Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 11	75.91	-23.99	n/a	n/a	.500	Master GW# 11	5,078,863.23	674,366.61	143.24
GWD 13	93.25	-6.17	11	17.34	.500	Master GW# 13	5,078,864.43	674,361.46	143.22
TEE 1	94.68	-4.70	13	1.43	.500		5,078,864.54	674,361.04	143.22
TEE 2	95.68	-3.68	13	2.43	.500		5,078,864.61	674,360.74	143.22
GWD 21	96.70	-2.63	13	3.45	.500	Master GW# 21	5,078,864.68	674,360.44	143.22
GWD 23	97.35	-1.97	21	.66	.500	Master GW# 23	5,078,864.72	674,360.25	143.22
VLV 1	99.26	-.05	23	1.91	.500	VALVE MP 1475.6	5,078,864.86	674,359.68	143.21
GWD 27	101.22	1.93	23	3.86	.500	Master GW# 27	5,078,864.99	674,359.10	143.21
GWD 31	101.95	2.66	27	.73	.500	Master GW# 31	5,078,865.04	674,358.88	143.21
GWD 41	102.85	3.57	31	.91	.500	Master GW# 41	5,078,865.11	674,358.62	143.21
TEE 3	103.98	4.69	41	1.12	.500	20 IN OFFTAKE-FORGED	5,078,865.19	674,358.28	143.21
GWD 51	105.16	5.88	41	2.31	.500	Master GW# 51	5,078,865.28	674,357.93	143.21
GWD 61	108.11	9.07	51	2.95	.500	Master GW# 61	5,078,865.48	674,357.06	143.20
STR 1	115.11	16.31	61	7.00	.500	Pipe replacement	5,078,865.97	674,354.99	143.03
BND 1	115.19	16.40	61	7.08	.500	9.5D Bend 29.9 Down	5,078,865.97	674,354.97	143.02
GWD 71	121.65	23.09	61	13.54	.500	Master GW# 71	5,078,866.39	674,353.24	142.19
GWD 81	126.38	27.84	71	4.72	.500	Master GW# 81	5,078,866.68	674,352.03	141.46
BND 2	133.80	34.82	81	7.42	.500	10.3D Bend .7 LT 29.9 Up	5,078,867.16	674,350.06	140.47
GWD 91	141.31	41.88	81	14.93	.500	Master GW# 91	5,078,867.69	674,347.85	140.27
BND 3	148.42	48.91	91	7.12	.500	9.9D Bend 29.5 LT	5,078,868.02	674,345.72	140.26
GWD 101	155.75	56.14	91	14.44	.500	Master GW# 101	5,078,867.57	674,343.54	140.26
GWD 111	162.82	63.03	101	7.07	.500	Master GW# 111	5,078,866.96	674,341.47	140.26
BND 4	170.41	70.55	111	7.59	.500	10.2D Bend 29.8 RT	5,078,866.47	674,339.22	140.25
GWD 121	177.54	77.62	111	14.73	.812	Master GW# 121	5,078,866.79	674,337.08	140.24
GWD 125	180.87	80.70	121	3.32	.812	Master GW# 125	5,078,867.02	674,336.09	140.25
GWD 135	182.17	81.99	125	1.30	.812	Master GW# 135	5,078,867.11	674,335.70	140.25
TEE 4	196.98	96.58	135	14.81	.812		5,078,868.14	674,331.31	140.28
GWD 160	209.08	108.50	135	26.91	.812	Master GW# 160	5,078,868.98	674,327.72	140.30
GWD 170	236.67	136.08	160	27.59	.812	Master GW# 170	5,078,870.91	674,319.53	140.32
GWD 180	264.45	163.51	170	27.77	.812	Master GW# 180	5,078,872.85	674,311.29	140.31
GWD 190	286.45	186.13	180	22.01	.812	Master GW# 190	5,078,874.40	674,304.76	140.31
GWD 200	313.37	212.56	190	26.92	.812	Master GW# 200	5,078,876.23	674,296.76	140.34

Pipeline Tally

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Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 210	340.21	239.49	200	26.84	.812	Master GW# 210	5,078,878.04	674,288.78	140.37
GWD 220	362.50	261.71	210	22.29	.812	Master GW# 220	5,078,879.54	674,282.15	140.39
GWD 230	389.12	288.15	220	26.62	.812	Master GW# 230	5,078,881.32	674,274.24	140.40
GWD 240	414.73	314.25	230	25.61	.812	Master GW# 240	5,078,883.01	674,266.62	140.40
GWD 250	441.15	341.14	240	26.42	.812	Master GW# 250	5,078,884.75	674,258.75	140.36
GWD 260	461.54	361.89	250	20.39	.812	Master GW# 260	5,078,886.09	674,252.68	140.35
GWD 270	487.69	387.89	260	26.15	.812	Master GW# 270	5,078,887.83	674,244.90	140.34
GWD 280	514.48	415.01	270	26.78	.812	Master GW# 280	5,078,889.64	674,236.94	140.34
GWD 290	537.15	437.81	280	22.67	.812	Master GW# 290	5,078,891.19	674,230.21	140.37
GWD 300	562.92	464.13	290	25.78	.812	Master GW# 300	5,078,892.99	674,222.56	140.40
BND 5	577.74	479.07	300	14.81	.812	24.9D Bend 19.4 LT	5,078,893.83	674,218.13	140.40
IDR 1	577.89	479.22	300	14.97	.812	17.99in Internal Diameter - On bend	5,078,893.84	674,218.09	140.40
GWD 310	587.71	489.12	300	24.79	.812	Master GW# 310	5,078,893.76	674,215.10	140.40
BND 6	598.57	500.17	310	10.86	.812	24.9D Bend 21.5 LT	5,078,893.14	674,211.85	140.38
IDR 2	605.94	507.66	310	18.23	.812	18.01in Internal Diameter - On bend	5,078,892.36	674,209.75	140.38
GWD 320	612.90	514.75	310	25.19	.812	Master GW# 320	5,078,891.39	674,207.86	140.40
BND 7	625.53	527.24	320	12.62	.812	26.1D Bend 24.0 LT .9 Down	5,078,889.25	674,204.68	140.43
GWD 330	638.35	539.93	320	25.45	.812	Master GW# 330	5,078,886.37	674,202.05	140.42
BND 8	649.24	550.82	330	10.89	.812	23.1D Bend 23.3 LT 1.5 Up	5,078,883.54	674,200.32	140.44
GWD 340	664.15	565.72	330	25.80	.812	Master GW# 340	5,078,879.24	674,198.91	140.51
GWD 350	671.35	573.05	340	7.21	.812	Master GW# 350	5,078,877.10	674,198.39	140.55
GWD 360	697.89	599.62	350	26.53	.812	Master GW# 360	5,078,869.25	674,196.47	140.63
GWD 370	725.10	626.69	360	27.21	.812	Master GW# 370	5,078,861.20	674,194.49	140.68
GWD 380	752.22	654.09	370	27.12	.812	Master GW# 380	5,078,853.17	674,192.54	140.75
GWD 390	780.41	682.26	380	28.19	.812	Master GW# 390	5,078,844.81	674,190.54	140.81
GWD 400	806.57	708.75	390	26.17	.812	Master GW# 400	5,078,837.05	674,188.73	140.81
GWD 410	831.12	733.59	400	24.55	.812	Master GW# 410	5,078,829.76	674,187.06	140.74
GWD 420	856.66	759.01	410	25.54	.812	Master GW# 420	5,078,822.17	674,185.34	140.66
GWD 430	880.26	782.84	420	23.61	.812	Master GW# 430	5,078,815.15	674,183.77	140.59
GWD 440	907.47	810.50	430	27.21	.812	Master GW# 440	5,078,807.05	674,181.96	140.58
GWD 450	930.65	834.20	440	23.18	.812	Master GW# 450	5,078,800.16	674,180.41	140.60
GWD 460	953.88	857.68	450	23.24	.812	Master GW# 460	5,078,793.25	674,178.84	140.59

Pipeline Tally

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Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 470	981.15	885.49	460	27.27	.812	Master GW# 470	5,078,785.15	674,176.99	140.56
GWD 480	1,000.67	905.18	470	19.52	.812	Master GW# 480	5,078,779.35	674,175.63	140.55
GWD 490	1,026.55	932.05	480	25.88	.812	Master GW# 490	5,078,771.69	674,173.76	140.53
GWD 500	1,049.69	956.16	490	23.14	.812	Master GW# 500	5,078,764.83	674,172.08	140.46
GWD 510	1,077.38	983.80	500	27.70	.812	Master GW# 510	5,078,756.64	674,170.08	140.28
GWD 520	1,102.91	1,010.24	510	25.52	.812	Master GW# 520	5,078,749.09	674,168.19	139.95
GWD 530	1,128.13	1,035.64	520	25.22	.812	Master GW# 530	5,078,741.64	674,166.32	139.60
GWD 540	1,148.60	1,056.59	530	20.47	.812	Master GW# 540	5,078,735.60	674,164.83	139.28
GWD 550	1,174.86	1,083.11	540	26.26	.812	Master GW# 550	5,078,727.85	674,162.89	138.77
GWD 560	1,201.61	1,109.95	550	26.75	.812	Master GW# 560	5,078,719.96	674,160.90	138.22
GWD 570	1,228.19	1,136.73	560	26.57	.812	Master GW# 570	5,078,712.11	674,158.95	137.71
GWD 580	1,251.00	1,159.75	570	22.81	.812	Master GW# 580	5,078,705.37	674,157.30	137.38
GWD 590	1,275.60	1,184.46	580	24.61	.812	Master GW# 590	5,078,698.08	674,155.55	137.08
GWD 600	1,301.52	1,210.43	590	25.92	.812	Master GW# 600	5,078,690.39	674,153.76	136.71
GWD 610	1,322.12	1,231.39	600	20.60	.812	Master GW# 610	5,078,684.28	674,152.36	136.46
GWD 620	1,350.03	1,258.89	610	27.90	.812	Master GW# 620	5,078,675.99	674,150.48	136.12
GWD 630	1,374.05	1,283.07	620	24.02	.812	Master GW# 630	5,078,668.85	674,148.87	135.84
GWD 640	1,397.56	1,307.09	630	23.51	.812	Master GW# 640	5,078,661.86	674,147.30	135.58
GWD 650	1,417.58	1,326.99	640	20.01	.812	Master GW# 650	5,078,655.91	674,145.98	135.42
GWD 660	1,444.37	1,353.78	650	26.79	.812	Master GW# 660	5,078,647.94	674,144.21	135.21
GWD 670	1,464.77	1,374.70	660	20.40	.812	Master GW# 670	5,078,641.87	674,142.86	135.08
GWD 680	1,492.18	1,402.48	670	27.42	.812	Master GW# 680	5,078,633.71	674,141.04	134.99
GWD 690	1,516.36	1,426.74	680	24.18	.812	Master GW# 690	5,078,626.52	674,139.41	134.96
GWD 700	1,543.14	1,453.81	690	26.78	.812	Master GW# 700	5,078,618.56	674,137.61	134.94
GWD 710	1,567.43	1,478.29	700	24.29	.812	Master GW# 710	5,078,611.34	674,135.95	134.92
GWD 720	1,594.02	1,505.03	710	26.59	.812	Master GW# 720	5,078,603.44	674,134.13	134.74
GWD 730	1,621.07	1,532.30	720	27.05	.812	Master GW# 730	5,078,595.43	674,132.24	134.29
GWD 740	1,647.31	1,559.27	730	26.24	.812	Master GW# 740	5,078,587.66	674,130.41	133.80
GWD 750	1,673.00	1,584.75	740	25.69	.812	Master GW# 750	5,078,580.06	674,128.59	133.34
GWD 760	1,695.73	1,607.51	750	22.73	.812	Master GW# 760	5,078,573.33	674,126.98	132.98
GWD 770	1,722.37	1,634.22	760	26.64	.812	Master GW# 770	5,078,565.44	674,125.10	132.60
GWD 780	1,750.11	1,662.02	770	27.74	.812	Master GW# 780	5,078,557.23	674,123.13	132.18

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
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Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 790	1,776.49	1,688.61	780	26.38	.812	Master GW# 790	5,078,549.42	674,121.22	131.83
GWD 800	1,795.06	1,706.96	790	18.57	.812	Master GW# 800	5,078,543.93	674,119.87	131.61
GWD 810	1,821.26	1,733.10	800	26.20	.812	Master GW# 810	5,078,536.19	674,117.92	131.35
GWD 820	1,848.27	1,760.09	810	27.01	.812	Master GW# 820	5,078,528.20	674,115.93	131.23
GWD 830	1,876.46	1,787.93	820	28.19	.812	Master GW# 830	5,078,519.85	674,113.89	131.17
GWD 840	1,903.75	1,815.16	830	27.29	.812	Master GW# 840	5,078,511.75	674,111.99	131.16
GWD 850	1,924.60	1,836.29	840	20.85	.812	Master GW# 850	5,078,505.55	674,110.59	131.16
GWD 860	1,950.45	1,862.23	850	25.85	.812	Master GW# 860	5,078,497.86	674,108.86	131.13
GWD 870	1,978.87	1,889.93	860	28.42	.812	Master GW# 870	5,078,489.41	674,106.95	131.10
GWD 880	2,006.71	1,917.32	870	27.84	.812	Master GW# 880	5,078,481.12	674,105.16	131.11
GWD 890	2,030.08	1,940.82	880	23.37	.812	Master GW# 890	5,078,474.16	674,103.64	131.12
GWD 900	2,055.21	1,966.20	890	25.13	.812	Master GW# 900	5,078,466.69	674,101.93	131.18
GWD 910	2,081.90	1,992.95	900	26.69	.812	Master GW# 910	5,078,458.78	674,100.03	131.31
GWD 920	2,107.03	2,018.14	910	25.13	.812	Master GW# 920	5,078,451.35	674,098.19	131.49
GWD 930	2,133.11	2,044.27	920	26.08	.812	Master GW# 930	5,078,443.63	674,096.28	131.68
GWD 940	2,160.29	2,071.77	930	27.18	.812	Master GW# 940	5,078,435.59	674,094.29	131.91
GWD 950	2,185.57	2,096.78	940	25.28	.812	Master GW# 950	5,078,428.11	674,092.46	132.14
GWD 960	2,213.16	2,124.53	950	27.60	.812	Master GW# 960	5,078,419.92	674,090.54	132.38
GWD 970	2,241.49	2,152.39	960	28.33	.812	Master GW# 970	5,078,411.51	674,088.60	132.63
GWD 980	2,269.20	2,179.88	970	27.71	.812	Master GW# 980	5,078,403.28	674,086.71	132.87
GWD 990	2,288.49	2,199.95	980	19.29	.812	Master GW# 990	5,078,397.56	674,085.36	133.01
GWD 1000	2,315.89	2,227.04	990	27.40	.812	Master GW# 1000	5,078,389.42	674,083.46	133.21
GWD 1010	2,343.82	2,254.80	1000	27.93	.812	Master GW# 1010	5,078,381.13	674,081.54	133.40
GWD 1020	2,370.95	2,282.41	1010	27.13	.812	Master GW# 1020	5,078,373.07	674,079.68	133.58
GWD 1030	2,398.83	2,309.90	1020	27.88	.812	Master GW# 1030	5,078,364.79	674,077.77	133.74
GWD 1040	2,426.32	2,337.15	1030	27.48	.812	Master GW# 1040	5,078,356.63	674,075.87	133.74
GWD 1050	2,452.35	2,363.29	1040	26.03	.812	Master GW# 1050	5,078,348.91	674,074.05	133.66
GWD 1060	2,479.44	2,390.18	1050	27.09	.812	Master GW# 1060	5,078,340.88	674,072.14	133.61
GWD 1070	2,506.47	2,417.26	1060	27.03	.812	Master GW# 1070	5,078,332.86	674,070.22	133.61
GWD 1080	2,529.50	2,440.28	1070	23.03	.812	Master GW# 1080	5,078,326.03	674,068.62	133.65
GWD 1090	2,554.85	2,465.46	1080	25.35	.812	Master GW# 1090	5,078,318.50	674,066.88	133.75
GWD 1100	2,580.53	2,491.28	1090	25.68	.812	Master GW# 1100	5,078,310.88	674,065.09	133.86

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GWD 1110	2,608.25	2,518.68	1100	27.72	.812	Master GW# 1110	5,078,302.65	674,063.16	133.97
GWD 1120	2,634.85	2,545.39	1110	26.60	.812	Master GW# 1120	5,078,294.75	674,061.36	134.12
GWD 1130	2,661.25	2,572.18	1120	26.40	.812	Master GW# 1130	5,078,286.90	674,059.58	134.24
GWD 1140	2,682.76	2,594.41	1130	21.50	.812	Master GW# 1140	5,078,280.51	674,058.12	134.31
GWD 1150	2,706.37	2,618.16	1140	23.62	.812	Master GW# 1150	5,078,273.49	674,056.51	134.33
GWD 1160	2,729.18	2,640.81	1150	22.80	.812	Master GW# 1160	5,078,266.73	674,054.92	134.31
GWD 1170	2,753.94	2,665.67	1160	24.76	.812	Master GW# 1170	5,078,259.37	674,053.21	134.26
GWD 1180	2,778.70	2,690.87	1170	24.76	.812	Master GW# 1180	5,078,252.03	674,051.49	134.24
GWD 1190	2,802.32	2,714.90	1180	23.63	.812	Master GW# 1190	5,078,245.01	674,049.86	134.20
GWD 1200	2,825.38	2,738.51	1190	23.06	.812	Master GW# 1200	5,078,238.17	674,048.26	134.14
GWD 1210	2,851.76	2,765.16	1200	26.38	.812	Master GW# 1210	5,078,230.33	674,046.44	134.06
GWD 1220	2,877.94	2,791.68	1210	26.18	.812	Master GW# 1220	5,078,222.58	674,044.57	133.94
GWD 1230	2,896.88	2,811.72	1220	18.95	.812	Master GW# 1230	5,078,216.96	674,043.23	133.80
GWD 1240	2,919.35	2,833.60	1230	22.47	.812	Master GW# 1240	5,078,210.29	674,041.66	133.66
GWD 1250	2,945.98	2,860.37	1240	26.63	.812	Master GW# 1250	5,078,202.38	674,039.86	133.51
GWD 1260	2,967.66	2,882.74	1250	21.68	.812	Master GW# 1260	5,078,195.93	674,038.44	133.44
GWD 1270	2,993.33	2,908.53	1260	25.66	.812	Master GW# 1270	5,078,188.28	674,036.79	133.32
GWD 1280	3,020.20	2,935.53	1270	26.88	.812	Master GW# 1280	5,078,180.28	674,035.04	133.16
GWD 1290	3,046.55	2,961.68	1280	26.35	.812	Master GW# 1290	5,078,172.43	674,033.31	133.04
GWD 1300	3,067.78	2,982.95	1290	21.23	.812	Master GW# 1300	5,078,166.12	674,031.90	132.95
GWD 1310	3,093.63	3,008.46	1300	25.84	.812	Master GW# 1310	5,078,158.44	674,030.14	132.85
GWD 1320	3,120.49	3,035.49	1310	26.87	.812	Master GW# 1320	5,078,150.46	674,028.29	132.68
GWD 1330	3,145.87	3,060.98	1320	25.37	.812	Master GW# 1330	5,078,142.92	674,026.58	132.48
GWD 1340	3,173.45	3,088.43	1330	27.59	.812	Master GW# 1340	5,078,134.73	674,024.72	132.16
GWD 1350	3,199.59	3,114.82	1340	26.13	.812	Master GW# 1350	5,078,126.97	674,022.95	131.73
GWD 1360	3,225.39	3,140.37	1350	25.80	.812	Master GW# 1360	5,078,119.32	674,021.17	131.27
GWD 1370	3,252.96	3,168.40	1360	27.57	.812	Master GW# 1370	5,078,111.15	674,019.26	130.76
GWD 1380	3,279.25	3,194.91	1370	26.28	.812	Master GW# 1380	5,078,103.37	674,017.43	130.31
GWD 1390	3,303.54	3,219.43	1380	24.30	.812	Master GW# 1390	5,078,096.16	674,015.75	130.01
GWD 1400	3,328.07	3,243.99	1390	24.53	.812	Master GW# 1400	5,078,088.86	674,014.12	129.87
GWD 1410	3,355.15	3,270.81	1400	27.08	.812	Master GW# 1410	5,078,080.80	674,012.38	129.80
GWD 1420	3,381.91	3,297.61	1410	26.76	.812	Master GW# 1420	5,078,072.84	674,010.59	129.75

ENBDNR0005220

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 1430	3,406.98	3,322.50	1420	25.07	.812	Master GW# 1430	5,078,065.39	674,008.87	129.74
GWD 1440	3,435.56	3,350.66	1430	28.58	.812	Master GW# 1440	5,078,056.90	674,006.91	129.69
GWD 1450	3,459.84	3,374.95	1440	24.27	.812	Master GW# 1450	5,078,049.68	674,005.30	129.56
GWD 1460	3,486.84	3,401.55	1450	27.00	.812	Master GW# 1460	5,078,041.64	674,003.53	129.37
GWD 1470	3,508.92	3,423.55	1460	22.08	.812	Master GW# 1470	5,078,035.08	674,002.06	129.20
GWD 1480	3,533.14	3,447.51	1470	24.22	.812	Master GW# 1480	5,078,027.88	674,000.41	129.08
GWD 1490	3,559.09	3,473.39	1480	25.95	.812	Master GW# 1490	5,078,020.17	673,998.65	129.00
GWD 1500	3,587.07	3,500.97	1490	27.98	.812	Master GW# 1500	5,078,011.85	673,996.78	128.99
GWD 1510	3,611.48	3,525.09	1500	24.41	.812	Master GW# 1510	5,078,004.59	673,995.14	129.08
GWD 1520	3,638.29	3,551.64	1510	26.82	.812	Master GW# 1520	5,077,996.63	673,993.30	129.22
GWD 1530	3,657.77	3,571.15	1520	19.48	.812	Master GW# 1530	5,077,990.84	673,991.97	129.31
GWD 1540	3,682.66	3,595.80	1530	24.89	.812	Master GW# 1540	5,077,983.45	673,990.27	129.45
GWD 1550	3,709.69	3,623.36	1540	27.03	.812	Master GW# 1550	5,077,975.42	673,988.40	129.53
GWD 1560	3,737.48	3,650.60	1550	27.78	.812	Master GW# 1560	5,077,967.17	673,986.51	129.45
GWD 1570	3,765.14	3,678.05	1560	27.67	.812	Master GW# 1570	5,077,958.93	673,984.74	129.22
GWD 1580	3,792.02	3,704.72	1570	26.87	.812	Master GW# 1580	5,077,950.91	673,983.07	128.90
GWD 1590	3,818.55	3,730.71	1580	26.53	.812	Master GW# 1590	5,077,943.01	673,981.35	128.64
GWD 1600	3,843.70	3,755.57	1590	25.15	.812	Master GW# 1600	5,077,935.56	673,979.55	128.48
GWD 1610	3,866.50	3,778.19	1600	22.80	.812	Master GW# 1610	5,077,928.82	673,977.86	128.29
GWD 1620	3,889.02	3,800.11	1610	22.52	.812	Master GW# 1620	5,077,922.16	673,976.24	128.05
GWD 1630	3,917.17	3,828.27	1620	28.16	.812	Master GW# 1630	5,077,913.81	673,974.28	127.65
GWD 1640	3,942.91	3,853.93	1630	25.73	.812	Master GW# 1640	5,077,906.18	673,972.48	127.22
GWD 1650	3,965.53	3,876.23	1640	22.62	.812	Master GW# 1650	5,077,899.48	673,970.90	126.85
GWD 1660	3,990.50	3,902.08	1650	24.98	.812	Master GW# 1660	5,077,892.07	673,969.17	126.55
GWD 1670	4,015.30	3,925.81	1660	24.80	.812	Master GW# 1670	5,077,884.71	673,967.50	126.35
GWD 1680	4,042.38	3,952.32	1670	27.08	.812	Master GW# 1680	5,077,876.66	673,965.67	126.24
GWD 1690	4,068.99	3,978.55	1680	26.62	.812	Master GW# 1690	5,077,868.75	673,963.84	126.18
GWD 1700	4,095.98	4,005.95	1690	26.98	.812	Master GW# 1700	5,077,860.75	673,961.94	126.12
GWD 1710	4,115.24	4,024.35	1700	19.27	.812	Master GW# 1710	5,077,855.04	673,960.59	126.05
GWD 1720	4,141.12	4,049.96	1710	25.87	.812	Master GW# 1720	5,077,847.36	673,958.79	125.93
GWD 1730	4,168.12	4,076.19	1720	27.00	.812	Master GW# 1730	5,077,839.34	673,956.92	125.77
GWD 1740	4,195.58	4,103.58	1730	27.47	.812	Master GW# 1740	5,077,831.19	673,955.03	125.58

ENBDNR0005221

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 1750	4,224.04	4,131.58	1740	28.46	.812	Master GW# 1750	5,077,822.74	673,953.06	125.37
GWD 1760	4,250.05	4,158.23	1750	26.01	.812	Master GW# 1760	5,077,815.02	673,951.27	125.16
GWD 1770	4,277.19	4,184.71	1760	27.14	.812	Master GW# 1770	5,077,806.97	673,949.40	124.92
GWD 1780	4,304.87	4,211.86	1770	27.68	.812	Master GW# 1780	5,077,798.75	673,947.49	124.63
GWD 1790	4,329.96	4,237.05	1780	25.09	.812	Master GW# 1790	5,077,791.31	673,945.73	124.38
GWD 1800	4,356.92	4,263.73	1790	26.96	.812	Master GW# 1800	5,077,783.31	673,943.89	124.08
GWD 1810	4,384.18	4,290.82	1800	27.26	.812	Master GW# 1810	5,077,775.21	673,942.07	123.68
GWD 1820	4,409.49	4,315.80	1810	25.32	.812	Master GW# 1820	5,077,767.69	673,940.38	123.29
GWD 1830	4,435.71	4,341.52	1820	26.22	.812	Master GW# 1830	5,077,759.91	673,938.59	123.00
GWD 1840	4,460.96	4,366.68	1830	25.25	.812	Master GW# 1840	5,077,752.42	673,936.84	122.72
GWD 1850	4,481.97	4,387.27	1840	21.01	.812	Master GW# 1850	5,077,746.19	673,935.36	122.53
GWD 1860	4,506.52	4,411.53	1850	24.55	.812	Master GW# 1860	5,077,738.91	673,933.63	122.34
GWD 1870	4,533.05	4,437.68	1860	26.53	.812	Master GW# 1870	5,077,731.04	673,931.76	122.18
GWD 1880	4,559.88	4,464.16	1870	26.83	.812	Master GW# 1880	5,077,723.08	673,929.91	122.03
GWD 1890	4,587.02	4,491.19	1880	27.14	.812	Master GW# 1890	5,077,715.02	673,928.06	121.80
GWD 1900	4,609.10	4,512.60	1890	22.08	.812	Master GW# 1900	5,077,708.46	673,926.57	121.61
GWD 1910	4,636.45	4,540.07	1900	27.35	.812	Master GW# 1910	5,077,700.34	673,924.70	121.35
GWD 1920	4,664.02	4,566.85	1910	27.57	.812	Master GW# 1920	5,077,692.16	673,922.78	121.06
GWD 1930	4,691.38	4,593.91	1920	27.37	.812	Master GW# 1930	5,077,684.05	673,920.85	120.85
GWD 1940	4,718.85	4,621.08	1930	27.47	.812	Master GW# 1940	5,077,675.91	673,918.88	120.68
GWD 1950	4,746.70	4,648.78	1940	27.85	.812	Master GW# 1950	5,077,667.67	673,916.86	120.52
GWD 1960	4,773.49	4,675.12	1950	26.79	.812	Master GW# 1960	5,077,659.73	673,914.95	120.39
GWD 1970	4,800.06	4,701.27	1960	26.57	.812	Master GW# 1970	5,077,651.85	673,913.08	120.31
GWD 1980	4,825.83	4,726.36	1970	25.77	.812	Master GW# 1980	5,077,644.20	673,911.30	120.28
GWD 1990	4,852.71	4,753.20	1980	26.89	.812	Master GW# 1990	5,077,636.21	673,909.48	120.26
GWD 2000	4,874.41	4,774.63	1990	21.69	.812	Master GW# 2000	5,077,629.77	673,907.97	120.22
GWD 2010	4,900.51	4,800.84	2000	26.11	.812	Master GW# 2010	5,077,622.03	673,906.10	120.18
GWD 2020	4,927.89	4,827.90	2010	27.37	.812	Master GW# 2020	5,077,613.93	673,904.12	120.16
GWD 2030	4,954.54	4,854.22	2020	26.66	.812	Master GW# 2030	5,077,606.03	673,902.21	120.12
GWD 2040	4,977.59	4,876.96	2030	23.04	.812	Master GW# 2040	5,077,599.19	673,900.60	120.09
GWD 2050	5,005.40	4,904.32	2040	27.81	.812	Master GW# 2050	5,077,590.93	673,898.72	120.07
GWD 2060	5,031.40	4,930.35	2050	26.00	.812	Master GW# 2060	5,077,583.19	673,896.97	120.00

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 2070	5,059.54	4,957.75	2060	28.14	.812	Master GW# 2070	5,077,574.82	673,895.09	119.91
GWD 2080	5,086.76	4,984.80	2070	27.21	.812	Master GW# 2080	5,077,566.73	673,893.25	119.84
GWD 2090	5,113.33	5,011.46	2080	26.57	.812	Master GW# 2090	5,077,558.84	673,891.46	119.83
GWD 2100	5,133.88	5,031.81	2090	20.55	.812	Master GW# 2100	5,077,552.73	673,890.07	119.85
GWD 2110	5,161.80	5,059.27	2100	27.92	.812	Master GW# 2110	5,077,544.42	673,888.20	119.87
GWD 2120	5,187.64	5,084.76	2110	25.84	.812	Master GW# 2120	5,077,536.74	673,886.47	119.88
GWD 2130	5,212.75	5,109.82	2120	25.11	.812	Master GW# 2130	5,077,529.27	673,884.78	119.85
GWD 2140	5,238.95	5,135.42	2130	26.20	.812	Master GW# 2140	5,077,521.48	673,883.01	119.84
GWD 2150	5,262.34	5,159.32	2140	23.39	.812	Master GW# 2150	5,077,514.54	673,881.40	119.81
GWD 2160	5,290.16	5,186.47	2150	27.82	.812	Master GW# 2160	5,077,506.29	673,879.45	119.74
GWD 2170	5,316.80	5,213.06	2160	26.65	.812	Master GW# 2170	5,077,498.38	673,877.58	119.66
GWD 2180	5,342.57	5,238.57	2170	25.76	.812	Master GW# 2180	5,077,490.73	673,875.82	119.64
GWD 2190	5,367.95	5,263.59	2180	25.38	.812	Master GW# 2190	5,077,483.18	673,874.10	119.75
GWD 2200	5,393.09	5,288.93	2190	25.14	.812	Master GW# 2200	5,077,475.70	673,872.43	119.80
GWD 2210	5,420.53	5,315.60	2200	27.43	.812	Master GW# 2210	5,077,467.54	673,870.60	119.78
GWD 2220	5,447.56	5,342.78	2210	27.04	.812	Master GW# 2220	5,077,459.52	673,868.73	119.75
GWD 2230	5,474.84	5,369.79	2220	27.27	.812	Master GW# 2230	5,077,451.42	673,866.86	119.77
GWD 2240	5,498.42	5,393.34	2230	23.58	.812	Master GW# 2240	5,077,444.41	673,865.26	119.77
GWD 2250	5,525.34	5,420.30	2240	26.92	.812	Master GW# 2250	5,077,436.41	673,863.40	119.76
GWD 2260	5,552.46	5,447.17	2250	27.12	.812	Master GW# 2260	5,077,428.35	673,861.55	119.75
GWD 2270	5,573.58	5,468.57	2260	21.11	.812	Master GW# 2270	5,077,422.08	673,860.12	119.76
GWD 2280	5,599.72	5,494.60	2270	26.14	.812	Master GW# 2280	5,077,414.31	673,858.34	119.75
GWD 2290	5,627.00	5,522.17	2280	27.28	.812	Master GW# 2290	5,077,406.20	673,856.48	119.70
GWD 2300	5,652.32	5,547.42	2290	25.32	.812	Master GW# 2300	5,077,398.68	673,854.75	119.64
GWD 2310	5,679.64	5,574.91	2300	27.32	.812	Master GW# 2310	5,077,390.57	673,852.88	119.54
GWD 2320	5,705.53	5,600.52	2310	25.90	.812	Master GW# 2320	5,077,382.88	673,851.11	119.42
GWD 2330	5,732.29	5,627.75	2320	26.76	.812	Master GW# 2330	5,077,374.93	673,849.28	119.27
GWD 2340	5,759.62	5,654.49	2330	27.33	.812	Master GW# 2340	5,077,366.81	673,847.41	119.10
GWD 2350	5,786.35	5,681.23	2340	26.72	.812	Master GW# 2350	5,077,358.88	673,845.57	118.91
GWD 2360	5,811.83	5,706.85	2350	25.49	.812	Master GW# 2360	5,077,351.31	673,843.81	118.72
GWD 2370	5,838.83	5,733.70	2360	27.00	.812	Master GW# 2370	5,077,343.30	673,841.95	118.54
GWD 2380	5,862.87	5,757.85	2370	24.04	.812	Master GW# 2380	5,077,336.16	673,840.31	118.40

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 2390	5,889.93	5,784.63	2380	27.06	.812	Master GW# 2390	5,077,328.12	673,838.46	118.26
GWD 2400	5,910.13	5,804.90	2390	20.20	.812	Master GW# 2400	5,077,322.12	673,837.08	118.15
GWD 2410	5,934.64	5,829.30	2400	24.51	.812	Master GW# 2410	5,077,314.84	673,835.41	118.06
GWD 2420	5,960.31	5,854.80	2410	25.66	.812	Master GW# 2420	5,077,307.22	673,833.65	117.96
GWD 2430	5,985.44	5,879.64	2420	25.13	.812	Master GW# 2430	5,077,299.75	673,831.93	117.89
GWD 2440	6,007.35	5,901.22	2430	21.91	.812	Master GW# 2440	5,077,293.24	673,830.43	117.84
GWD 2450	6,035.20	5,927.84	2440	27.86	.812	Master GW# 2450	5,077,284.97	673,828.53	117.78
GWD 2460	6,061.44	5,954.13	2450	26.23	.812	Master GW# 2460	5,077,277.18	673,826.73	117.72
GWD 2470	6,088.71	5,981.18	2460	27.27	.812	Master GW# 2470	5,077,269.07	673,824.87	117.71
GWD 2480	6,114.50	6,007.10	2470	25.79	.812	Master GW# 2480	5,077,261.41	673,823.12	117.77
GWD 2490	6,142.49	6,034.71	2480	27.99	.812	Master GW# 2490	5,077,253.08	673,821.24	117.85
GWD 2500	6,168.73	6,060.76	2490	26.24	.812	Master GW# 2500	5,077,245.28	673,819.47	117.88
GWD 2510	6,193.87	6,085.94	2500	25.15	.812	Master GW# 2510	5,077,237.81	673,817.76	117.84
GWD 2520	6,216.63	6,108.03	2510	22.76	.812	Master GW# 2520	5,077,231.05	673,816.20	117.77
GWD 2530	6,244.36	6,135.24	2520	27.73	.812	Master GW# 2530	5,077,222.81	673,814.30	117.66
GWD 2540	6,270.87	6,161.44	2530	26.50	.812	Master GW# 2540	5,077,214.94	673,812.49	117.54
GWD 2550	6,297.93	6,188.56	2540	27.06	.812	Master GW# 2550	5,077,206.90	673,810.65	117.40
GWD 2560	6,326.05	6,215.82	2550	28.12	.812	Master GW# 2560	5,077,198.55	673,808.74	117.31
GWD 2570	6,351.89	6,241.63	2560	25.84	.812	Master GW# 2570	5,077,190.87	673,806.99	117.27
GWD 2580	6,380.08	6,269.69	2570	28.19	.812	Master GW# 2580	5,077,182.48	673,805.10	117.28
GWD 2590	6,407.90	6,297.48	2580	27.83	.812	Master GW# 2590	5,077,174.21	673,803.21	117.32
GWD 2600	6,429.38	6,318.44	2590	21.48	.812	Master GW# 2600	5,077,167.83	673,801.76	117.29
GWD 2610	6,455.60	6,344.88	2600	26.21	.812	Master GW# 2610	5,077,160.04	673,799.97	117.23
GWD 2620	6,482.31	6,371.35	2610	26.71	.812	Master GW# 2620	5,077,152.10	673,798.15	117.16
GWD 2630	6,505.83	6,394.59	2620	23.52	.812	Master GW# 2630	5,077,145.11	673,796.55	117.07
GWD 2640	6,532.97	6,421.29	2630	27.14	.812	Master GW# 2640	5,077,137.05	673,794.70	116.94
GWD 2650	6,559.35	6,447.47	2640	26.37	.812	Master GW# 2650	5,077,129.22	673,792.88	116.81
GWD 2660	6,586.23	6,473.89	2650	26.89	.812	Master GW# 2660	5,077,121.24	673,791.03	116.66
GWD 2670	6,613.78	6,500.92	2660	27.55	.812	Master GW# 2670	5,077,113.06	673,789.13	116.50
GWD 2680	6,641.23	6,528.05	2670	27.45	.812	Master GW# 2680	5,077,104.91	673,787.24	116.34
GWD 2690	6,667.94	6,554.15	2680	26.71	.812	Master GW# 2690	5,077,096.98	673,785.39	116.20
GWD 2700	6,695.58	6,581.41	2690	27.64	.812	Master GW# 2700	5,077,088.77	673,783.49	116.10

ENBDNR0005224

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 2710	6,723.63	6,608.80	2700	28.05	.812	Master GW# 2710	5,077,080.45	673,781.55	115.97
GWD 2720	6,751.84	6,636.52	2710	28.21	.812	Master GW# 2720	5,077,072.07	673,779.60	115.83
GWD 2730	6,777.38	6,662.01	2720	25.54	.812	Master GW# 2730	5,077,064.49	673,777.84	115.65
GWD 2740	6,803.54	6,687.42	2730	26.16	.812	Master GW# 2740	5,077,056.73	673,776.03	115.44
GWD 2750	6,824.49	6,708.21	2740	20.96	.812	Master GW# 2750	5,077,050.51	673,774.58	115.26
GWD 2760	6,853.12	6,736.12	2750	28.63	.812	Master GW# 2760	5,077,042.01	673,772.59	114.97
GWD 2770	6,881.10	6,763.46	2760	27.98	.812	Master GW# 2770	5,077,033.71	673,770.65	114.65
GWD 2780	6,907.59	6,789.83	2770	26.49	.812	Master GW# 2780	5,077,025.86	673,768.81	114.32
GWD 2790	6,933.13	6,814.97	2780	25.54	.812	Master GW# 2790	5,077,018.29	673,767.04	113.95
GWD 2800	6,959.31	6,840.83	2790	26.18	.812	Master GW# 2800	5,077,010.53	673,765.23	113.53
GWD 2810	6,982.92	6,864.00	2800	23.62	.812	Master GW# 2810	5,077,003.53	673,763.58	113.12
GWD 2820	7,008.00	6,888.65	2810	25.08	.812	Master GW# 2820	5,076,996.10	673,761.83	112.66
GWD 2830	7,035.26	6,915.46	2820	27.26	.812	Master GW# 2830	5,076,988.03	673,759.93	112.14
GWD 2840	7,062.84	6,942.69	2830	27.58	.812	Master GW# 2840	5,076,979.86	673,758.02	111.60
GWD 2850	7,087.55	6,966.84	2840	24.71	.812	Master GW# 2850	5,076,972.55	673,756.31	111.09
GWD 2860	7,115.12	6,993.64	2850	27.58	.812	Master GW# 2860	5,076,964.38	673,754.39	110.49
GWD 2870	7,140.65	7,018.89	2860	25.52	.812	Master GW# 2870	5,076,956.83	673,752.62	109.91
GWD 2880	7,167.13	7,044.55	2870	26.48	.812	Master GW# 2880	5,076,948.99	673,750.79	109.27
GWD 2890	7,193.75	7,070.73	2880	26.62	.812	Master GW# 2890	5,076,941.12	673,748.95	108.58
GWD 2900	7,220.25	7,096.68	2890	26.50	.812	Master GW# 2900	5,076,933.28	673,747.12	107.87
GWD 2910	7,246.90	7,122.54	2900	26.65	.812	Master GW# 2910	5,076,925.40	673,745.28	107.10
GWD 2920	7,271.32	7,146.74	2910	24.43	.812	Master GW# 2920	5,076,918.18	673,743.61	106.36
GWD 2930	7,299.76	7,174.61	2920	28.44	.812	Master GW# 2930	5,076,909.79	673,741.65	105.46
GWD 2940	7,326.65	7,200.84	2930	26.88	.812	Master GW# 2940	5,076,901.86	673,739.80	104.54
GWD 2950	7,353.33	7,227.25	2940	26.69	.812	Master GW# 2950	5,076,893.99	673,737.97	103.56
GWD 2960	7,381.79	7,254.90	2950	28.46	.812	Master GW# 2960	5,076,885.61	673,736.04	102.43
GWD 2970	7,409.56	7,282.36	2960	27.77	.812	Master GW# 2970	5,076,877.45	673,734.17	101.19
GWD 2980	7,436.67	7,308.96	2970	27.11	.812	Master GW# 2980	5,076,869.49	673,732.34	99.93
GWD 2990	7,464.88	7,336.39	2980	28.20	.812	Master GW# 2990	5,076,861.22	673,730.41	98.59
GWD 3000	7,492.12	7,363.42	2990	27.24	.812	Master GW# 3000	5,076,853.24	673,728.55	97.27
GWD 3010	7,515.35	7,386.29	3000	23.23	.812	Master GW# 3010	5,076,846.43	673,726.97	96.15
GWD 3020	7,541.70	7,412.44	3010	26.36	.812	Master GW# 3020	5,076,838.69	673,725.17	94.94

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 3030	7,568.53	7,438.42	3020	26.83	.812	Master GW# 3030	5,076,830.82	673,723.32	93.78
GWD 3040	7,589.28	7,458.79	3030	20.75	.812	Master GW# 3040	5,076,824.72	673,721.87	92.95
GWD 3050	7,614.89	7,484.06	3040	25.61	.812	Master GW# 3050	5,076,817.17	673,720.10	92.03
GWD 3060	7,641.61	7,510.14	3050	26.73	.812	Master GW# 3060	5,076,809.28	673,718.25	91.20
GWD 3070	7,666.12	7,534.31	3060	24.51	.812	Master GW# 3070	5,076,802.03	673,716.58	90.47
GWD 3080	7,692.84	7,560.71	3070	26.71	.812	Master GW# 3080	5,076,794.14	673,714.74	89.64
GWD 3090	7,720.03	7,587.36	3080	27.19	.812	Master GW# 3090	5,076,786.11	673,712.87	88.73
GWD 3100	7,747.98	7,614.86	3090	27.95	.812	Master GW# 3100	5,076,777.87	673,710.95	87.77
GWD 3110	7,775.12	7,641.66	3100	27.14	.812	Master GW# 3110	5,076,769.87	673,709.08	86.78
GWD 3120	7,800.97	7,666.93	3110	25.84	.812	Master GW# 3120	5,076,762.27	673,707.30	85.73
GWD 3130	7,826.81	7,692.12	3120	25.84	.812	Master GW# 3130	5,076,754.70	673,705.53	84.44
GWD 3140	7,854.88	7,719.89	3130	28.07	.812	Master GW# 3140	5,076,746.53	673,703.64	82.77
GWD 3150	7,881.88	7,746.15	3140	27.00	.812	Master GW# 3150	5,076,738.68	673,701.82	81.09
GWD 3160	7,909.08	7,772.67	3150	27.20	.812	Master GW# 3160	5,076,730.75	673,699.99	79.50
GWD 3170	7,937.05	7,799.88	3160	27.96	.812	Master GW# 3170	5,076,722.58	673,698.11	77.98
GWD 3180	7,948.50	7,811.16	3170	11.45	.812	Master GW# 3180	5,076,719.23	673,697.34	77.39
GWD 3190	7,976.10	7,838.14	3180	27.61	.812	Master GW# 3190	5,076,711.12	673,695.47	76.10
GWD 3200	8,004.62	7,866.15	3190	28.52	.812	Master GW# 3200	5,076,702.72	673,693.55	74.95
GWD 3210	8,031.32	7,892.26	3200	26.70	.812	Master GW# 3210	5,076,694.84	673,691.74	74.05
GWD 3220	8,057.70	7,918.05	3210	26.39	.812	Master GW# 3220	5,076,687.03	673,689.93	73.35
GWD 3230	8,083.15	7,943.01	3220	25.44	.812	Master GW# 3230	5,076,679.49	673,688.19	72.89
GWD 3240	8,110.54	7,969.88	3230	27.39	.812	Master GW# 3240	5,076,671.36	673,686.30	72.59
GWD 3250	8,132.68	7,991.69	3240	22.14	.812	Master GW# 3250	5,076,664.78	673,684.78	72.48
GWD 3260	8,157.48	8,016.26	3250	24.81	.812	Master GW# 3260	5,076,657.42	673,683.06	72.38
GWD 3270	8,182.24	8,040.42	3260	24.76	.812	Master GW# 3270	5,076,650.07	673,681.33	72.35
GWD 3280	8,207.95	8,065.85	3270	25.71	.812	Master GW# 3280	5,076,642.43	673,679.58	72.42
GWD 3290	8,233.54	8,090.85	3280	25.58	.812	Master GW# 3290	5,076,634.83	673,677.85	72.49
GWD 3300	8,260.29	8,117.38	3290	26.76	.812	Master GW# 3300	5,076,626.88	673,676.01	72.53
GWD 3310	8,286.13	8,143.16	3300	25.83	.812	Master GW# 3310	5,076,619.21	673,674.25	72.51
GWD 3320	8,314.87	8,170.90	3310	28.74	.812	Master GW# 3320	5,076,610.67	673,672.28	72.40
GWD 3330	8,340.80	8,196.60	3320	25.93	.812	Master GW# 3330	5,076,602.96	673,670.53	72.29
GWD 3340	8,369.01	8,224.45	3330	28.21	.812	Master GW# 3340	5,076,594.59	673,668.58	72.14

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 3350	8,395.53	8,250.41	3340	26.52	.812	Master GW# 3350	5,076,586.72	673,666.73	71.97
GWD 3360	8,422.40	8,277.07	3350	26.87	.812	Master GW# 3360	5,076,578.75	673,664.86	71.83
GWD 3370	8,450.04	8,304.04	3360	27.64	.812	Master GW# 3370	5,076,570.54	673,662.98	71.67
GWD 3380	8,478.32	8,331.70	3370	28.28	.812	Master GW# 3380	5,076,562.13	673,661.09	71.46
GWD 3390	8,505.26	8,358.28	3380	26.94	.812	Master GW# 3390	5,076,554.12	673,659.29	71.10
GWD 3400	8,527.89	8,381.16	3390	22.64	.812	Master GW# 3400	5,076,547.40	673,657.81	70.62
GWD 3410	8,554.69	8,407.75	3400	26.80	.812	Master GW# 3410	5,076,539.45	673,656.06	70.01
GWD 3420	8,581.01	8,433.93	3410	26.32	.812	Master GW# 3420	5,076,531.64	673,654.30	69.45
GWD 3430	8,607.34	8,460.16	3420	26.33	.812	Master GW# 3430	5,076,523.83	673,652.51	69.01
GWD 3440	8,635.28	8,487.71	3430	27.94	.812	Master GW# 3440	5,076,515.54	673,650.58	68.73
GWD 3450	8,663.23	8,515.11	3440	27.96	.812	Master GW# 3450	5,076,507.25	673,648.63	68.62
GWD 3460	8,686.85	8,538.38	3450	23.62	.812	Master GW# 3460	5,076,500.24	673,646.98	68.63
GWD 3470	8,711.45	8,562.64	3460	24.60	.812	Master GW# 3470	5,076,492.93	673,645.28	68.71
GWD 3480	8,736.66	8,587.58	3470	25.21	.812	Master GW# 3480	5,076,485.44	673,643.55	68.72
GWD 3490	8,761.73	8,612.19	3480	25.07	.812	Master GW# 3490	5,076,477.99	673,641.86	68.67
GWD 3500	8,788.78	8,638.71	3490	27.05	.812	Master GW# 3500	5,076,469.95	673,640.05	68.58
GWD 3510	8,814.27	8,664.11	3500	25.49	.812	Master GW# 3510	5,076,462.37	673,638.33	68.47
GWD 3520	8,839.14	8,688.83	3510	24.87	.812	Master GW# 3520	5,076,454.98	673,636.63	68.34
GWD 3530	8,865.66	8,715.11	3520	26.52	.812	Master GW# 3530	5,076,447.10	673,634.81	68.19
GWD 3540	8,893.96	8,742.73	3530	28.30	.812	Master GW# 3540	5,076,438.70	673,632.89	68.03
GWD 3550	8,918.11	8,767.27	3540	24.15	.812	Master GW# 3550	5,076,431.52	673,631.25	67.91
GWD 3560	8,946.11	8,794.78	3550	28.00	.812	Master GW# 3560	5,076,423.20	673,629.37	67.70
GWD 3570	8,973.05	8,821.79	3560	26.94	.812	Master GW# 3570	5,076,415.19	673,627.58	67.40
GWD 3580	8,998.80	8,847.52	3570	25.75	.812	Master GW# 3580	5,076,407.53	673,625.87	67.08
GWD 3590	9,026.37	8,875.01	3580	27.56	.812	Master GW# 3590	5,076,399.35	673,624.00	66.78
GWD 3600	9,052.41	8,900.77	3590	26.04	.812	Master GW# 3600	5,076,391.61	673,622.24	66.56
GWD 3610	9,078.02	8,926.49	3600	25.61	.812	Master GW# 3610	5,076,384.01	673,620.47	66.42
GWD 3620	9,105.56	8,953.62	3610	27.54	.812	Master GW# 3620	5,076,375.84	673,618.55	66.23
GWD 3630	9,133.07	8,981.08	3620	27.51	.812	Master GW# 3630	5,076,367.68	673,616.64	66.01
GWD 3640	9,160.58	9,008.53	3630	27.51	.812	Master GW# 3640	5,076,359.51	673,614.75	65.80
GWD 3650	9,187.67	9,035.77	3640	27.10	.812	Master GW# 3650	5,076,351.47	673,612.87	65.60
GWD 3660	9,214.62	9,063.22	3650	26.94	.812	Master GW# 3660	5,076,343.47	673,611.01	65.49

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 3670	9,237.24	9,084.88	3660	22.63	.812	Master GW# 3670	5,076,336.75	673,609.46	65.46
GWD 3680	9,264.02	9,111.60	3670	26.78	.812	Master GW# 3680	5,076,328.79	673,607.64	65.52
GWD 3690	9,290.96	9,138.40	3680	26.94	.812	Master GW# 3690	5,076,320.79	673,605.82	65.72
GWD 3700	9,316.16	9,163.47	3690	25.20	.812	Master GW# 3700	5,076,313.31	673,604.11	66.00
GWD 3710	9,343.60	9,190.57	3700	27.44	.812	Master GW# 3710	5,076,305.16	673,602.24	66.43
GWD 3720	9,371.51	9,217.88	3710	27.91	.812	Master GW# 3720	5,076,296.89	673,600.34	67.01
GWD 3730	9,398.97	9,245.60	3720	27.46	.812	Master GW# 3730	5,076,288.76	673,598.50	67.76
GWD 3740	9,425.29	9,271.44	3730	26.32	.812	Master GW# 3740	5,076,280.99	673,596.72	68.67
GWD 3750	9,453.20	9,298.95	3740	27.91	.812	Master GW# 3750	5,076,272.77	673,594.83	69.79
GWD 3760	9,480.05	9,325.50	3750	26.85	.812	Master GW# 3760	5,076,264.88	673,593.01	70.98
GWD 3770	9,507.96	9,353.50	3760	27.91	.812	Master GW# 3770	5,076,256.69	673,591.12	72.33
GWD 3780	9,535.82	9,380.81	3770	27.87	.812	Master GW# 3780	5,076,248.52	673,589.24	73.70
GWD 3790	9,562.67	9,407.28	3780	26.85	.812	Master GW# 3790	5,076,240.65	673,587.43	74.98
GWD 3800	9,590.61	9,434.73	3790	27.94	.812	Master GW# 3800	5,076,232.43	673,585.54	76.21
GWD 3810	9,617.88	9,461.63	3800	27.27	.812	Master GW# 3810	5,076,224.40	673,583.67	77.27
GWD 3820	9,644.71	9,488.33	3810	26.84	.812	Master GW# 3820	5,076,216.49	673,581.83	78.21
GWD 3830	9,669.48	9,512.71	3820	24.77	.812	Master GW# 3830	5,076,209.17	673,580.14	79.05
GWD 3840	9,693.98	9,536.94	3830	24.50	.812	Master GW# 3840	5,076,201.94	673,578.49	79.89
GWD 3850	9,720.34	9,563.50	3840	26.36	.812	Master GW# 3850	5,076,194.16	673,576.70	80.82
GWD 3860	9,748.15	9,590.75	3850	27.81	.812	Master GW# 3860	5,076,185.94	673,574.82	81.75
GWD 3870	9,776.03	9,618.35	3860	27.88	.812	Master GW# 3870	5,076,177.71	673,572.92	82.59
GWD 3880	9,798.84	9,640.86	3870	22.81	.812	Master GW# 3880	5,076,170.96	673,571.35	83.19
GWD 3890	9,825.80	9,667.20	3880	26.96	.812	Master GW# 3890	5,076,162.98	673,569.50	83.82
GWD 3900	9,853.47	9,694.48	3890	27.67	.812	Master GW# 3900	5,076,154.78	673,567.59	84.32
GWD 3910	9,874.09	9,714.86	3900	20.63	.812	Master GW# 3910	5,076,148.66	673,566.17	84.63
GWD 3920	9,901.99	9,742.40	3910	27.90	.812	Master GW# 3920	5,076,140.38	673,564.27	85.03
GWD 3930	9,929.48	9,769.62	3920	27.49	.812	Master GW# 3930	5,076,132.23	673,562.39	85.43
GWD 3940	9,957.11	9,796.96	3930	27.64	.812	Master GW# 3940	5,076,124.03	673,560.48	85.81
GWD 3950	9,984.92	9,824.78	3940	27.80	.812	Master GW# 3950	5,076,115.78	673,558.56	86.19
GWD 3960	10,010.21	9,849.39	3950	25.29	.812	Master GW# 3960	5,076,108.28	673,556.79	86.50
GWD 3970	10,037.50	9,876.65	3960	27.29	.812	Master GW# 3970	5,076,100.19	673,554.89	86.86
GWD 3980	10,064.02	9,902.99	3970	26.53	.812	Master GW# 3980	5,076,092.33	673,553.03	87.21

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 3990	10,091.92	9,930.44	3980	27.89	.812	Master GW# 3990	5,076,084.06	673,551.07	87.50
GWD 4000	10,114.29	9,952.73	3990	22.38	.812	Master GW# 4000	5,076,077.43	673,549.50	87.63
GWD 4010	10,141.98	9,980.27	4000	27.69	.812	Master GW# 4010	5,076,069.21	673,547.55	87.71
GWD 4020	10,166.59	10,004.82	4010	24.61	.812	Master GW# 4020	5,076,061.91	673,545.83	87.74
GWD 4030	10,192.72	10,030.80	4020	26.13	.812	Master GW# 4030	5,076,054.16	673,544.01	87.73
GWD 4040	10,216.45	10,054.28	4030	23.73	.812	Master GW# 4040	5,076,047.12	673,542.35	87.70
GWD 4050	10,241.35	10,079.05	4040	24.90	.812	Master GW# 4050	5,076,039.72	673,540.63	87.68
GWD 4060	10,263.89	10,101.49	4050	22.54	.812	Master GW# 4060	5,076,033.03	673,539.06	87.63
GWD 4070	10,288.24	10,125.68	4060	24.35	.812	Master GW# 4070	5,076,025.81	673,537.37	87.54
GWD 4080	10,315.23	10,152.69	4070	26.99	.812	Master GW# 4080	5,076,017.80	673,535.49	87.37
GWD 4090	10,338.99	10,176.00	4080	23.76	.812	Master GW# 4090	5,076,010.74	673,533.85	87.17
GWD 4100	10,365.72	10,202.56	4090	26.73	.812	Master GW# 4100	5,076,002.81	673,532.02	86.93
GWD 4110	10,393.10	10,229.81	4100	27.38	.812	Master GW# 4110	5,075,994.68	673,530.13	86.69
GWD 4120	10,420.82	10,257.08	4110	27.72	.812	Master GW# 4120	5,075,986.46	673,528.19	86.46
GWD 4130	10,447.91	10,284.10	4120	27.09	.812	Master GW# 4130	5,075,978.43	673,526.27	86.31
GWD 4140	10,474.68	10,310.57	4130	26.77	.812	Master GW# 4140	5,075,970.49	673,524.40	86.25
GWD 4150	10,501.04	10,336.80	4140	26.35	.812	Master GW# 4150	5,075,962.66	673,522.58	86.27
GWD 4160	10,513.58	10,349.19	4150	12.54	.812	Master GW# 4160	5,075,958.94	673,521.71	86.32
GWD 4170	10,533.12	10,368.68	4160	19.54	.812	Master GW# 4170	5,075,953.14	673,520.36	86.39
GWD 4180	10,558.20	10,393.42	4170	25.08	.812	Master GW# 4180	5,075,945.70	673,518.61	86.48
GWD 4190	10,585.21	10,419.94	4180	27.01	.812	Master GW# 4190	5,075,937.68	673,516.74	86.64
GWD 4200	10,612.77	10,447.54	4190	27.56	.812	Master GW# 4200	5,075,929.50	673,514.82	86.82
GWD 4210	10,638.77	10,473.38	4200	26.00	.812	Master GW# 4210	5,075,921.79	673,513.00	86.97
GWD 4220	10,665.15	10,499.69	4210	26.38	.812	Master GW# 4220	5,075,913.97	673,511.15	87.06
GWD 4230	10,692.74	10,526.85	4220	27.59	.812	Master GW# 4230	5,075,905.77	673,509.26	87.10
GWD 4240	10,714.03	10,547.77	4230	21.29	.812	Master GW# 4240	5,075,899.45	673,507.81	87.15
GWD 4250	10,741.29	10,575.00	4240	27.26	.812	Master GW# 4250	5,075,891.35	673,505.93	87.28
GWD 4260	10,761.34	10,594.86	4250	20.05	.812	Master GW# 4260	5,075,885.40	673,504.52	87.38
GWD 4270	10,786.62	10,619.98	4260	25.28	.812	Master GW# 4270	5,075,877.90	673,502.76	87.47
GWD 4280	10,814.01	10,647.31	4270	27.39	.812	Master GW# 4280	5,075,869.77	673,500.86	87.54
GWD 4290	10,840.34	10,673.05	4280	26.32	.812	Master GW# 4290	5,075,861.96	673,499.03	87.55
GWD 4300	10,868.54	10,700.86	4290	28.20	.812	Master GW# 4300	5,075,853.59	673,497.06	87.57

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 4310	10,896.15	10,728.37	4300	27.61	.812	Master GW# 4310	5,075,845.39	673,495.16	87.66
GWD 4320	10,922.22	10,754.00	4310	26.07	.812	Master GW# 4320	5,075,837.65	673,493.38	87.83
GWD 4330	10,949.55	10,781.10	4320	27.33	.812	Master GW# 4330	5,075,829.54	673,491.48	88.10
GWD 4340	10,973.03	10,803.98	4330	23.48	.812	Master GW# 4340	5,075,822.57	673,489.86	88.37
GWD 4350	11,001.02	10,831.87	4340	27.98	.812	Master GW# 4350	5,075,814.26	673,487.95	88.68
GWD 4360	11,026.91	10,857.29	4350	25.90	.812	Master GW# 4360	5,075,806.57	673,486.18	88.93
GWD 4370	11,053.55	10,883.52	4360	26.64	.812	Master GW# 4370	5,075,798.66	673,484.37	89.17
GWD 4380	11,081.41	10,911.10	4370	27.86	.812	Master GW# 4380	5,075,790.38	673,482.48	89.37
GWD 4390	11,105.44	10,934.74	4380	24.03	.812	Master GW# 4390	5,075,783.24	673,480.87	89.46
GWD 4400	11,129.27	10,958.39	4390	23.83	.812	Master GW# 4400	5,075,776.15	673,479.28	89.45
GWD 4410	11,156.29	10,985.07	4400	27.02	.812	Master GW# 4410	5,075,768.11	673,477.48	89.31
GWD 4420	11,183.24	11,011.64	4410	26.95	.812	Master GW# 4420	5,075,760.10	673,475.69	89.20
GWD 4430	11,208.56	11,036.76	4420	25.32	.812	Master GW# 4430	5,075,752.57	673,473.99	89.17
GWD 4440	11,236.58	11,064.41	4430	28.02	.812	Master GW# 4440	5,075,744.24	673,472.10	89.20
GWD 4450	11,262.90	11,090.71	4440	26.32	.812	Master GW# 4450	5,075,736.42	673,470.31	89.32
GWD 4460	11,290.69	11,117.99	4450	27.79	.812	Master GW# 4460	5,075,728.16	673,468.42	89.55
GWD 4470	11,317.09	11,144.27	4460	26.40	.812	Master GW# 4470	5,075,720.33	673,466.63	89.90
GWD 4480	11,341.28	11,168.37	4470	24.19	.812	Master GW# 4480	5,075,713.15	673,464.99	90.38
GWD 4490	11,367.17	11,193.97	4480	25.89	.812	Master GW# 4490	5,075,705.48	673,463.23	91.02
GWD 4500	11,391.04	11,217.59	4490	23.86	.812	Master GW# 4500	5,075,698.43	673,461.59	91.69
GWD 4510	11,418.81	11,245.23	4500	27.78	.812	Master GW# 4510	5,075,690.23	673,459.66	92.56
GWD 4520	11,438.22	11,264.48	4510	19.41	.812	Master GW# 4520	5,075,684.50	673,458.33	93.20
GWD 4530	11,465.83	11,291.97	4520	27.60	.812	Master GW# 4530	5,075,676.36	673,456.43	94.15
GWD 4540	11,492.05	11,317.77	4530	26.23	.812	Master GW# 4540	5,075,668.63	673,454.62	95.07
GWD 4550	11,518.92	11,344.57	4540	26.86	.812	Master GW# 4550	5,075,660.72	673,452.76	96.11
GWD 4560	11,545.79	11,371.01	4550	26.88	.812	Master GW# 4560	5,075,652.81	673,450.92	97.20
GWD 4570	11,569.12	11,393.98	4560	23.32	.812	Master GW# 4570	5,075,645.94	673,449.33	98.11
GWD 4580	11,595.13	11,419.74	4570	26.01	.812	Master GW# 4580	5,075,638.27	673,447.56	99.04
GWD 4590	11,620.07	11,444.59	4580	24.94	.812	Master GW# 4590	5,075,630.90	673,445.85	99.77
GWD 4600	11,646.99	11,471.20	4590	26.92	.812	Master GW# 4600	5,075,622.92	673,444.01	100.35
GWD 4610	11,675.02	11,498.84	4600	28.04	.812	Master GW# 4610	5,075,614.61	673,442.09	100.85
GWD 4620	11,700.27	11,523.96	4610	25.24	.812	Master GW# 4620	5,075,607.12	673,440.36	101.22

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 4630	11,728.00	11,551.28	4620	27.74	.812	Master GW# 4630	5,075,598.89	673,438.45	101.55
GWD 4640	11,754.43	11,577.53	4630	26.43	.812	Master GW# 4640	5,075,591.04	673,436.63	101.83
GWD 4650	11,781.38	11,604.21	4640	26.95	.812	Master GW# 4650	5,075,583.05	673,434.77	102.12
GWD 4660	11,806.52	11,628.92	4650	25.14	.812	Master GW# 4660	5,075,575.59	673,433.01	102.38
GWD 4670	11,829.61	11,652.17	4660	23.09	.812	Master GW# 4670	5,075,568.75	673,431.39	102.63
GWD 4680	11,853.00	11,675.27	4670	23.39	.812	Master GW# 4680	5,075,561.82	673,429.75	102.88
GWD 4690	11,879.11	11,701.03	4680	26.11	.812	Master GW# 4690	5,075,554.07	673,427.92	103.14
GWD 4700	11,906.62	11,728.53	4690	27.51	.812	Master GW# 4700	5,075,545.91	673,426.00	103.28
GWD 4710	11,931.46	11,753.69	4700	24.84	.812	Master GW# 4710	5,075,538.54	673,424.27	103.22
GWD 4720	11,959.50	11,781.30	4710	28.04	.812	Master GW# 4720	5,075,530.22	673,422.33	102.92
GWD 4730	11,982.64	11,804.11	4720	23.14	.812	Master GW# 4730	5,075,523.36	673,420.72	102.59
GWD 4740	12,009.18	11,830.21	4730	26.54	.812	Master GW# 4740	5,075,515.50	673,418.88	102.18
GWD 4750	12,035.68	11,856.63	4740	26.51	.812	Master GW# 4750	5,075,507.64	673,417.04	101.79
GWD 4760	12,063.21	11,883.51	4750	27.52	.812	Master GW# 4760	5,075,499.47	673,415.14	101.45
GWD 4770	12,089.46	11,909.75	4760	26.25	.812	Master GW# 4770	5,075,491.68	673,413.31	101.22
GWD 4780	12,117.32	11,937.09	4770	27.86	.812	Master GW# 4780	5,075,483.41	673,411.39	101.03
GWD 4790	12,144.20	11,963.56	4780	26.88	.812	Master GW# 4790	5,075,475.43	673,409.54	100.87
GWD 4800	12,170.55	11,989.65	4790	26.34	.812	Master GW# 4800	5,075,467.61	673,407.72	100.74
GWD 4810	12,198.08	12,016.99	4800	27.53	.812	Master GW# 4810	5,075,459.43	673,405.82	100.60
GWD 4820	12,225.55	12,043.59	4810	27.47	.812	Master GW# 4820	5,075,451.29	673,403.90	100.49
GWD 4830	12,251.96	12,070.16	4820	26.41	.812	Master GW# 4830	5,075,443.45	673,402.06	100.39
GWD 4840	12,280.15	12,097.62	4830	28.19	.812	Master GW# 4840	5,075,435.08	673,400.11	100.15
GWD 4850	12,306.84	12,124.04	4840	26.70	.812	Master GW# 4850	5,075,427.16	673,398.26	99.86
GWD 4860	12,332.65	12,149.86	4850	25.80	.812	Master GW# 4860	5,075,419.51	673,396.49	99.55
GWD 4870	12,356.52	12,173.53	4860	23.87	.812	Master GW# 4870	5,075,412.42	673,394.84	99.28
GWD 4880	12,378.10	12,194.58	4870	21.58	.812	Master GW# 4880	5,075,406.02	673,393.34	99.08
GWD 4890	12,404.62	12,221.16	4880	26.51	.812	Master GW# 4890	5,075,398.15	673,391.50	98.89
GWD 4900	12,432.23	12,248.62	4890	27.61	.812	Master GW# 4900	5,075,389.96	673,389.59	98.71
GWD 4910	12,455.57	12,271.49	4900	23.34	.812	Master GW# 4910	5,075,383.03	673,387.98	98.58
GWD 4920	12,482.64	12,298.25	4910	27.07	.812	Master GW# 4920	5,075,374.99	673,386.09	98.49
GWD 4930	12,508.95	12,324.39	4920	26.30	.812	Master GW# 4930	5,075,367.19	673,384.23	98.50
GWD 4940	12,536.68	12,351.90	4930	27.73	.812	Master GW# 4940	5,075,358.97	673,382.28	98.60

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 4950	12,564.17	12,378.97	4940	27.49	.812	Master GW# 4950	5,075,350.82	673,380.34	98.74
GWD 4960	12,591.53	12,406.08	4950	27.36	.812	Master GW# 4960	5,075,342.70	673,378.42	98.91
GWD 4970	12,615.45	12,429.68	4960	23.91	.812	Master GW# 4970	5,075,335.61	673,376.73	99.08
GWD 4980	12,642.13	12,456.12	4970	26.68	.812	Master GW# 4980	5,075,327.70	673,374.84	99.19
GWD 4990	12,667.83	12,481.94	4980	25.70	.812	Master GW# 4990	5,075,320.08	673,373.04	99.19
GWD 5000	12,695.49	12,509.16	4990	27.65	.812	Master GW# 5000	5,075,311.87	673,371.09	99.18
GWD 5010	12,717.64	12,530.93	5000	22.15	.812	Master GW# 5010	5,075,305.31	673,369.53	99.14
GWD 5020	12,742.53	12,555.62	5010	24.90	.812	Master GW# 5020	5,075,297.92	673,367.76	99.08
GWD 5030	12,769.01	12,581.72	5020	26.48	.812	Master GW# 5030	5,075,290.07	673,365.89	98.99
GWD 5040	12,794.44	12,606.87	5030	25.43	.812	Master GW# 5040	5,075,282.54	673,364.09	98.87
GWD 5050	12,818.78	12,630.94	5040	24.34	.812	Master GW# 5050	5,075,275.32	673,362.36	98.74
GWD 5060	12,844.31	12,656.06	5050	25.53	.812	Master GW# 5060	5,075,267.75	673,360.55	98.68
GWD 5070	12,869.94	12,681.13	5060	25.63	.812	Master GW# 5070	5,075,260.15	673,358.74	98.69
GWD 5080	12,896.32	12,706.99	5070	26.38	.812	Master GW# 5080	5,075,252.33	673,356.88	98.81
GWD 5090	12,922.98	12,733.16	5080	26.66	.812	Master GW# 5090	5,075,244.42	673,355.01	98.97
GWD 5100	12,947.58	12,757.73	5090	24.60	.812	Master GW# 5100	5,075,237.13	673,353.29	99.12
GWD 5110	12,973.90	12,783.33	5100	26.33	.812	Master GW# 5110	5,075,229.32	673,351.44	99.25
GWD 5120	13,001.74	12,810.54	5110	27.83	.812	Master GW# 5120	5,075,221.07	673,349.46	99.34
GWD 5130	13,018.38	12,826.91	5120	16.64	.812	Master GW# 5130	5,075,216.13	673,348.30	99.40
GWD 5140	13,044.26	12,852.69	5130	25.88	.812	Master GW# 5140	5,075,208.45	673,346.47	99.49
GWD 5150	13,070.06	12,878.12	5140	25.80	.812	Master GW# 5150	5,075,200.80	673,344.65	99.60
GWD 5160	13,095.07	12,902.88	5150	25.01	.812	Master GW# 5160	5,075,193.39	673,342.87	99.76
GWD 5170	13,122.91	12,930.31	5160	27.84	.812	Master GW# 5170	5,075,185.14	673,340.90	99.93
GWD 5180	13,149.82	12,956.80	5170	26.91	.812	Master GW# 5180	5,075,177.16	673,338.99	100.08
GWD 5190	13,169.71	12,976.54	5180	19.89	.812	Master GW# 5190	5,075,171.27	673,337.59	100.21
GWD 5200	13,196.98	13,003.33	5190	27.27	.812	Master GW# 5200	5,075,163.18	673,335.66	100.42
GWD 5210	13,221.29	13,027.37	5200	24.31	.812	Master GW# 5210	5,075,155.98	673,333.94	100.59
GWD 5220	13,247.60	13,053.58	5210	26.31	.812	Master GW# 5220	5,075,148.18	673,332.07	100.76
GWD 5230	13,275.82	13,081.73	5220	28.23	.812	Master GW# 5230	5,075,139.82	673,330.04	100.89
GWD 5240	13,303.09	13,108.42	5230	27.27	.812	Master GW# 5240	5,075,131.74	673,328.07	100.99
GWD 5250	13,327.67	13,133.11	5240	24.58	.812	Master GW# 5250	5,075,124.45	673,326.33	101.11
GWD 5260	13,354.20	13,159.39	5250	26.52	.812	Master GW# 5260	5,075,116.58	673,324.50	101.23

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 5270	13,375.66	13,180.65	5260	21.46	.812	Master GW# 5270	5,075,110.21	673,323.00	101.30
GWD 5280	13,401.15	13,205.82	5270	25.49	.812	Master GW# 5280	5,075,102.66	673,321.19	101.35
GWD 5290	13,426.28	13,230.72	5280	25.13	.812	Master GW# 5290	5,075,095.20	673,319.43	101.33
GWD 5300	13,450.47	13,254.53	5290	24.20	.812	Master GW# 5300	5,075,088.02	673,317.73	101.24
GWD 5310	13,476.72	13,280.59	5300	26.25	.812	Master GW# 5310	5,075,080.24	673,315.88	101.13
GWD 5320	13,503.67	13,307.45	5310	26.96	.812	Master GW# 5320	5,075,072.25	673,313.98	101.02
GWD 5330	13,529.15	13,332.71	5320	25.47	.812	Master GW# 5330	5,075,064.69	673,312.19	101.01
GWD 5340	13,556.53	13,359.66	5330	27.38	.812	Master GW# 5340	5,075,056.57	673,310.28	101.17
GWD 5350	13,584.94	13,387.67	5340	28.41	.812	Master GW# 5350	5,075,048.14	673,308.31	101.49
GWD 5360	13,610.21	13,412.88	5350	25.27	.812	Master GW# 5360	5,075,040.64	673,306.56	101.80
GWD 5370	13,636.90	13,439.12	5360	26.69	.812	Master GW# 5370	5,075,032.73	673,304.71	102.00
GWD 5380	13,664.45	13,466.04	5370	27.55	.812	Master GW# 5380	5,075,024.55	673,302.79	102.03
GWD 5390	13,683.19	13,485.16	5380	18.75	.812	Master GW# 5390	5,075,018.99	673,301.49	102.03
GWD 5400	13,704.97	13,506.47	5390	21.77	.812	Master GW# 5400	5,075,012.52	673,299.98	101.98
GWD 5410	13,728.14	13,529.10	5400	23.17	.812	Master GW# 5410	5,075,005.64	673,298.37	101.96
GWD 5420	13,754.37	13,555.15	5410	26.23	.812	Master GW# 5420	5,074,997.86	673,296.55	101.98
GWD 5430	13,782.36	13,582.56	5420	27.99	.812	Master GW# 5430	5,074,989.55	673,294.60	102.08
GWD 5440	13,806.87	13,606.47	5430	24.51	.812	Master GW# 5440	5,074,982.28	673,292.90	102.22
GWD 5450	13,832.01	13,631.15	5440	25.14	.812	Master GW# 5450	5,074,974.82	673,291.16	102.36
GWD 5460	13,859.19	13,658.01	5450	27.18	.812	Master GW# 5460	5,074,966.75	673,289.27	102.48
GWD 5470	13,882.90	13,681.49	5460	23.72	.812	Master GW# 5470	5,074,959.71	673,287.62	102.49
GWD 5480	13,905.61	13,703.87	5470	22.71	.812	Master GW# 5480	5,074,952.98	673,286.03	102.46
GWD 5490	13,932.33	13,730.00	5480	26.72	.812	Master GW# 5490	5,074,945.05	673,284.15	102.41
GWD 5500	13,960.35	13,757.56	5490	28.02	.812	Master GW# 5500	5,074,936.74	673,282.17	102.42
GWD 5510	13,987.57	13,784.62	5500	27.22	.812	Master GW# 5510	5,074,928.67	673,280.25	102.48
GWD 5520	14,014.58	13,811.14	5510	27.01	.812	Master GW# 5520	5,074,920.66	673,278.35	102.61
GWD 5530	14,039.28	13,835.75	5520	24.70	.812	Master GW# 5530	5,074,913.33	673,276.64	102.80
GWD 5540	14,067.24	13,863.23	5530	27.96	.812	Master GW# 5540	5,074,905.03	673,274.71	103.05
GWD 5550	14,094.92	13,890.69	5540	27.67	.812	Master GW# 5550	5,074,896.82	673,272.80	103.36
GWD 5560	14,115.70	13,911.28	5550	20.79	.812	Master GW# 5560	5,074,890.65	673,271.35	103.67
GWD 5570	14,141.99	13,937.29	5560	26.28	.812	Master GW# 5570	5,074,882.87	673,269.55	104.17
GWD 5580	14,167.34	13,962.79	5570	25.35	.812	Master GW# 5580	5,074,875.36	673,267.80	104.76

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 5590	14,192.85	13,988.10	5580	25.51	.812	Master GW# 5590	5,074,867.82	673,266.05	105.46
GWD 5600	14,219.39	14,014.33	5590	26.54	.812	Master GW# 5600	5,074,859.98	673,264.22	106.29
GWD 5610	14,240.81	14,035.58	5600	21.42	.812	Master GW# 5610	5,074,853.65	673,262.74	106.99
GWD 5620	14,267.97	14,062.34	5610	27.16	.812	Master GW# 5620	5,074,845.64	673,260.87	107.84
GWD 5630	14,293.03	14,087.18	5620	25.05	.812	Master GW# 5630	5,074,838.23	673,259.13	108.55
GWD 5640	14,320.73	14,114.58	5630	27.70	.812	Master GW# 5640	5,074,830.03	673,257.22	109.18
GWD 5650	14,346.58	14,140.18	5640	25.85	.812	Master GW# 5650	5,074,822.37	673,255.43	109.57
GWD 5660	14,373.85	14,167.13	5650	27.27	.812	Master GW# 5660	5,074,814.28	673,253.54	109.82
GWD 5670	14,400.38	14,193.44	5660	26.53	.812	Master GW# 5670	5,074,806.40	673,251.70	109.99
GWD 5680	14,427.69	14,220.41	5670	27.31	.812	Master GW# 5680	5,074,798.30	673,249.79	110.10
GWD 5690	14,454.92	14,247.43	5680	27.23	.812	Master GW# 5690	5,074,790.22	673,247.90	110.19
GWD 5700	14,482.80	14,274.88	5690	27.88	.812	Master GW# 5700	5,074,781.95	673,245.95	110.27
GWD 5710	14,509.73	14,301.52	5700	26.93	.812	Master GW# 5710	5,074,773.95	673,244.08	110.31
GWD 5720	14,531.34	14,323.13	5710	21.60	.812	Master GW# 5720	5,074,767.54	673,242.58	110.32
GWD 5730	14,557.43	14,348.67	5720	26.09	.812	Master GW# 5730	5,074,759.80	673,240.75	110.28
GWD 5740	14,583.91	14,374.63	5730	26.48	.812	Master GW# 5740	5,074,751.96	673,238.85	110.15
GWD 5750	14,610.27	14,400.19	5740	26.36	.812	Master GW# 5750	5,074,744.14	673,236.98	110.08
GWD 5760	14,632.50	14,422.37	5750	22.23	.812	Master GW# 5760	5,074,737.54	673,235.43	110.08
GWD 5770	14,659.65	14,445.45	5760	27.15	.812	Master GW# 5770	5,074,729.48	673,233.54	110.17
GWD 5780	14,681.06	14,470.24	5770	21.41	.812	Master GW# 5780	5,074,723.13	673,232.07	110.30
GWD 5790	14,708.52	14,497.27	5780	27.46	.812	Master GW# 5790	5,074,714.97	673,230.18	110.46
GWD 5800	14,734.72	14,522.88	5790	26.20	.812	Master GW# 5800	5,074,707.20	673,228.36	110.63
GWD 5810	14,760.14	14,547.98	5800	25.42	.812	Master GW# 5810	5,074,699.65	673,226.60	110.83
GWD 5820	14,788.43	14,575.86	5810	28.28	.812	Master GW# 5820	5,074,691.27	673,224.62	111.11
GWD 5830	14,813.32	14,600.44	5820	24.89	.812	Master GW# 5830	5,074,683.89	673,222.87	111.38
GWD 5840	14,838.99	14,625.60	5830	25.67	.812	Master GW# 5840	5,074,676.28	673,221.06	111.70
GWD 5850	14,865.30	14,651.78	5840	26.31	.812	Master GW# 5850	5,074,668.49	673,219.19	111.99
GWD 5860	14,892.49	14,678.56	5850	27.19	.812	Master GW# 5860	5,074,660.43	673,217.27	112.29
GWD 5870	14,919.79	14,705.83	5860	27.30	.812	Master GW# 5870	5,074,652.34	673,215.35	112.58
GWD 5880	14,946.29	14,731.95	5870	26.50	.812	Master GW# 5880	5,074,644.48	673,213.50	112.85
GWD 5890	14,974.98	14,760.65	5880	28.68	.812	Master GW# 5890	5,074,635.97	673,211.51	113.05
GWD 5900	15,003.06	14,788.25	5890	28.08	.812	Master GW# 5900	5,074,627.62	673,209.60	113.07

ENBDNR0005234

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 5910	15,030.83	14,815.82	5900	27.77	.812	Master GW# 5910	5,074,619.36	673,207.75	113.02
GWD 5920	15,057.37	14,841.84	5910	26.53	.812	Master GW# 5920	5,074,611.46	673,205.99	113.01
GWD 5930	15,085.40	14,869.70	5920	28.04	.812	Master GW# 5930	5,074,603.12	673,204.15	113.00
GWD 5940	15,112.89	14,896.98	5930	27.49	.812	Master GW# 5940	5,074,594.93	673,202.34	113.04
GWD 5950	15,134.37	14,918.41	5940	21.48	.812	Master GW# 5950	5,074,588.54	673,200.91	113.09
GWD 5960	15,159.55	14,943.55	5950	25.18	.812	Master GW# 5960	5,074,581.06	673,199.22	113.17
BND 9	15,173.89	14,957.63	5960	14.34	.812	63.4D Bend .8 RT 1.5 Up	5,074,576.80	673,198.24	113.24
GWD 5970	15,179.39	14,963.03	5960	19.84	.812	Master GW# 5970	5,074,575.17	673,197.84	113.32
GWD 5980	15,205.87	14,989.43	5970	26.47	.812	Master GW# 5980	5,074,567.35	673,195.88	113.73
GWD 5990	15,233.89	15,017.10	5980	28.02	.812	Master GW# 5990	5,074,559.09	673,193.76	114.19
GWD 6000	15,260.97	15,044.06	5990	27.08	.812	Master GW# 6000	5,074,551.11	673,191.70	114.66
GWD 6010	15,283.80	15,066.71	6000	22.83	.812	Master GW# 6010	5,074,544.38	673,189.99	115.10
GWD 6020	15,311.31	15,093.99	6010	27.51	.812	Master GW# 6020	5,074,536.26	673,187.96	115.60
GWD 6030	15,338.41	15,120.87	6020	27.10	.812	Master GW# 6030	5,074,528.25	673,185.98	116.00
GWD 6040	15,365.86	15,148.15	6030	27.45	.812	Master GW# 6040	5,074,520.13	673,184.00	116.38
GWD 6050	15,393.56	15,175.36	6040	27.70	.812	Master GW# 6050	5,074,511.93	673,182.00	116.74
BND 10	15,419.37	15,201.29	6050	25.81	.812	51.5D Bend 1.7 LT 3.3 Down	5,074,504.28	673,180.18	117.00
GWD 6060	15,419.97	15,201.89	6050	26.41	.812	Master GW# 6060	5,074,504.11	673,180.14	117.00
BND 11	15,425.66	15,207.51	6060	5.69	.812	49.6D Bend .9 LT 2.5 Down	5,074,502.41	673,179.80	116.96
GWD 6070	15,442.30	15,223.95	6060	22.33	.812	Master GW# 6070	5,074,497.42	673,178.93	116.53
BND 12	15,447.98	15,229.55	6070	5.67	.812	47.5D Bend 1.5 RT 4.1 Up	5,074,495.72	673,178.64	116.39
GWD 6080	15,464.57	15,245.94	6070	22.27	.812	Master GW# 6080	5,074,490.76	673,177.66	116.28
OVL 1	15,478.71	15,259.83	6080	14.14	.812	8.8% Ovality	5,074,486.56	673,176.81	116.22
IDR 3	15,478.82	15,260.00	6080	14.24	.812	17.35in Internal Diameter - On ovality	5,074,486.51	673,176.79	116.22
BND 13	15,481.28	15,262.43	6080	16.71	.812	29.6D Bend 5.2 RT 7.7 Up	5,074,485.78	673,176.61	116.25
GWD 6090	15,485.63	15,266.73	6080	21.06	.812	Master GW# 6090	5,074,484.51	673,176.26	116.38
GWD 6100	15,511.91	15,292.61	6090	26.28	.812	Master GW# 6100	5,074,476.89	673,173.99	117.34
BND 14	15,529.24	15,309.99	6100	17.33	.812	25.0D Bend 3.1 LT 5.2 Down	5,074,471.85	673,172.53	117.93
IDR 4	15,529.32	15,310.07	6100	17.41	.812	17.81in Internal Diameter - On ovality	5,074,471.82	673,172.52	117.93
OVL 2	15,529.34	15,309.89	6100	17.43	.812	5.4% Ovality	5,074,471.87	673,172.54	117.92
GWD 6110	15,532.15	15,312.91	6100	20.24	.812	Master GW# 6110	5,074,470.98	673,172.32	117.96
GWD 6120	15,551.62	15,332.12	6110	19.47	.812	Master GW# 6120	5,074,465.19	673,171.01	118.02

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 6130	15,577.35	15,357.80	6120	25.73	.812	Master GW# 6130	5,074,457.53	673,169.32	118.08
GWD 6140	15,603.57	15,383.83	6130	26.22	.812	Master GW# 6140	5,074,449.74	673,167.56	118.14
GWD 6150	15,628.79	15,408.93	6140	25.22	.812	Master GW# 6150	5,074,442.25	673,165.82	118.16
GWD 6160	15,655.55	15,435.47	6150	26.75	.812	Master GW# 6160	5,074,434.31	673,163.95	118.12
GWD 6170	15,682.25	15,461.82	6160	26.70	.812	Master GW# 6170	5,074,426.38	673,162.09	118.10
GWD 6180	15,708.60	15,488.13	6170	26.35	.812	Master GW# 6180	5,074,418.57	673,160.24	118.13
GWD 6190	15,735.16	15,514.58	6180	26.57	.812	Master GW# 6190	5,074,410.69	673,158.37	118.18
GWD 6200	15,761.42	15,540.57	6190	26.25	.812	Master GW# 6200	5,074,402.90	673,156.52	118.26
GWD 6210	15,786.97	15,565.84	6200	25.55	.812	Master GW# 6210	5,074,395.33	673,154.72	118.32
GWD 6220	15,814.63	15,593.47	6210	27.66	.812	Master GW# 6220	5,074,387.13	673,152.73	118.34
GWD 6230	15,842.68	15,621.20	6220	28.06	.812	Master GW# 6230	5,074,378.82	673,150.73	118.35
GWD 6240	15,868.61	15,647.00	6230	25.93	.812	Master GW# 6240	5,074,371.13	673,148.87	118.33
GWD 6250	15,895.98	15,674.17	6240	27.37	.812	Master GW# 6250	5,074,363.03	673,146.87	118.32
GWD 6260	15,924.08	15,702.33	6250	28.10	.812	Master GW# 6260	5,074,354.72	673,144.81	118.25
GWD 6270	15,951.77	15,729.90	6260	27.69	.812	Master GW# 6270	5,074,346.53	673,142.75	118.15
GWD 6280	15,978.26	15,756.19	6270	26.49	.812	Master GW# 6280	5,074,338.72	673,140.74	118.00
BND 15	15,982.22	15,760.13	6280	3.96	.812	45.9D Bend 2.2 LT 2.1 Up	5,074,337.55	673,140.44	117.98
GWD 6290	16,005.13	15,782.90	6280	26.86	.812	Master GW# 6290	5,074,330.73	673,138.92	118.10
GWD 6300	16,029.39	15,807.02	6290	24.26	.812	Master GW# 6300	5,074,323.52	673,137.30	118.21
GWD 6310	16,056.47	15,833.58	6300	27.08	.812	Master GW# 6310	5,074,315.47	673,135.46	118.27
GWD 6320	16,084.99	15,861.88	6310	28.52	.812	Master GW# 6320	5,074,307.00	673,133.50	118.26
GWD 6330	16,111.79	15,888.27	6320	26.81	.812	Master GW# 6330	5,074,299.05	673,131.63	118.21
GWD 6340	16,137.64	15,914.14	6330	25.85	.812	Master GW# 6340	5,074,291.37	673,129.83	118.14
GWD 6350	16,164.19	15,940.15	6340	26.54	.812	Master GW# 6350	5,074,283.50	673,127.96	118.00
GWD 6360	16,191.61	15,967.13	6350	27.42	.812	Master GW# 6360	5,074,275.37	673,126.04	117.85
GWD 6370	16,216.90	15,992.90	6360	25.30	.812	Master GW# 6370	5,074,267.86	673,124.29	117.72
GWD 6380	16,236.97	16,012.27	6370	20.07	.812	Master GW# 6380	5,074,261.90	673,122.92	117.60
GWD 6390	16,263.56	16,038.42	6380	26.58	.812	Master GW# 6390	5,074,254.00	673,121.13	117.40
GWD 6400	16,289.19	16,063.45	6390	25.63	.812	Master GW# 6400	5,074,246.38	673,119.40	117.21
GWD 6410	16,316.13	16,089.98	6400	26.94	.812	Master GW# 6410	5,074,238.37	673,117.58	117.05
GWD 6420	16,342.03	16,115.89	6410	25.90	.812	Master GW# 6420	5,074,230.67	673,115.84	116.96
GWD 6430	16,369.88	16,143.22	6420	27.85	.812	Master GW# 6430	5,074,222.39	673,113.97	116.85

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 6440	16,397.86	16,170.70	6430	27.97	.812	Master GW# 6440	5,074,214.07	673,112.08	116.69
GWD 6450	16,425.28	16,197.77	6440	27.43	.812	Master GW# 6450	5,074,205.93	673,110.22	116.50
GWD 6460	16,453.16	16,225.48	6450	27.87	.812	Master GW# 6460	5,074,197.66	673,108.29	116.33
GWD 6470	16,476.76	16,249.05	6460	23.60	.812	Master GW# 6470	5,074,190.65	673,106.66	116.23
GWD 6480	16,500.90	16,273.08	6470	24.14	.812	Master GW# 6480	5,074,183.47	673,105.02	116.12
GWD 6490	16,528.58	16,300.43	6480	27.68	.812	Master GW# 6490	5,074,175.24	673,103.17	115.97
GWD 6500	16,550.26	16,322.12	6490	21.68	.812	Master GW# 6500	5,074,168.79	673,101.76	115.91
GWD 6510	16,574.58	16,346.07	6500	24.32	.812	Master GW# 6510	5,074,161.55	673,100.17	115.86
GWD 6520	16,599.87	16,371.20	6510	25.29	.812	Master GW# 6520	5,074,154.02	673,098.50	115.81
GWD 6530	16,619.38	16,390.71	6520	19.51	.812	Master GW# 6530	5,074,148.22	673,097.19	115.75
GWD 6540	16,645.75	16,416.70	6530	26.37	.812	Master GW# 6540	5,074,140.38	673,095.40	115.63
GWD 6550	16,671.02	16,441.80	6540	25.27	.812	Master GW# 6550	5,074,132.88	673,093.63	115.49
GWD 6560	16,695.87	16,466.41	6550	24.85	.812	Master GW# 6560	5,074,125.52	673,091.83	115.46
GWD 6570	16,723.98	16,494.13	6560	28.11	.812	Master GW# 6570	5,074,117.20	673,089.81	115.50
GWD 6580	16,748.58	16,518.27	6570	24.59	.812	Master GW# 6580	5,074,109.91	673,088.04	115.58
GWD 6590	16,774.75	16,544.37	6580	26.17	.812	Master GW# 6590	5,074,102.15	673,086.18	115.67
GWD 6600	16,802.28	16,571.43	6590	27.53	.812	Master GW# 6600	5,074,093.99	673,084.24	115.81
GWD 6610	16,828.19	16,597.08	6600	25.91	.812	Master GW# 6610	5,074,086.31	673,082.42	115.96
GWD 6620	16,852.61	16,621.46	6610	24.42	.812	Master GW# 6620	5,074,079.06	673,080.73	116.12
GWD 6630	16,880.57	16,648.88	6620	27.96	.812	Master GW# 6630	5,074,070.75	673,078.81	116.29
GWD 6640	16,906.80	16,674.72	6630	26.23	.812	Master GW# 6640	5,074,062.96	673,077.03	116.44
GWD 6650	16,930.83	16,698.34	6640	24.03	.812	Master GW# 6650	5,074,055.82	673,075.41	116.56
GWD 6660	16,952.15	16,719.48	6650	21.32	.812	Master GW# 6660	5,074,049.48	673,073.97	116.64
GWD 6670	16,974.47	16,741.77	6660	22.32	.812	Master GW# 6670	5,074,042.85	673,072.46	116.71
GWD 6680	16,997.15	16,764.08	6670	22.68	.812	Master GW# 6680	5,074,036.11	673,070.92	116.75
GWD 6690	17,021.08	16,787.92	6680	23.92	.812	Master GW# 6690	5,074,029.00	673,069.26	116.73
GWD 6700	17,048.65	16,815.40	6690	27.58	.812	Master GW# 6700	5,074,020.82	673,067.33	116.67
GWD 6710	17,075.06	16,841.55	6700	26.41	.812	Master GW# 6710	5,074,012.99	673,065.47	116.64
GWD 6720	17,099.12	16,865.28	6710	24.06	.812	Master GW# 6720	5,074,005.86	673,063.76	116.64
GWD 6730	17,120.42	16,886.44	6720	21.30	.812	Master GW# 6730	5,073,999.55	673,062.23	116.66
GWD 6740	17,148.00	16,913.57	6730	27.57	.812	Master GW# 6740	5,073,991.38	673,060.26	116.70
GWD 6750	17,175.69	16,941.13	6740	27.69	.812	Master GW# 6750	5,073,983.17	673,058.28	116.76

ENBDNR0005237

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 6760	17,201.66	16,966.99	6750	25.96	.812	Master GW# 6760	5,073,975.48	673,056.42	116.75
GWD 6770	17,229.84	16,994.67	6760	28.18	.812	Master GW# 6770	5,073,967.11	673,054.50	116.79
GWD 6780	17,257.70	17,022.12	6770	27.86	.812	Master GW# 6780	5,073,958.80	673,052.72	116.95
GWD 6790	17,284.36	17,048.66	6780	26.66	.812	Master GW# 6790	5,073,950.86	673,051.02	117.11
GWD 6800	17,310.47	17,074.60	6790	26.11	.812	Master GW# 6800	5,073,943.08	673,049.35	117.28
GWD 6810	17,337.52	17,101.69	6800	27.06	.812	Master GW# 6810	5,073,935.01	673,047.62	117.43
GWD 6820	17,365.18	17,128.92	6810	27.66	.812	Master GW# 6820	5,073,926.78	673,045.81	117.59
GWD 6830	17,390.90	17,155.00	6820	25.72	.812	Master GW# 6830	5,073,919.14	673,044.07	117.74
GWD 6840	17,417.16	17,181.22	6830	26.26	.812	Master GW# 6840	5,073,911.34	673,042.25	117.88
GWD 6850	17,443.60	17,207.65	6840	26.44	.812	Master GW# 6850	5,073,903.50	673,040.39	118.00
GWD 6860	17,469.61	17,233.18	6850	26.01	.812	Master GW# 6860	5,073,895.80	673,038.52	118.10
GWD 6870	17,496.22	17,259.61	6860	26.61	.812	Master GW# 6870	5,073,887.92	673,036.59	118.21
GWD 6880	17,523.21	17,286.34	6870	27.00	.812	Master GW# 6880	5,073,879.92	673,034.65	118.32
GWD 6890	17,551.45	17,314.19	6880	28.23	.812	Master GW# 6890	5,073,871.55	673,032.65	118.40
GWD 6900	17,578.62	17,341.39	6890	27.17	.812	Master GW# 6900	5,073,863.49	673,030.77	118.44
GWD 6910	17,604.71	17,367.82	6900	26.10	.812	Master GW# 6910	5,073,855.73	673,029.00	118.46
GWD 6920	17,631.92	17,394.67	6910	27.20	.812	Master GW# 6920	5,073,847.65	673,027.16	118.46
GWD 6930	17,659.16	17,420.85	6920	27.24	.812	Master GW# 6930	5,073,839.55	673,025.30	118.47
GWD 6940	17,686.75	17,447.89	6930	27.59	.812	Master GW# 6940	5,073,831.36	673,023.40	118.50
GWD 6950	17,713.27	17,474.42	6940	26.52	.812	Master GW# 6950	5,073,823.49	673,021.55	118.54
GWD 6960	17,739.97	17,500.68	6950	26.70	.812	Master GW# 6960	5,073,815.57	673,019.66	118.58
GWD 6970	17,766.76	17,527.23	6960	26.79	.812	Master GW# 6970	5,073,807.62	673,017.77	118.63
GWD 6980	17,793.92	17,554.29	6970	27.16	.812	Master GW# 6980	5,073,799.57	673,015.88	118.66
GWD 6990	17,821.18	17,580.93	6980	27.27	.812	Master GW# 6990	5,073,791.47	673,013.98	118.70
GWD 7000	17,848.54	17,607.86	6990	27.36	.812	Master GW# 7000	5,073,783.35	673,012.09	118.80
GWD 7010	17,874.94	17,633.99	7000	26.40	.812	Master GW# 7010	5,073,775.51	673,010.29	118.91
GWD 7020	17,901.15	17,659.68	7010	26.21	.812	Master GW# 7020	5,073,767.72	673,008.51	119.04
GWD 7030	17,928.47	17,687.04	7020	27.33	.812	Master GW# 7030	5,073,759.60	673,006.64	119.12
GWD 7040	17,954.21	17,712.18	7030	25.73	.812	Master GW# 7040	5,073,751.97	673,004.86	119.14
GWD 7050	17,980.70	17,738.50	7040	26.49	.812	Master GW# 7050	5,073,744.10	673,003.02	119.07
GWD 7060	18,005.00	17,762.82	7050	24.30	.812	Master GW# 7060	5,073,736.89	673,001.32	119.03
GWD 7070	18,031.25	17,788.92	7060	26.25	.812	Master GW# 7070	5,073,729.10	672,999.50	119.05

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 7080	18,054.30	17,811.79	7070	23.05	.812	Master GW# 7080	5,073,722.26	672,997.90	119.09
GWD 7090	18,080.71	17,838.15	7080	26.40	.812	Master GW# 7090	5,073,714.42	672,996.06	119.07
GWD 7100	18,107.68	17,864.86	7090	26.98	.812	Master GW# 7100	5,073,706.42	672,994.18	118.98
GWD 7110	18,132.51	17,889.29	7100	24.82	.812	Master GW# 7110	5,073,699.05	672,992.46	118.86
GWD 7120	18,159.87	17,916.24	7110	27.36	.812	Master GW# 7120	5,073,690.92	672,990.60	118.78
GWD 7130	18,187.92	17,944.15	7120	28.05	.812	Master GW# 7130	5,073,682.59	672,988.67	118.79
GWD 7140	18,213.15	17,968.86	7130	25.23	.812	Master GW# 7140	5,073,675.11	672,986.88	118.88
GWD 7150	18,239.84	17,995.40	7140	26.69	.812	Master GW# 7150	5,073,667.19	672,985.01	118.98
GWD 7160	18,266.80	18,021.90	7150	26.96	.812	Master GW# 7160	5,073,659.19	672,983.14	119.04
GWD 7170	18,293.76	18,048.69	7160	26.96	.812	Master GW# 7170	5,073,651.19	672,981.25	119.10
GWD 7180	18,315.10	18,069.85	7170	21.35	.812	Master GW# 7180	5,073,644.86	672,979.76	119.18
GWD 7190	18,339.96	18,095.37	7180	24.86	.812	Master GW# 7190	5,073,637.48	672,978.04	119.29
GWD 7200	18,363.66	18,118.38	7190	23.70	.812	Master GW# 7200	5,073,630.44	672,976.41	119.38
GWD 7210	18,391.59	18,145.34	7200	27.93	.812	Master GW# 7210	5,073,622.15	672,974.48	119.45
GWD 7220	18,417.00	18,170.47	7210	25.40	.812	Master GW# 7220	5,073,614.60	672,972.72	119.46
GWD 7230	18,445.09	18,198.14	7220	28.09	.812	Master GW# 7230	5,073,606.26	672,970.78	119.45
GWD 7240	18,470.88	18,223.58	7230	25.79	.812	Master GW# 7240	5,073,598.61	672,968.98	119.43
GWD 7250	18,498.50	18,250.75	7240	27.63	.812	Master GW# 7250	5,073,590.42	672,967.05	119.43
GWD 7260	18,524.14	18,276.28	7250	25.63	.812	Master GW# 7260	5,073,582.81	672,965.26	119.49
GWD 7270	18,550.55	18,302.52	7260	26.41	.812	Master GW# 7270	5,073,574.97	672,963.43	119.63
GWD 7280	18,579.17	18,330.70	7270	28.62	.812	Master GW# 7280	5,073,566.47	672,961.45	119.85
GWD 7290	18,606.81	18,357.77	7280	27.64	.812	Master GW# 7290	5,073,558.27	672,959.55	120.08
GWD 7300	18,634.39	18,385.09	7290	27.58	.812	Master GW# 7300	5,073,550.09	672,957.65	120.35
GWD 7310	18,658.64	18,408.85	7300	24.25	.812	Master GW# 7310	5,073,542.89	672,955.99	120.61
GWD 7320	18,686.46	18,436.47	7310	27.82	.812	Master GW# 7320	5,073,534.63	672,954.08	120.85
GWD 7330	18,711.45	18,461.18	7320	24.99	.812	Master GW# 7330	5,073,527.20	672,952.40	121.03
GWD 7340	18,737.96	18,487.54	7330	26.51	.812	Master GW# 7340	5,073,519.32	672,950.59	121.07
GWD 7350	18,765.24	18,514.81	7340	27.27	.812	Master GW# 7350	5,073,511.22	672,948.70	121.15
GWD 7360	18,789.90	18,539.20	7350	24.66	.812	Master GW# 7360	5,073,503.91	672,946.99	121.30
GWD 7370	18,815.03	18,564.30	7360	25.13	.812	Master GW# 7370	5,073,496.45	672,945.23	121.54
GWD 7380	18,839.88	18,588.95	7370	24.85	.812	Master GW# 7380	5,073,489.09	672,943.49	121.86
GWD 7390	18,865.05	18,613.77	7380	25.17	.812	Master GW# 7390	5,073,481.63	672,941.74	122.26

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 7400	18,891.54	18,640.20	7390	26.49	.812	Master GW# 7400	5,073,473.77	672,939.91	122.64
GWD 7410	18,914.08	18,662.51	7400	22.54	.812	Master GW# 7410	5,073,467.08	672,938.34	122.85
GWD 7420	18,941.77	18,689.82	7410	27.68	.812	Master GW# 7420	5,073,458.87	672,936.42	122.99
GWD 7430	18,968.06	18,715.92	7420	26.30	.812	Master GW# 7430	5,073,451.07	672,934.56	123.07
GWD 7440	18,994.61	18,742.44	7430	26.54	.812	Master GW# 7440	5,073,443.20	672,932.70	123.25
GWD 7450	19,018.25	18,766.26	7440	23.64	.812	Master GW# 7450	5,073,436.18	672,931.07	123.49
GWD 7460	19,045.93	18,793.74	7450	27.68	.812	Master GW# 7460	5,073,427.97	672,929.16	123.75
GWD 7470	19,070.81	18,818.74	7460	24.88	.812	Master GW# 7470	5,073,420.58	672,927.44	123.94
GWD 7480	19,097.48	18,844.92	7470	26.67	.812	Master GW# 7480	5,073,412.67	672,925.58	124.05
GWD 7490	19,123.19	18,870.31	7480	25.71	.812	Master GW# 7490	5,073,405.04	672,923.78	124.07
GWD 7500	19,150.95	18,897.64	7490	27.76	.812	Master GW# 7500	5,073,396.80	672,921.83	124.04
GWD 7510	19,171.23	18,917.99	7500	20.28	.812	Master GW# 7510	5,073,390.79	672,920.42	124.02
GWD 7520	19,197.98	18,944.71	7510	26.74	.812	Master GW# 7520	5,073,382.85	672,918.56	124.01
GWD 7530	19,223.94	18,969.93	7520	25.96	.812	Master GW# 7530	5,073,375.14	672,916.76	124.02
GWD 7540	19,251.02	18,997.15	7530	27.09	.812	Master GW# 7540	5,073,367.10	672,914.86	124.03
GWD 7550	19,271.08	19,016.80	7540	20.06	.812	Master GW# 7550	5,073,361.15	672,913.46	124.05
GWD 7560	19,298.86	19,043.99	7550	27.78	.812	Master GW# 7560	5,073,352.91	672,911.53	124.07
GWD 7570	19,325.49	19,070.60	7560	26.63	.812	Master GW# 7570	5,073,345.00	672,909.69	124.09
GWD 7580	19,350.59	19,095.21	7570	25.10	.812	Master GW# 7580	5,073,337.55	672,907.96	124.13
GWD 7590	19,377.57	19,121.98	7580	26.98	.812	Master GW# 7590	5,073,329.54	672,906.10	124.19
GWD 7600	19,401.98	19,146.04	7590	24.41	.812	Master GW# 7600	5,073,322.29	672,904.40	124.24
GWD 7610	19,428.36	19,172.04	7600	26.38	.812	Master GW# 7610	5,073,314.47	672,902.54	124.31
GWD 7620	19,451.10	19,194.38	7610	22.74	.812	Master GW# 7620	5,073,307.73	672,900.92	124.36
GWD 7630	19,479.69	19,222.68	7620	28.59	.812	Master GW# 7630	5,073,299.26	672,898.89	124.40
GWD 7640	19,505.75	19,248.71	7630	26.06	.812	Master GW# 7640	5,073,291.52	672,897.08	124.44
GWD 7650	19,534.05	19,276.27	7640	28.30	.812	Master GW# 7650	5,073,283.11	672,895.16	124.54
GWD 7660	19,557.33	19,299.25	7650	23.28	.812	Master GW# 7660	5,073,276.19	672,893.62	124.66
GWD 7670	19,581.23	19,322.89	7660	23.91	.812	Master GW# 7670	5,073,269.07	672,892.05	124.85
GWD 7680	19,608.00	19,349.26	7670	26.77	.812	Master GW# 7680	5,073,261.11	672,890.26	125.03
GWD 7690	19,628.64	19,369.68	7680	20.64	.812	Master GW# 7690	5,073,254.98	672,888.87	125.17
GWD 7700	19,651.53	19,392.10	7690	22.89	.812	Master GW# 7700	5,073,248.18	672,887.30	125.38
GWD 7710	19,674.49	19,415.24	7700	22.96	.812	Master GW# 7710	5,073,241.37	672,885.70	125.62

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 7720	19,700.70	19,441.74	7710	26.21	.812	Master GW# 7720	5,073,233.61	672,883.86	125.94
GWD 7730	19,728.94	19,468.43	7720	28.24	.812	Master GW# 7730	5,073,225.24	672,881.85	126.38
GWD 7740	19,751.43	19,490.87	7730	22.50	.812	Master GW# 7740	5,073,218.59	672,880.24	126.76
GWD 7750	19,779.17	19,518.01	7740	27.74	.812	Master GW# 7750	5,073,210.38	672,878.27	127.17
GWD 7760	19,807.33	19,545.87	7750	28.16	.812	Master GW# 7760	5,073,202.03	672,876.29	127.47
GWD 7770	19,832.84	19,570.99	7760	25.51	.812	Master GW# 7770	5,073,194.46	672,874.53	127.73
GWD 7780	19,859.24	19,597.40	7770	26.40	.812	Master GW# 7780	5,073,186.63	672,872.71	128.07
GWD 7790	19,883.66	19,621.80	7780	24.42	.812	Master GW# 7790	5,073,179.39	672,871.02	128.45
GWD 7800	19,910.13	19,647.93	7790	26.47	.812	Master GW# 7800	5,073,171.55	672,869.16	128.89
GWD 7810	19,936.53	19,674.03	7800	26.41	.812	Master GW# 7810	5,073,163.73	672,867.28	129.35
GWD 7820	19,964.32	19,701.84	7810	27.78	.812	Master GW# 7820	5,073,155.52	672,865.28	129.88
GWD 7830	19,989.12	19,726.45	7820	24.80	.812	Master GW# 7830	5,073,148.20	672,863.46	130.39
GWD 7840	20,016.29	19,753.51	7830	27.17	.812	Master GW# 7840	5,073,140.17	672,861.49	130.90
GWD 7850	20,041.72	19,778.35	7840	25.43	.812	Master GW# 7850	5,073,132.67	672,859.59	131.26
GWD 7860	20,065.26	19,801.91	7850	23.54	.812	Master GW# 7860	5,073,125.71	672,857.85	131.58
GWD 7870	20,092.26	19,828.61	7860	27.01	.812	Master GW# 7870	5,073,117.72	672,855.92	131.99
GWD 7880	20,115.49	19,851.67	7870	23.23	.812	Master GW# 7880	5,073,110.82	672,854.37	132.43
GWD 7890	20,137.06	19,873.21	7880	21.57	.812	Master GW# 7890	5,073,104.41	672,853.01	132.90
GWD 7900	20,163.26	19,899.46	7890	26.19	.812	Master GW# 7900	5,073,096.61	672,851.36	133.48
GWD 7910	20,186.95	19,923.03	7900	23.69	.812	Master GW# 7910	5,073,089.57	672,849.83	133.98
GWD 7920	20,213.80	19,949.19	7910	26.85	.812	Master GW# 7920	5,073,081.61	672,848.03	134.57
GWD 7930	20,240.54	19,976.17	7920	26.74	.812	Master GW# 7930	5,073,073.69	672,846.17	135.09
GWD 7940	20,265.94	20,000.95	7930	25.39	.812	Master GW# 7940	5,073,066.17	672,844.36	135.46
GWD 7950	20,293.48	20,028.33	7940	27.54	.812	Master GW# 7950	5,073,058.02	672,842.38	135.81
GWD 7960	20,320.03	20,054.28	7950	26.55	.812	Master GW# 7960	5,073,050.17	672,840.44	136.11
GWD 7970	20,347.21	20,081.25	7960	27.18	.812	Master GW# 7970	5,073,042.13	672,838.47	136.46
GWD 7980	20,374.38	20,108.21	7970	27.17	.812	Master GW# 7980	5,073,034.09	672,836.53	136.85
GWD 7990	20,402.50	20,136.01	7980	28.12	.812	Master GW# 7990	5,073,025.75	672,834.55	137.11
GWD 8000	20,427.70	20,160.80	7990	25.20	.812	Master GW# 8000	5,073,018.27	672,832.83	137.23
GWD 8010	20,454.95	20,187.77	8000	27.25	.812	Master GW# 8010	5,073,010.16	672,831.00	137.33
GWD 8020	20,481.50	20,214.11	8010	26.55	.812	Master GW# 8020	5,073,002.27	672,829.21	137.35
GWD 8030	20,509.52	20,241.59	8020	28.02	.812	Master GW# 8030	5,072,993.95	672,827.28	137.36

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 8040	20,537.03	20,268.36	8030	27.51	.812	Master GW# 8040	5,072,985.78	672,825.39	137.46
GWD 8050	20,563.88	20,295.16	8040	26.84	.812	Master GW# 8050	5,072,977.81	672,823.54	137.69
GWD 8060	20,589.40	20,320.26	8050	25.52	.812	Master GW# 8060	5,072,970.25	672,821.77	138.04
GWD 8070	20,615.02	20,345.78	8060	25.62	.812	Master GW# 8070	5,072,962.65	672,820.01	138.46
GWD 8080	20,641.15	20,371.64	8070	26.13	.812	Master GW# 8080	5,072,954.89	672,818.24	138.85
GWD 8090	20,668.83	20,399.08	8080	27.69	.812	Master GW# 8090	5,072,946.67	672,816.36	139.10
GWD 8100	20,695.40	20,425.43	8090	26.57	.812	Master GW# 8100	5,072,938.77	672,814.57	139.43
GWD 8110	20,722.84	20,452.61	8100	27.44	.812	Master GW# 8110	5,072,930.63	672,812.73	139.86
GWD 8120	20,750.09	20,479.38	8110	27.24	.812	Master GW# 8120	5,072,922.55	672,810.87	140.37
GWD 8130	20,776.20	20,505.61	8120	26.11	.812	Master GW# 8130	5,072,914.82	672,809.06	140.95
GWD 8140	20,796.80	20,526.15	8130	20.60	.812	Master GW# 8140	5,072,908.73	672,807.60	141.52
GWD 8150	20,820.34	20,549.51	8140	23.54	.812	Master GW# 8150	5,072,901.80	672,805.95	142.35
GWD 8160	20,847.46	20,576.29	8150	27.12	.812	Master GW# 8160	5,072,893.84	672,804.05	143.50
GWD 8170	20,869.08	20,597.62	8160	21.62	.812	Master GW# 8170	5,072,887.51	672,802.52	144.54
GWD 8180	20,896.99	20,625.21	8170	27.91	.812	Master GW# 8180	5,072,879.38	672,800.57	146.10
GWD 8190	20,923.27	20,651.16	8180	26.28	.812	Master GW# 8190	5,072,871.76	672,798.75	147.76
IDR 5	20,938.06	20,665.92	8190	14.79	.812	17.94in Internal Diameter - On bend	5,072,867.48	672,797.73	148.72
BND 16	20,938.68	20,666.54	8190	15.41	.812	24.2D Bend 8.1 Down	5,072,867.29	672,797.69	148.75
GWD 8200	20,949.84	20,677.68	8190	26.57	.812	Master GW# 8200	5,072,864.00	672,796.90	149.06
GWD 8210	20,976.88	20,704.53	8200	27.03	.812	Master GW# 8210	5,072,856.00	672,795.01	149.65
GWD 8220	21,004.15	20,731.73	8210	27.28	.812	Master GW# 8220	5,072,847.91	672,793.10	150.01
GWD 8230	21,027.96	20,755.22	8220	23.81	.812	Master GW# 8230	5,072,840.85	672,791.44	150.25
GWD 8240	21,052.25	20,779.44	8230	24.29	.812	Master GW# 8240	5,072,833.65	672,789.75	150.43
GWD 8250	21,079.06	20,805.60	8240	26.81	.812	Master GW# 8250	5,072,825.70	672,787.86	150.61
GWD 8260	21,101.25	20,827.42	8250	22.19	.812	Master GW# 8260	5,072,819.12	672,786.28	150.78
GWD 8270	21,128.01	20,853.74	8260	26.77	.812	Master GW# 8270	5,072,811.20	672,784.33	150.95
GWD 8280	21,155.11	20,880.81	8270	27.10	.812	Master GW# 8280	5,072,803.18	672,782.36	151.13
BND 17	21,176.43	20,901.71	8280	21.33	.812	28.8D Bend 4.3 Up	5,072,796.87	672,780.80	151.30
GWD 8290	21,183.06	20,908.21	8280	27.96	.812	Master GW# 8290	5,072,794.92	672,780.31	151.50
BND 18	21,190.22	20,915.22	8290	7.16	.812	30.0D Bend 5.1 Up	5,072,792.82	672,779.78	151.72
GWD 8300	21,207.40	20,932.04	8290	24.33	.812	Master GW# 8300	5,072,787.82	672,778.51	152.64
BND 19	21,218.57	20,943.80	8300	11.17	.812	24.4D Bend 10.0 LT 5.2 Up	5,072,784.57	672,777.72	153.26

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

BAKER HUGHES

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
IDR 6	21,218.65	20,943.88	8300	11.25	.812	17.94in Internal Diameter - On bend	5,072,784.54	672,777.72	153.27
GWD 8310	21,233.64	20,959.66	8300	26.25	.812	Master GW# 8310	5,072,780.15	672,777.30	154.42
IDR 7	21,248.27	20,973.34	8310	14.63	.812	17.98in Internal Diameter - On bend	5,072,775.85	672,777.04	155.58
BND 20	21,251.17	20,976.05	8310	17.53	.812	23.7D Bend 19.6 LT 1.3 Up	5,072,775.01	672,777.08	155.82
GWD 8320	21,262.35	20,986.50	8310	28.70	.812	Master GW# 8320	5,072,771.81	672,777.73	156.78
IDR 8	21,274.36	20,998.26	8320	12.01	.812	17.97in Internal Diameter - On bend	5,072,768.52	672,778.92	157.81
BND 21	21,274.86	20,998.75	8320	12.51	.812	22.4D Bend 25.0 LT 2.0 Down	5,072,768.39	672,778.99	157.86
GWD 8330	21,286.48	21,010.13	8320	24.13	.812	Master GW# 8330	5,072,765.60	672,780.92	158.84
IDR 9	21,300.08	21,023.74	8330	13.60	.812	17.95in Internal Diameter - On bend	5,072,762.68	672,783.68	159.79
BND 22	21,300.66	21,024.32	8330	14.18	.812	25.0D Bend 22.8 LT 7.6 Down	5,072,762.57	672,783.82	159.83
GWD 8340	21,313.34	21,037.02	8330	26.87	.812	Master GW# 8340	5,072,760.56	672,787.06	160.41
BND 23	21,323.06	21,046.58	8340	9.72	.812	25.1D Bend 14.2 LT 5.8 Down	5,072,759.36	672,789.74	160.71
GWD 8350	21,338.04	21,061.33	8340	24.70	.812	Master GW# 8350	5,072,758.24	672,794.16	160.84
GWD 8360	21,365.20	21,088.56	8350	27.16	.812	Master GW# 8360	5,072,756.42	672,802.24	160.91
GWD 8370	21,391.61	21,114.99	8360	26.41	.812	Master GW# 8370	5,072,754.68	672,810.11	160.86
GWD 8380	21,415.48	21,138.65	8370	23.87	.812	Master GW# 8380	5,072,753.06	672,817.20	160.76
GWD 8390	21,434.19	21,157.54	8380	18.71	.812	Master GW# 8390	5,072,751.78	672,822.76	160.69
GWD 8400	21,461.85	21,185.23	8390	27.66	.812	Master GW# 8400	5,072,749.85	672,830.97	160.64
GWD 8410	21,486.11	21,208.89	8400	24.26	.812	Master GW# 8410	5,072,748.13	672,838.17	160.63
GWD 8420	21,511.54	21,234.08	8410	25.42	.812	Master GW# 8420	5,072,746.33	672,845.71	160.59
GWD 8430	21,538.27	21,260.85	8420	26.73	.812	Master GW# 8430	5,072,744.44	672,853.64	160.57
GWD 8440	21,561.29	21,283.76	8430	23.02	.812	Master GW# 8440	5,072,742.83	672,860.47	160.56
GWD 8450	21,584.57	21,306.63	8440	23.28	.812	Master GW# 8450	5,072,741.22	672,867.38	160.61
GWD 8460	21,611.86	21,333.81	8450	27.29	.812	Master GW# 8460	5,072,739.32	672,875.48	160.63
GWD 8470	21,637.10	21,358.81	8460	25.24	.812	Master GW# 8470	5,072,737.58	672,882.97	160.57
GWD 8480	21,662.23	21,383.50	8470	25.13	.812	Master GW# 8480	5,072,735.82	672,890.43	160.60
GWD 8490	21,689.92	21,410.83	8480	27.69	.812	Master GW# 8490	5,072,733.87	672,898.64	160.61
GWD 8500	21,716.95	21,437.27	8490	27.04	.812	Master GW# 8500	5,072,731.93	672,906.65	160.57
GWD 8510	21,743.33	21,463.13	8500	26.38	.812	Master GW# 8510	5,072,730.04	672,914.46	160.51
GWD 8520	21,771.51	21,491.11	8510	28.18	.812	Master GW# 8520	5,072,728.03	672,922.81	160.47
GWD 8530	21,797.65	21,516.85	8520	26.14	.812	Master GW# 8530	5,072,726.17	672,930.56	160.32
GWD 8540	21,800.43	21,519.68	8530	2.79	.812	Master GW# 8540	5,072,725.97	672,931.39	160.31

ENBDNR0005243

Pipeline Tally

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection
Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop
Projection: UTM
Datum: WGS 84
Zone: 16
C.M.: -87

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Wall Thickness (in)	Description	Northing (m)	Easting (m)	Height (m)
GWD 8545	21,801.83	21,521.17	8540	1.39	.812	Master GW# 8545	5,072,725.88	672,931.80	160.31
GWD 8555	21,802.90	21,522.18	8545	1.06	.812	Master GW# 8555	5,072,725.80	672,932.12	160.31
GWD 8560	21,804.36	21,523.36	8555	1.46	.812	Master GW# 8560	5,072,725.70	672,932.55	160.30
GWD 8570	21,824.96	21,544.33	8560	20.59	.812	Master GW# 8570	5,072,724.25	672,938.66	160.33
TEE 5	21,826.42	21,545.47	8570	1.46	.812	16 IN OFFTAKE-FORGED	5,072,724.15	672,939.09	160.33
GWD 8580	21,827.78	21,546.53	8570	2.82	.812	Master GW# 8580	5,072,724.06	672,939.50	160.34
GWD 8590	21,830.18	21,549.50	8580	2.40	.812	Master GW# 8590	5,072,723.90	672,940.21	160.34
VLV 2	21,831.74	21,550.38	8590	1.57	.812	Receive Valve	5,072,723.80	672,940.68	160.33
GWD 8620	21,833.55	21,551.40	8590	3.37	.812	Master GW# 8620	5,072,723.67	672,941.21	160.34
IDR 10	21,841.24	21,559.38	8620	7.69	.812	17.98in Internal Diameter - On bend	5,072,723.15	672,943.50	160.41
BND 24	21,841.93	21,560.09	8620	8.38	.812	25.5D Bend 11.4 Up	5,072,723.10	672,943.70	160.44
GWD 8630	21,855.20	21,573.85	8620	21.65	.812	Master GW# 8630	5,072,722.20	672,947.56	161.20
GWD 8640	21,865.19	21,583.88	8630	9.99	.812	Master GW# 8640	5,072,721.50	672,950.46	161.84
BND 25	21,877.64	21,596.42	8640	12.45	.812	27.4D Bend .6 LT 12.4 Down	5,072,720.62	672,954.08	162.55
IDR 11	21,880.67	21,599.46	8640	15.48	.812	17.98in Internal Diameter - On bend	5,072,720.41	672,954.97	162.61
GWD 8650	21,883.47	21,602.29	8640	18.28	.500	Master GW# 8650	5,072,720.22	672,955.81	162.62
GWD 8660	21,884.73	21,603.55	8650	1.26	.500	Master GW# 8660	5,072,720.13	672,956.18	162.61
GWD 8670	21,888.33	21,607.17	8660	3.60	.500	Master GW# 8670	5,072,719.88	672,957.25	162.61
GWD 8680	21,888.91	21,607.76	8670	.58	.500	Master GW# 8680	5,072,719.84	672,957.42	162.61