180.40	3,853.16	-372.29	243.50	370.75	12.14	11.94	2.58	
4,084.00	65.10	181.40	3,867.66	-400.80	243.05	399.27	13.11	12.81	3.13	
4,116.00	69.30	181.70	3,880.06	-430.29	242.25	428.76	13.15	13.13	0.94	
4,147.00	72.00	181.50	3,890.33	-459.52	241.43	457.99	8.73	8.71	-0.65	
4,179.00	74.60	180.60	3,899.52	-490.16	240.87	488.64	8.56	8.13	-2.81	
4,210.00	77.50	180.40	3,906.99	-520.24	240.61	518.72	9.38	9.35	-0.65	
4,242.00	80.30	181.00	3,913.15	-551.64	240.22	550.12	8.94	8.75	1.88	
4,273.00	82.80	180.80	3,917.71	-582.30	239.74	580.78	8.09	8.06	-0.65	
4,282.00	83.40	181.40	3,918.79	-591.23	239.57	589.71	9.39	6.67	6.67	
4,356.00	87.10	181.40	3,924.92	-664.94	237.77	663.43	5.00	5.00	0.00	
4,418.00	88.10	181.30	3,927.51	-726.87	236.31	725.37	1.62	1.61	-0.16	
4,480.00	88.80	180.70	3,929.19	-788.84	235.23	787.34	1.49	1.13	-0.97	
4,541.00	89.50	180.30	3,930.10	-849.83	234.70	848.33	1.32	1.15	-0.66	
4,604.00	90.50	180.50	3,930.10	-912.82	234.26	911.33	1.62	1.59	0.32	
4,667.00	91.40	180.20	3,929.05	-975.81	233.87	974.32	1.51	1.43	-0.48	
4,728.00	90.50	179.50	3,928.04	-1,036.80	234.03	1,035.31	1.87	-1.48	-1.15	
4,791.00	89.90	179.00	3,927.82	-1,099.80	234.86	1,098.30	1.24	-0.95	-0.79	
4,853.00	90.20	179.20	3,927.77	-1,161.79	235.83	1,160.29	0.58	0.48	0.32	
4,915.00	89.20	179.30	3,928.09	-1,223.78	236.64	1,222.27	1.62	-1.61	0.16	
4,978.00	89.80	178.90	3,928.64	-1,286.77	237.63	1,285.25	1.14	0.95	-0.63	
5,041.00	90.80	179.50	3,928.31	-1,349.76	238.51	1,348.24	1.85	1.59	0.95	
5,102.00	88.80	180.00	3,928.52	-1,410.76	238.78	1,409.23	3.38	-3.28	0.82	
5,164.00	89.50	179.50	3,929.44	-1,472.75	239.05	1,471.22	1.39	1.13	-0.81	
5,226.00	89.80	179.30	3,929.82	-1,534.75	239.70	1,533.21	0.58	0.48	-0.32	
5,287.00	90.10	179.40	3,929.88	-1,595.74	240.39	1,594.20	0.52	0.49	0.16	
5,349.00	90.30	179.00	3,929.66	-1,657.74	241.25	1,656.19	0.72	0.32	-0.65	
5,410.00	90.90	178.50	3,929.02	-1,718.72	242.58	1,717.16	1.28	0.98	-0.82	
5,472.00	89.10	179.10	3,929.02	-1,780.70	243.88	1,779.13	3.06	-2.90	0.97	
5,533.00	88.90	179.20	3,930.08	-1,841.69	244.79	1,840.11	0.37	-0.33	0.16	
5,594.00	88.80	178.20	3,931.31	-1,902.66	246.17	1,901.07	1.65	-0.16	-1.64	
5,655.00	88.90	178.10	3,932.53	-1,963.61	248.14	1,962.02	0.23	0.16	-0.16	
5,717.00	88.70	177.90	3,933.83	-2,025.56	250.30	2,023.95	0.46	-0.32	-0.32	
5,778.00	89.80	178.20	3,934.63	-2,086.52	252.38	2,084.89	1.87	1.80	0.49	

Survey Report



<b>Company:</b>	Unit Petroleum	<b>Local Co-ordinate Reference:</b>	Well Haw 22 #1H
<b>Project:</b>	Reno County, Kansas [NAD 83]	<b>TVD Reference:</b>	14' KB @ 1756.00usft (UDI 331)
<b>Site:</b>	Section 22 T25S-R10W	<b>MD Reference:</b>	14' KB @ 1756.00usft (UDI 331)
<b>Well:</b>	Haw 22 #1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Sidetrack 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Sidetrack 1	<b>Database:</b>	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)
5,840.00	89.80	177.40	3,934.85	-2,148.47	254.76	2,146.83	1.29	0.00	-1.29
5,902.00	90.50	176.40	3,934.68	-2,210.38	258.11	2,208.72	1.97	1.13	-1.61
5,963.00	91.70	176.40	3,933.51	-2,271.25	261.94	2,269.56	1.97	1.97	0.00
6,025.00	90.20	176.10	3,932.49	-2,333.11	266.00	2,331.39	2.47	-2.42	-0.48
6,086.00	90.30	175.80	3,932.22	-2,393.95	270.30	2,392.21	0.52	0.16	-0.49
6,148.00	89.80	175.60	3,932.16	-2,455.78	274.95	2,454.00	0.87	-0.81	-0.32
6,209.00	89.60	175.00	3,932.48	-2,516.57	279.95	2,514.76	1.04	-0.33	-0.98
6,272.00	88.90	175.00	3,933.31	-2,579.33	285.44	2,577.48	1.11	-1.11	0.00
6,334.00	89.00	175.10	3,934.44	-2,641.08	290.79	2,639.21	0.23	0.16	0.16
6,395.00	88.80	174.30	3,935.62	-2,701.81	296.42	2,699.90	1.35	-0.33	-1.31
6,457.00	88.70	173.90	3,936.97	-2,763.47	302.79	2,761.51	0.66	-0.16	-0.65
6,518.00	89.20	173.70	3,938.09	-2,824.10	309.38	2,822.10	0.88	0.82	-0.33
6,582.00	89.80	174.00	3,938.64	-2,887.73	316.24	2,885.69	1.05	0.94	0.47
6,646.00	90.00	173.80	3,938.76	-2,951.37	323.04	2,949.28	0.44	0.31	-0.31
6,708.00	90.10	173.40	3,938.70	-3,012.98	329.95	3,010.85	0.67	0.16	-0.65
6,770.00	89.20	173.70	3,939.08	-3,074.59	336.91	3,072.41	1.53	-1.45	0.48
6,833.00	89.00	174.50	3,940.07	-3,137.24	343.39	3,135.03	1.31	-0.32	1.27
6,896.00	88.80	173.80	3,941.28	-3,199.90	349.81	3,197.64	1.16	-0.32	-1.11
6,959.00	88.80	174.90	3,942.60	-3,262.58	356.01	3,260.28	1.75	0.00	1.75
7,023.00	89.80	175.20	3,943.38	-3,326.34	361.53	3,324.00	1.63	1.56	0.47
7,087.00	90.00	175.30	3,943.49	-3,390.12	366.83	3,387.75	0.35	0.31	0.16
7,150.00	90.30	174.30	3,943.33	-3,452.86	372.54	3,450.45	1.66	0.48	-1.59
7,214.00	90.80	174.20	3,942.71	-3,516.53	378.95	3,514.08	0.80	0.78	-0.16
7,277.00	91.10	173.80	3,941.67	-3,579.18	385.54	3,576.69	0.79	0.48	-0.63
7,340.00	90.80	173.20	3,940.62	-3,641.77	392.67	3,639.23	1.06	-0.48	-0.95
7,404.00	90.60	172.60	3,939.84	-3,705.27	400.58	3,702.68	0.99	-0.31	-0.94
7,468.00	89.90	172.00	3,939.56	-3,768.69	409.15	3,766.05	1.44	-1.09	-0.94
7,531.00	90.00	172.20	3,939.62	-3,831.09	417.81	3,828.39	0.35	0.16	0.32
7,594.00	90.30	171.80	3,939.45	-3,893.48	426.58	3,890.72	0.79	0.48	-0.63
7,656.00	90.50	171.50	3,939.02	-3,954.82	435.58	3,952.01	0.58	0.32	-0.48
7,719.00	91.20	171.30	3,938.09	-4,017.11	445.00	4,014.23	1.16	1.11	-0.32
7,783.00	90.60	171.20	3,937.08	-4,080.35	454.74	4,077.42	0.95	-0.94	-0.16
7,846.00	90.70	170.80	3,936.37	-4,142.57	464.59	4,139.57	0.65	0.16	-0.63
7,908.00	89.10	171.10	3,936.47	-4,203.80	474.34	4,200.74	2.63	-2.58	0.48
7,971.00	89.50	170.50	3,937.24	-4,265.98	484.42	4,262.86	1.14	0.63	-0.95
8,034.00	90.50	170.10	3,937.24	-4,328.08	495.03	4,324.89	1.71	1.59	-0.63
8,096.00	89.60	169.80	3,937.19	-4,389.13	505.85	4,385.87	1.53	-1.45	-0.48
8,159.00	89.60	169.70	3,937.63	-4,451.12	517.06	4,447.79	0.16	0.00	-0.16
8,223.00	89.40	169.10	3,938.19	-4,514.03	528.83	4,510.62	0.99	-0.31	-0.94
8,286.00	89.60	168.90	3,938.74	-4,575.87	540.85	4,572.38	0.45	0.32	-0.32
8,349.00	90.00	168.70	3,938.96	-4,637.67	553.09	4,634.10	0.71	0.63	-0.32
8,412.00	90.00	168.40	3,938.96	-4,699.41	565.60	4,695.77	0.48	0.00	-0.48
8,475.00	89.40	167.80	3,939.29	-4,761.06	578.59	4,757.33	1.35	-0.95	-0.95
8,539.00	88.40	166.80	3,940.52	-4,823.48	592.65	4,819.66	2.21	-1.56	-1.56





<b>Company:</b>	Unit Petroleum	<b>Local Co-ordinate Reference:</b>	Well Haw 22 #1H
<b>Project:</b>	Reno County, Kansas [NAD 83]	<b>TVD Reference:</b>	14' KB @ 1756.00usft (UDI 331)
<b>Site:</b>	Section 22 T25S-R10W	<b>MD Reference:</b>	14' KB @ 1756.00usft (UDI 331)
<b>Well:</b>	Haw 22 #1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Sidetrack 1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Sidetrack 1	<b>Database:</b>	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)
8,603.00	88.00	166.60	3,942.53	-4,885.73	607.37	4,881.82	0.70	-0.63	-0.31
8,667.00	87.10	166.30	3,945.26	-4,947.89	622.35	4,943.89	1.48	-1.41	-0.47
8,730.00	87.00	166.20	3,948.51	-5,009.01	637.30	5,004.90	0.22	-0.16	-0.16
8,740.07	87.06	166.18	3,949.03	-5,018.77	639.71	5,014.65	0.66	0.65	-0.16
<b>Haw 22 1H PBHL (6.27)</b>									
8,792.00	87.40	166.10	3,951.53	-5,069.13	652.13	5,064.94	0.66	0.65	-0.16
8,855.00	89.00	167.00	3,953.51	-5,130.37	666.77	5,126.08	2.91	2.54	1.43
<b>Last MWD Survey</b>									
8,900.00	89.00	167.00	3,954.30	-5,174.21	676.90	5,169.86	0.00	0.00	0.00
<b>Projection to TD</b>									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,855.00	3,953.51	-5,130.37	666.77	Last MWD Survey
8,900.00	3,954.30	-5,174.21	676.90	Projection to TD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_