



KPK

SURVEY REPORT

UPRR 42 PAN AM AF #3

2/27/2015



The **Ultimate Partner** In Wellbore Placement

CUSTOMER **KPK**
PROJECT **UPRR 42 PAN AM AF #3**
FIELD **SPINDLE**

SDI JOB NO. **259770**
SDI DISTRICT **Casper**
SDI KIT/UNIT

SITE INFORMATION

Site Name **WELD**
Lat/Long
Northing
Easting

Section **35**
Township **2N**
Range **67W**

MAP INFORMATION

North Reference **True North**
Grid Correction
System
Datum
Map Zone



WELL INFORMATION

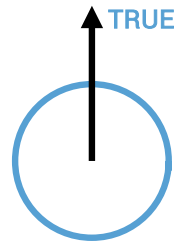
Lat/Long **40.10058° N, 104.8554078° W**
Northing
Easting
UWI **05-123-09096 UWBI 05-123-09096**

DEPTH AND ELEVATION REFERENCE

Ground Level **4955 ft above Mean Sea Level**
Reference Datum **GL**
Reference Height **0 ft above G.L.**
Reference Elevation **4955 ft**

VERTICAL SECTION REFERENCE

+N/-S **0 ft**
+E/-W **0 ft**
Proposal Direction
Calculation Method **Minimum Curvature**



LOCAL GRAVITY REFERENCE INFORMATION

Local Gravity **999.043 mG [computed]**

WELL NOTES

Keeper gyro survey wireline run in 4.5" casing, from surface to 4797' MD. All depths reference ground level

OPERATORS

C KIRBY

SDI Operator Name (Printed)

SIGNATURE

DATE

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg	DLS °/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
101.22	0.25	306.98	101.22	0.21	0.14	-0.18	0.23	306.98	0.25
127.34	0.30	299.72	127.34	0.33	0.20	-0.28	0.35	305.59	0.21
150.76	0.48	278.12	150.76	0.48	0.25	-0.44	0.50	299.65	1.01
177.39	0.62	279.33	177.38	0.74	0.29	-0.69	0.75	292.62	0.51
200.34	0.90	280.28	200.33	1.04	0.34	-0.99	1.04	288.95	1.21
226.51	0.91	286.21	226.51	1.45	0.43	-1.39	1.46	287.34	0.36
251.78	1.30	283.81	251.77	1.94	0.56	-1.86	1.94	286.71	1.53
277.33	1.57	285.58	277.31	2.58	0.72	-2.48	2.58	286.23	1.08
302.42	1.78	287.73	302.39	3.31	0.93	-3.18	3.31	286.34	0.86
327.54	1.82	288.54	327.50	4.10	1.18	-3.93	4.10	286.68	0.19
353.27	1.77	290.01	353.21	4.90	1.44	-4.69	4.91	287.11	0.26
375.47	1.77	290.53	375.40	5.59	1.68	-5.33	5.59	287.50	0.07
400.63	1.76	291.10	400.55	6.36	1.96	-6.06	6.36	287.90	0.10
426.36	1.69	291.93	426.27	7.13	2.24	-6.78	7.14	288.29	0.26
452.13	1.60	301.36	452.03	7.85	2.57	-7.44	7.87	289.06	1.11
476.80	1.56	305.74	476.69	8.49	2.94	-8.00	8.53	290.20	0.51
502.64	1.45	303.71	502.52	9.13	3.33	-8.56	9.19	291.26	0.48
527.90	1.22	302.76	527.78	9.69	3.65	-9.05	9.76	291.98	0.91
553.20	0.98	293.76	553.07	10.16	3.89	-9.48	10.24	292.30	1.19
575.43	0.98	291.93	575.29	10.54	4.03	-9.83	10.62	292.32	0.14
601.34	0.98	290.41	601.20	10.97	4.19	-10.24	11.06	292.28	0.10
627.18	1.00	290.15	627.04	11.42	4.35	-10.66	11.51	292.20	0.08
653.17	0.91	280.25	653.03	11.85	4.46	-11.07	11.94	291.95	0.72
678.54	0.91	276.34	678.40	12.25	4.52	-11.47	12.33	291.51	0.24
700.95	1.05	267.59	700.79	12.62	4.53	-11.85	12.69	290.93	0.94
726.96	1.17	262.78	726.80	13.09	4.49	-12.35	13.14	289.97	0.59
752.40	1.28	259.58	752.23	13.59	4.40	-12.89	13.62	288.86	0.50
778.55	1.44	265.00	778.38	14.16	4.32	-13.51	14.18	287.75	0.78
801.05	1.54	264.59	800.87	14.71	4.27	-14.09	14.72	286.86	0.46
826.50	1.22	255.90	826.31	15.27	4.17	-14.69	15.27	285.85	1.51
851.66	1.49	263.65	851.47	15.81	4.07	-15.28	15.81	284.91	1.30

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	CLOSURE DISTANCE	CLOSURE DIRECTION	DLS
ft	deg	deg	ft	ft	ft	ft	ft	deg	°/100ft
877.44	1.33	259.92	877.24	16.39	3.98	-15.91	16.40	284.05	0.73
903.27	1.18	257.11	903.06	16.90	3.87	-16.46	16.91	283.23	0.63
929.11	1.19	255.99	928.90	17.37	3.74	-16.98	17.39	282.44	0.10
950.79	1.29	259.34	950.58	17.79	3.64	-17.44	17.81	281.81	0.58
976.62	1.24	262.02	976.40	18.30	3.55	-18.00	18.34	281.16	0.31
1002.10	0.98	245.42	1001.87	18.73	3.42	-18.47	18.78	280.50	1.60
1027.53	1.02	249.28	1027.30	19.08	3.25	-18.88	19.16	279.77	0.31
1052.40	1.01	247.89	1052.17	19.43	3.09	-19.29	19.54	279.10	0.11
1077.87	0.93	246.15	1077.63	19.77	2.92	-19.69	19.90	278.44	0.33
1103.35	0.91	247.34	1103.10	20.10	2.76	-20.06	20.25	277.84	0.13
1125.21	0.87	244.29	1124.96	20.36	2.62	-20.37	20.54	277.34	0.28
1151.06	0.98	240.13	1150.81	20.66	2.43	-20.74	20.88	276.68	0.51
1178.76	0.74	239.71	1178.51	20.96	2.22	-21.10	21.22	276.01	0.84
1200.48	0.74	244.28	1200.22	21.16	2.09	-21.35	21.45	275.59	0.27
1228.55	0.72	242.26	1228.29	21.43	1.93	-21.67	21.75	275.08	0.12
1252.75	0.76	244.00	1252.49	21.66	1.79	-21.94	22.02	274.66	0.19
1277.07	0.50	252.71	1276.81	21.87	1.68	-22.19	22.25	274.34	1.11
1300.75	0.52	250.33	1300.49	22.05	1.62	-22.39	22.45	274.13	0.11
1328.99	0.52	250.11	1328.73	22.26	1.53	-22.63	22.68	273.87	0.01
1353.23	0.50	246.00	1352.97	22.43	1.45	-22.83	22.88	273.64	0.17
1377.56	0.55	245.35	1377.29	22.60	1.36	-23.04	23.08	273.38	0.21
1401.16	0.50	248.69	1400.89	22.77	1.27	-23.24	23.27	273.14	0.24
1425.54	0.46	259.42	1425.27	22.95	1.22	-23.43	23.46	272.97	0.41
1452.55	0.46	260.39	1452.28	23.14	1.18	-23.64	23.67	272.85	0.03
1476.84	0.49	261.68	1476.57	23.33	1.15	-23.84	23.87	272.75	0.15
1501.22	0.45	264.49	1500.95	23.52	1.12	-24.04	24.07	272.67	0.19
1529.07	0.47	266.95	1528.80	23.73	1.11	-24.27	24.29	272.61	0.09
1553.37	0.60	268.99	1553.11	23.95	1.10	-24.49	24.52	272.57	0.52
1577.66	0.49	270.74	1577.39	24.17	1.10	-24.72	24.75	272.54	0.43
1601.29	0.56	265.84	1601.02	24.37	1.09	-24.94	24.96	272.50	0.34
1625.58	0.60	264.36	1625.30	24.61	1.07	-25.19	25.21	272.43	0.18
1653.90	0.70	261.76	1653.62	24.90	1.03	-25.50	25.52	272.31	0.36

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg	DLS °/100ft
1677.04	0.78	264.20	1676.77	25.18	0.99	-25.80	25.82	272.21	0.37
1700.76	0.72	276.94	1700.48	25.48	1.00	-26.11	26.13	272.18	0.74
1725.26	0.67	274.62	1724.98	25.77	1.03	-26.40	26.42	272.23	0.22
1752.89	0.67	264.05	1752.61	26.08	1.02	-26.73	26.74	272.19	0.45
1777.17	0.70	263.75	1776.88	26.35	0.99	-27.02	27.03	272.10	0.13
1801.23	0.70	262.66	1800.94	26.63	0.96	-27.31	27.33	272.01	0.06
1828.55	0.72	268.91	1828.26	26.95	0.93	-27.65	27.66	271.93	0.29
1852.59	0.68	274.54	1852.30	27.23	0.94	-27.94	27.95	271.93	0.32
1876.74	0.57	280.04	1876.45	27.49	0.97	-28.20	28.22	271.97	0.53
1900.14	0.63	280.77	1899.84	27.74	1.02	-28.44	28.46	272.05	0.27
1928.38	0.66	275.28	1928.09	28.05	1.06	-28.76	28.77	272.11	0.25
1952.45	0.69	271.63	1952.15	28.33	1.08	-29.04	29.06	272.13	0.22
1975.84	0.67	274.32	1975.54	28.60	1.09	-29.32	29.34	272.13	0.17
2003.87	0.60	274.74	2003.57	28.91	1.12	-29.63	29.65	272.16	0.24
2027.91	0.65	278.03	2027.61	29.17	1.15	-29.89	29.91	272.20	0.26
2052.10	0.54	293.84	2051.80	29.42	1.21	-30.13	30.15	272.30	0.81
2078.87	0.54	306.52	2078.57	29.66	1.34	-30.34	30.37	272.52	0.45
2102.96	0.51	293.99	2102.65	29.87	1.45	-30.53	30.57	272.71	0.49
2127.17	0.47	327.28	2126.87	30.05	1.57	-30.68	30.73	272.94	1.17
2150.62	0.62	329.08	2150.32	30.21	1.76	-30.80	30.85	273.28	0.66
2178.67	0.67	343.67	2178.37	30.40	2.05	-30.93	30.99	273.80	0.61
2202.89	0.57	344.85	2202.58	30.54	2.30	-31.00	31.08	274.25	0.41
2226.36	0.60	343.12	2226.05	30.66	2.53	-31.06	31.17	274.66	0.14
2250.58	0.68	338.70	2250.26	30.81	2.79	-31.15	31.28	275.11	0.41
2278.67	0.71	353.18	2278.36	30.98	3.12	-31.23	31.39	275.70	0.64
2302.28	0.68	356.45	2301.96	31.08	3.40	-31.26	31.44	276.21	0.24
2326.41	0.86	347.71	2326.09	31.21	3.72	-31.31	31.53	276.78	0.92
2350.71	0.76	357.73	2350.39	31.34	4.06	-31.35	31.61	277.38	0.73
2378.25	0.69	348.39	2377.92	31.47	4.41	-31.39	31.70	277.99	0.49
2401.79	0.85	354.68	2401.46	31.59	4.72	-31.44	31.79	278.54	0.74
2426.11	0.78	352.22	2425.78	31.72	5.06	-31.48	31.88	279.14	0.29
2453.68	0.63	351.00	2453.35	31.85	5.40	-31.53	31.99	279.72	0.56

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg	DLS °/100ft
2477.87	0.74	343.98	2477.54	31.99	5.68	-31.59	32.10	280.20	0.55
2501.56	0.77	338.69	2501.23	32.16	5.98	-31.69	32.25	280.68	0.33
2525.14	0.71	356.03	2524.81	32.30	6.27	-31.76	32.37	281.17	0.98
2553.15	0.76	353.86	2552.81	32.42	6.63	-31.79	32.47	281.77	0.23
2577.05	0.82	343.02	2576.71	32.57	6.95	-31.86	32.61	282.31	0.68
2600.24	0.54	352.62	2599.90	32.70	7.22	-31.92	32.73	282.74	1.32
2627.99	0.74	359.27	2627.65	32.80	7.52	-31.94	32.81	283.26	0.75
2651.91	0.90	0.36	2651.56	32.89	7.87	-31.94	32.89	283.83	0.67
2675.05	0.89	8.59	2674.71	32.95	8.22	-31.91	32.95	284.45	0.55
2702.91	1.03	13.79	2702.56	32.98	8.68	-31.82	32.98	285.26	0.59
2726.73	1.03	14.01	2726.37	32.99	9.10	-31.72	33.00	286.00	0.03
2750.03	1.22	7.86	2749.67	33.02	9.55	-31.63	33.04	286.79	0.98
2777.17	1.67	1.47	2776.80	33.15	10.23	-31.58	33.20	287.94	1.77
2801.25	1.86	23.36	2800.87	33.18	10.94	-31.42	33.27	289.20	2.89
2828.91	1.30	38.61	2828.52	32.99	11.60	-31.04	33.14	290.48	2.52
2852.21	0.97	5.26	2851.82	32.91	12.00	-30.86	33.11	291.24	3.11
2876.07	1.06	357.06	2875.67	33.02	12.42	-30.85	33.26	291.93	0.73
2900.06	1.17	15.65	2899.66	33.08	12.88	-30.80	33.38	292.69	1.57
2927.25	0.94	353.13	2926.84	33.16	13.37	-30.75	33.53	293.49	1.73
2951.25	0.98	19.15	2950.84	33.22	13.76	-30.71	33.65	294.13	1.81
2975.16	0.77	25.59	2974.75	33.18	14.10	-30.57	33.66	294.75	0.97
3002.38	0.72	344.54	3001.96	33.23	14.43	-30.54	33.77	295.29	1.93
3026.29	0.78	17.34	3025.87	33.30	14.73	-30.53	33.89	295.75	1.79
3053.59	0.55	37.03	3053.17	33.24	15.01	-30.40	33.90	296.28	1.18
3076.84	0.73	9.28	3076.42	33.21	15.24	-30.30	33.92	296.70	1.51
3100.91	0.61	6.76	3100.49	33.25	15.52	-30.27	34.01	297.15	0.49
3128.81	0.70	334.58	3128.38	33.38	15.82	-30.32	34.20	297.55	1.35
3152.34	0.76	358.49	3151.91	33.52	16.11	-30.39	34.39	297.93	1.31
3176.31	0.33	342.89	3175.88	33.60	16.33	-30.41	34.52	298.24	1.89
3200.27	0.11	6.19	3199.85	33.64	16.42	-30.43	34.58	298.35	0.95
3228.12	0.15	310.23	3227.69	33.68	16.47	-30.45	34.62	298.41	0.45
3251.54	0.26	260.27	3251.11	33.75	16.48	-30.53	34.69	298.36	0.84

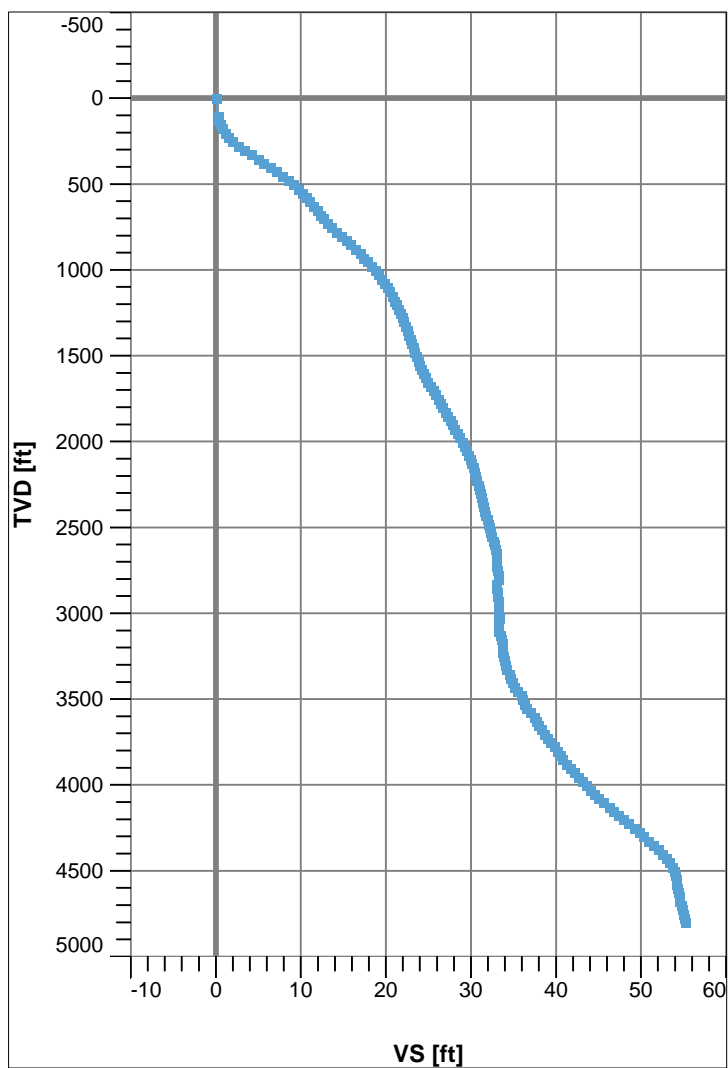
MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	CLOSURE DISTANCE	CLOSURE DIRECTION	DLS
ft	deg	deg	ft	ft	ft	ft	ft	deg	°/100ft
3275.49	0.32	265.44	3275.06	33.86	16.47	-30.65	34.79	298.25	0.29
3303.52	0.50	337.65	3303.09	34.01	16.57	-30.77	34.95	298.31	1.80
3326.29	0.72	313.65	3325.86	34.20	16.76	-30.91	35.17	298.47	1.46
3353.77	0.49	298.49	3353.34	34.46	16.94	-31.14	35.45	298.54	1.02
3377.45	0.47	229.44	3377.02	34.61	16.92	-31.30	35.59	298.40	2.29
3403.66	0.74	250.59	3403.22	34.81	16.80	-31.54	35.74	298.04	1.32
3427.23	0.91	258.57	3426.79	35.11	16.71	-31.87	35.99	297.67	0.88
3450.76	0.96	282.85	3450.33	35.47	16.72	-32.25	36.32	297.40	1.68
3477.69	0.71	316.04	3477.24	35.84	16.89	-32.58	36.70	297.40	1.98
3501.24	0.53	328.83	3500.80	36.04	17.08	-32.74	36.93	297.56	0.94
3528.81	0.51	297.10	3528.37	36.26	17.25	-32.92	37.16	297.66	1.04
3550.67	0.94	272.13	3550.23	36.53	17.30	-33.18	37.42	297.54	2.38
3576.81	1.16	265.49	3576.36	36.98	17.29	-33.66	37.84	297.19	0.95
3603.11	0.88	247.83	3602.65	37.39	17.19	-34.11	38.20	296.75	1.57
3626.37	0.85	249.58	3625.92	37.68	17.06	-34.44	38.43	296.36	0.19
3651.81	0.57	264.28	3651.35	37.95	16.99	-34.74	38.67	296.06	1.30
3677.05	0.86	259.38	3676.59	38.24	16.94	-35.05	38.93	295.79	1.20
3701.07	0.90	259.54	3700.61	38.57	16.87	-35.41	39.23	295.47	0.17
3726.07	1.19	248.89	3725.60	38.96	16.74	-35.85	39.57	295.03	1.39
3750.31	1.04	251.83	3749.84	39.35	16.58	-36.29	39.90	294.55	0.67
3776.70	1.03	247.13	3776.22	39.73	16.41	-36.74	40.24	294.08	0.32
3801.88	0.87	253.57	3801.40	40.08	16.27	-37.13	40.54	293.67	0.74
3828.24	0.87	257.85	3827.76	40.43	16.17	-37.52	40.86	293.32	0.25
3851.06	1.06	258.47	3850.57	40.77	16.10	-37.90	41.17	293.01	0.80
3877.54	1.10	258.24	3877.04	41.21	15.99	-38.38	41.58	292.62	0.16
3903.43	1.25	259.53	3902.94	41.69	15.89	-38.90	42.02	292.22	0.58
3926.31	1.08	259.40	3925.81	42.11	15.81	-39.36	42.42	291.88	0.71
3952.15	1.03	261.66	3951.65	42.54	15.73	-39.83	42.82	291.55	0.25
3978.15	1.15	269.15	3977.64	43.01	15.69	-40.32	43.27	291.26	0.70
4001.11	1.26	269.05	4000.59	43.47	15.68	-40.81	43.72	291.02	0.48
4027.73	1.23	269.42	4027.21	44.03	15.68	-41.38	44.25	290.75	0.11
4054.06	1.10	274.87	4053.54	44.55	15.69	-41.92	44.76	290.53	0.63

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	CLOSURE DISTANCE	CLOSURE DIRECTION	DLS
ft	deg	deg	ft	ft	ft	ft	ft	deg	°/100ft
4075.96	1.15	288.29	4075.43	44.98	15.78	-42.34	45.18	290.44	1.22
4102.10	1.40	288.81	4101.56	45.55	15.97	-42.89	45.76	290.42	0.95
4128.25	1.33	285.30	4127.71	46.18	16.15	-43.48	46.38	290.38	0.41
4150.42	1.41	282.84	4149.86	46.71	16.28	-43.99	46.91	290.30	0.47
4175.00	1.30	285.32	4174.44	47.29	16.42	-44.56	47.49	290.23	0.51
4200.16	1.46	289.13	4199.60	47.89	16.60	-45.14	48.09	290.19	0.71
4225.40	1.47	281.12	4224.82	48.53	16.77	-45.76	48.73	290.12	0.81
4250.49	1.36	276.38	4249.90	49.15	16.86	-46.37	49.34	289.98	0.63
4275.09	1.27	276.91	4274.50	49.71	16.93	-46.93	49.89	289.83	0.40
4300.46	1.32	277.40	4299.87	50.28	17.00	-47.50	50.45	289.69	0.22
4325.45	1.42	277.05	4324.85	50.87	17.07	-48.09	51.03	289.55	0.40
4350.66	1.29	267.05	4350.05	51.45	17.10	-48.68	51.60	289.35	1.07
4375.32	1.19	265.18	4374.70	51.95	17.06	-49.22	52.09	289.12	0.45
4400.56	1.20	265.75	4399.94	52.45	17.02	-49.74	52.57	288.89	0.06
4425.12	1.21	262.20	4424.50	52.93	16.97	-50.25	53.04	288.65	0.31
4450.38	1.01	244.64	4449.75	53.35	16.83	-50.72	53.44	288.36	1.54
4477.33	0.68	237.48	4476.70	53.64	16.65	-51.07	53.71	288.05	1.29
4501.45	0.67	238.55	4500.82	53.83	16.50	-51.31	53.89	287.82	0.07
4526.62	0.40	245.15	4525.98	54.00	16.38	-51.51	54.06	287.64	1.10
4551.50	0.74	215.56	4550.86	54.12	16.22	-51.68	54.17	287.42	1.76
4576.43	0.27	177.94	4575.79	54.16	16.03	-51.78	54.20	287.20	2.19
4600.38	0.60	221.39	4599.74	54.20	15.88	-51.86	54.23	287.02	1.84
4625.67	0.71	231.68	4625.03	54.35	15.68	-52.07	54.38	286.76	0.64
4651.13	0.39	191.25	4650.49	54.44	15.50	-52.21	54.46	286.54	1.90
4676.30	0.82	216.70	4675.65	54.50	15.27	-52.33	54.51	286.27	1.98
4700.06	0.75	238.11	4699.41	54.67	15.05	-52.56	54.68	285.98	1.26
4725.16	0.68	223.70	4724.51	54.85	14.86	-52.80	54.85	285.72	0.76
4750.23	0.41	223.71	4749.59	54.97	14.69	-52.97	54.97	285.50	1.05
4775.59	0.72	218.34	4774.94	55.07	14.50	-53.13	55.07	285.26	1.22
4797.82	0.72	205.10	4797.17	55.15	14.26	-53.28	55.15	284.98	0.75



Name : Keeper Gyro Wireline Survey: Inrun
Generated : 3/3/2015 16:53:31 Mountain Standard Time

VS View



Plan View

