Pipeline Listing

436881_20A Issue 1
Enbridge Energy Limited Partnership
MFL 20in Inspection

Line 5: 20" Straits of Mackinac - East Leg
Run Date: 28 August 2013
Issue Date: 02 December 2013

Upstream Girth Weld	Joint Length (feet)	Relative Distance (feet)	Absolute Distance (feet)	Long Seam Orientation (Deg)	Weld Type	Feature Type	Comment	Feature Code	Feature Subtype	Feature ID	Cluster ID	Orient. (Deg)	Start Absolute Distance (feet)	Start Orient (Deg)	End Absolute Distance (feet)	End Orient. (Deg)	MSP Relative Distance (feet)	MSP Orient. (Deg)	Nominal Wall Thickness (in)	Length (in)	Width (in)	Peak Depth (in)	Peak Depth (%Nom WT)	MSP Rel to LSW (Deg)	0.85 DL RPR	Effective Length (in)	Effective Depth (in)	Effective Depth (%Nom WT)	Effective Area RPR	Radial Position	Data Degradation	Dent Depth (%OD)	Dent Depth (in)	Quality (%OD)	Min ID (in)	Dent in Close Proximity	Dent Association	Top/Bottom Dent	Relative Position
21	16.83	0.00	0.00	140	E.R. WELD	GIRTH WELD	GIRTH WELD	1					0.00		16.83				0.500																				
21	16.83	0.00	0.00	140	E.R. WELD	PIPE TYPE CHANGE	E.R. WELD START	24		1			0.00		0.00				0.500																				
21	16.83	0.29	0.29	140	E.R. WELD	METAL LOSS	INT ML	79	1	2	1	170	0.29	168	0.37	173	0.33	170	0.500	0.98	0.94	0.020	4	30	1.284	0.94	0.050	10	1.282	Internal									
21	16.83	1.17	1.17	140	E.R. WELD	METAL LOSS	*INT ML	79	1	3	2	171	1.17	170	1.21	172	1.19	171	0.500	0.51	0.39	0.050	10	31	1.285	0.51	0.050	10	1.285	Internal									
21	16.83	1.98	1.98	140	E.R. WELD	SUPPORT	SUPPORT	99		4			1.98		1.98				0.500																				
21	16.83	3.18	3.18	140	E.R. WELD	METAL LOSS	*INT ML	79	1	5	3	177	3.18	172	3.27	182	3.23	177	0.500	1.18	1.81	0.100	20	37	1.275	1.14	0.100	20	1.273	Internal									
21	16.83	6.50	6.50	140	E.R. WELD	METAL LOSS	*INT ML	79	1	6	4	179	6.50	178	6.53	180	6.52	179	0.500	0.39	0.28	0.010	2	39	1.286	0.39	0.050	10	1.285	Internal									
21	16.83	12.05	12.05	140	E.R. WELD	METAL LOSS	*INT ML	79	1	7	5	176	12.05	173	12.12	178	12.09	176	0.500	0.75	0.91	0.045	9	36	1.284	0.71	0.050	10	1.283	Internal									
21	16.83	13.35	13.35	140	E.R. WELD	METAL LOSS	INT ML	79	1	8	6	178	13.35	176	13.40	180	13.37	178	0.500	0.63	0.63	0.005	1	38	1.286	0.63	0.050	10	1.284	Internal									
21	16.83	13.74	13.74	140	E.R. WELD	METAL LOSS	INT ML	79	1	9	7	176	13.74	173	13.79	178	13.77	176	0.500	0.55	0.94	0.005	1	36	1.286	0.51	0.050	10	1.284	Internal									
21	16.83	14.91	14.91	140	E.R. WELD	METAL LOSS	*INT ML	79	1	10	8	178	14.91	177	15.18	180	15.16	178	0.500	3.31	0.51	0.080	16	38	1.240	3.27	0.055	11	1.250	Internal									
31	3.33	16.83	16.83		E.R. WELD	GIRTH WELD	GIRTH WELD	1					16.83		20.16				0.500																				
31	3.33	1.47	18.30		E.R. WELD	OFFTAKE	2 IN OFFTAKE-WELDOLET	41		11		0	18.30	0	18.30	0			0.500																				
31	3.33	1.70	18.53		E.R. WELD	METAL LOSS	*INT ML	79	1	12	9	178	18.53	174	19.14	182	2.16	178	0.500	7.28	1.34	0.130	26		1.123	7.24	0.065	13	1.193	Internal									
31	3.33	2.44	19.27		E.R. WELD	OFFTAKE	2 IN OFFTAKE-WELDOLET	41		13		0	19.27	0	19.27	0			0.500																				
41	0.79	3.33	20.16		E.R. WELD	GIRTH WELD	GIRTH WELD	1					20.16		20.94				0.500																				
41	0.79	0.00	20.16		E.R. WELD	LOCATION COMMENT	STRAITS OF MACKINAC - EAST LEG	102		14			20.16		20.16				0.500																				
51	3.90	0.79	20.94		E.R. WELD	GIRTH WELD	GIRTH WELD	1					20.94		24.85				0.500																				
51	3.90	1.97	22.91		E.R. WELD	VALVE	GATE VALVE MP 1475.68	52		15			22.91		22.91				0.500																				
61	1.64	3.90	24.85		E.R. WELD	GIRTH WELD	GIRTH WELD	1					24.85		26.49				0.500																				
63	2.64	1.64	26.49		E.R. WELD	GIRTH WELD	GIRTH WELD	1					26.49		29.12				0.500																				
63	2.64	1.29	27.78		E.R. WELD	OFFTAKE	20 IN OFFTAKE-FORGED	40		16		270	27.78	270	27.78	270			0.500																				
67	2.88	2.64	29.12		E.R. WELD	GIRTH WELD	GIRTH WELD	1					29.12		32.00				0.500																				
67	2.88	1.91	31.03		E.R. WELD	OFFTAKE	2 IN OFFTAKE-WELDOLET	41		17		0	31.03	0	31.03	0			0.500																				
71	15.61	2.88	32.00	92	E.R. WELD	GIRTH WELD	GIRTH WELD	1					32.00		47.61				0.500																				
71	15.61	1.26	33.26	92	E.R. WELD	OFFTAKE	2 IN OFFTAKE-WELDOLET	41		18		0	33.26	0	33.26	0			0.500																				
71	15.61	2.23	34.23	92	E.R. WELD	OFFTAKE	2 IN OFFTAKE-WELDOLET	41		19		0	34.23	0	34.23	0			0.500																				
71	15.61	7.68	39.68	92	E.R. WELD	BEND	BEND-HOT PULLED OVER	10	2	20			39.68		39.68				0.500																				
81	1.80	15.61	47.61		E.R. WELD	GIRTH WELD	GIRTH WELD	1					47.61		49.40				0.500																				
91	14.98	1.80	49.40	98	E.R. WELD	GIRTH WELD	GIRTH WELD	1					49.40		64.38				0.500																				
91	14.98	7.52	56.92	98	E.R. WELD	BEND	BEND-HOT PULLED UNDER	10	2	21			56.92		56.92				0.500																				
101	14.87	14.98	64.38	10	E.R. WELD	GIRTH WELD	GIRTH WELD	1					64.38		79.26				0.500																				
101	14.87	7.24	71.62	10	E.R. WELD	BEND	BEND-HOT PULLED RIGHT	10	2	22			71.62		71.62				0.500																				
111	19.72	14.87	79.26	40	E.R. WELD	GIRTH WELD	GIRTH WELD	1					79.26		98.97				0.500																				
121	14.53	19.72	98.97	42	E.R. WELD	GIRTH WELD	GIRTH WELD	1					98.97		113.50				0.500																				
131	14.85	14.53	113.50	14	E.R. WELD	GIRTH WELD	GIRTH WELD	1					113.50		128.36				0.500																				
131	14.85	7.60	121.11	14	E.R. WELD	BEND	BEND-HOT PULLED LEFT	10	2	23			121.11		121.11				0.500																				
141	3.96	14.85	128.36		E.R. WELD	GIRTH WELD	GIRTH WELD NWT 0.500/0.812IN	1					128.36		132.32				0.812																				
151	24.86	3.96	132.32		SEAMLESS	GIRTH WELD	GIRTH WELD	1					132.32		157.18				0.812																				
151	24.86	0.00	132.32		SEAMLESS	PIPE TYPE CHANGE	SEAMLESS START	23		24			132.32		132.32				0.812																				
151	24.86	17.74	150.06		SEAMLESS	OFFTAKE	2 IN OFFTAKE-WELDOLET	41		25		0	150.06	0	150.06	0			0.812																				
151	24.86	22.20	154.51		SEAMLESS	OFFTAKE	4 IN OFFTAKE-STOPPLE	44		26		0	154.51	0	154.51	0			0.812																				
160	20.05	24.86	157.18		SEAMLESS	GIRTH WELD	GIRTH WELD	1					157.18		177.22				0.812																				
170	26.21	20.05	177.22		SEAMLESS	GIRTH WELD	GIRTH WELD	1					177.22		203.44				0.812																				
180	17.35	26.21	203.44		SEAMLESS	GIRTH WELD	GIRTH WELD	1					203.44		220.78				0.812																				
190	26.04	17.35	220.78		SEAMLESS	GIRTH WELD	GIRTH WELD	1					220.78		246.82				0.812																				
200	27.90	26.04	246.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					246.82		274.72				0.812																				
210	26.85	27.90	274.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					274.72		301.57				0.812																				
220	26.88	26.85	301.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					301.57		328.45				0.812																				
230	21.60	26.88	328.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					328.45		350.04				0.812																				
230	21.60	20.23	348.67		SEAMLESS	MILL FAULT	EXT MFG	103	3	27	10	264	348.67	256	349.10	272	20.24	257	0.812	5.16	2.80	0.194	24							External									
240	6.27	21.60	350.04		SEAMLESS	GIRTH WELD	GIRTH WELD	1					350.04		356.31				0.812																				
240	6.27	1.02	351.06		SEAMLESS	MILL FAULT	INT MFG	103	3	28	11	173	351.06	169	351.20	177	1.13	173	0.812	1.73	1.34	0.073	9							Internal									
250	26.63	6.27	356.31		SEAMLESS	GIRTH WELD	GIRTH WELD	1					356.31		382.94				0.812																				
260	26.16	26.63	382.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					382.94		409.10				0.812																				
270	26.02	26.16	409.10		SEAMLESS	GIRTH WELD	GIRTH WELD	1					409.10		435.12				0.812																				
270	26.02	3.19	412.28		SEAMLESS	MILL FAULT	EXT MFG	103	3	29	12	12	412.28	12	412.32	13	3.20	12	0.812	0.43	0.20	0.211	26							External									
280	27.58	26.02	435.12		SEAMLESS	GIRTH WELD	GIRTH WELD	1					435.12		462.70				0.812																				
290	28.03	27.58	462.70		SEAMLESS	GIRTH WELD	GIRTH WELD	1					462.70		490.73				0.812																				
300	20.84	28.03	490.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					490.73		511.57				0.812																				
310	28.25	20.84	511.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					511.57		539.82				0.812																				
320	26.78	28.25	539.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					539.82		566.60				0.812																				
330	21.87	26.78	566.60		SEAMLESS	GIRTH WELD	GIRTH WELD	1					566.60		588.47				0.812																				
340	27.69	21.87	588.47		SEAMLESS	GIRTH WELD	GIRTH WELD	1					588.47		616.17				0.812																				
340	27.69	14.79	603.26		SEAMLESS	BEND	20 DEG BEND-COLD RIGHT	11	2	30			603.26		603.26				0.812																				
350	19.16	27.69	616.17		SEAMLESS	GIRTH WELD	GIRTH WELD	1					616.17		635.33				0.812																				
360	8.32	19.16	635.33		SEAMLESS	GIRTH WELD	GIRTH WELD	1					635.33		643.65				0.812																				
370	15.51	8.32	643.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					643.65		659.15				0.812																				
380	25.97	15.51	659.15		SEAMLESS	GIRTH WELD	GIRTH WELD	1					659.15		685.12				0.812																				
390	25.86	25.97	685.12		SEAMLESS	GIRTH WELD	GIRTH WELD	1					685.12		710.98				0.812																				
400	27.30	25.86	710.98		SEAMLESS	GIRTH WELD	GIRTH WELD	1					710.98		738.28				0.812																				
410	25.44	27.30	738.28		SEAMLESS	GIRTH WELD	GIRTH WELD	1					738.28		763.71				0.812																				
420	27.31	25.44	763.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					763.71		791.02				0.812																				
430	27.55	27.31	791.02		SEAMLESS	GIRTH WELD	GIRTH WELD	1					791.02		818.57				0.812																				
440	27.85	27.55	818.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					818.57		846.42				0.812																				
440	27.85	1.32	819.89		SEAMLESS	MILL FAULT	INT MFG	103	3	31	13	138	819.89	132	819.94	144	1.35	138	0.812	0.55	2.17	0.016	2							Internal									
450	26.25	27.85	846.42		SEAMLESS	GIRTH WELD	GIRTH WELD	1					846.42		872.67				0.812																				
460	25.90	26.25	872.67		SEAMLESS	GIRTH WELD	GIRTH WELD	1					872.67		898.57				0.812																				
470	25.57	25.90	898.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					898.57		924.14				0.812																				
480	25.90	25.57	924.14		SEAMLESS	GIRTH WELD	GIRTH WELD	1					924.14		950.03				0.812																				
490	26.20	25.90	950.03		SEAMLESS	GIRTH WELD	GIRTH WELD	1					950.03		976.24				0.812																				
500	22.99	26.20	976.24		SEAMLESS	GIRTH WELD	GIRTH WELD	1					976.24		999.22				0.812																				
510	25.66	22.99	999.22		SEAMLESS	GIRTH WELD	GIRTH WELD	1					999.22		1024.88				0.812																				
520	23.48	25.66	1024.88		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1024.88		1048.36				0.812																				
530	28.12	23.48	1048.36		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1048.36		1076.48				0.812																				
540	26.85	28.12	1076.48		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1076.48		1103.32				0.812																				
550	20.93	26.85	1103.32		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1103.32		1124.26				0.812																				
560	23.83	20.93	1124.26		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1124.26		1148.09				0.812																				
570	25.78	23.83	1148.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1148.09		1173.87				0.812																				
580	27.70	25.78	1173.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1173.87		1201.58				0.812																				
590	23.57	27.70	1201.58		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1201.58		1225.14				0.812																				
590	23.57	0.18	1201.76		SEAMLESS	MILL FAULT	INT MFG	103	3	32	14	43	1201.76	36	1202.08	50	0.22	48	0.812	3.82	2.36	0.081	10							Internal									
590	23.57	1.23	1202.80		SEAMLESS	MILL FAULT	INT MFG	103	3	33	15	358	1202.80	351	1203.12	4	1.41	356	0.812	3.78	2.20	0.146	18							Internal									
600	26.25	23.57	1225.14		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1225.14		1251.39				0.812																				
610	27.49	26.25	1251.39		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1251.39		1278.88				0.812																				
620	26.22	27.49	1278.88		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1278.88		1305.11				0.812																				
630	27.44	26.22	1305.11		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1305.11		1332.55				0.812																				
640	25.68	27.44	1332.55		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1332.55		1358.23				0.812																				
640	25.68	0.30	1332.85		SEAMLESS	MILL FAULT	INT MFG	103	3	34	16	218	1332.85	217	1332.90	219	0.33	218	0.812	0.59	0.43	0.146	18							Internal									
650	28.07	25.68	1358.23		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1358.23		1386.30				0.812																				
660	27.07	28.07	1386.30		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1386.30		1413.36				0.812																				
670	20.68	27.07	1413.36		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1413.36		1434.05				0.812																				
680	26.91	20.68	1434.05		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1434.05		1460.96				0.812																				
690	22.29	26.91	1460.96		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1460.96		1483.25				0.812																				
700	27.69	22.29	1483.25		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1483.25		1510.94				0.812																				
710	23.98	27.69	1510.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1510.94		1534.92				0.812																				
720	27.12	23.98	1534.92		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1534.92		1562.04				0.812																				
730	27.88	27.12	1562.04		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1562.04		1589.92				0.812																				
740	26.35	27.88	1589.92		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1589.92		1616.26				0.812																				
750	26.14	26.35	1616.26		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1616.26		1642.40				0.812																				
760	27.02	26.14	1642.40		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1642.40		1669.42				0.812																				
770	25.06	27.02	1669.42		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1669.42		1694.48				0.812																				
780	20.66	25.06	1694.48		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1694.48		1715.14				0.812																				
780	20.66	6.27	1700.75		SEAMLESS	MILL FAULT	*EXT MFG	103	3	35	17	237	1700.75	206	1701.83	268	6.42	259	0.812	12.99	10.79	0.235	29							External									
780	20.66	7.82	1702.30		SEAMLESS	MILL FAULT	*EXT MFG	103	3	36	18	201	1702.30	200	1702.34	201	7.84	201	0.812	0.55	0.20	0.227	28							External									
790	23.58	20.66	1715.14		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1715.14		1738.71				0.812																				
800	27.06	23.58	1738.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1738.71		1765.77				0.812																				
810	25.65	27.06	1765.77		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1765.77		1791.41				0.812																				
820	27.84	25.65	1791.41		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1791.41		1819.26				0.812																				
830	25.22	27.84	1819.26		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1819.26		1844.48				0.812																				
840	26.29	25.22	1844.48		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1844.48		1870.77				0.812																				
840	26.29	0.19	1844.66		SEAMLESS	MILL FAULT	INT MFG	103	3	37	19	175	1844.66	170	1844.73	179	0.22	175	0.812	0.79	1.54	0.113	14							Internal									
850	25.68	26.29	1870.77		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1870.77		1896.45				0.812																				
860	24.71	25.68	1896.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1896.45		1921.15				0.812																				
860	24.71	23.91	1920.36		SEAMLESS	MILL FAULT	INT MFG	103	3	38	20	103	1920.36	100	1920.62	106	23.96	104	0.812	3.07	1.06	0.106	13							Internal									
870	26.41	24.71	1921.15		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1921.15		1947.56				0.812																				
880	24.01	26.41	1947.56		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1947.56		1971.57				0.812																				
890	26.50	24.01	1971.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1971.57		1998.06				0.812																				
900	23.58	26.50	1998.06		SEAMLESS	GIRTH WELD	GIRTH WELD	1					1998.06		2021.64				0.812																				
900	23.58	0.17	1998.23		SEAMLESS	MILL FAULT	INT MFG	103	3	39	21	352	1998.23	349	1998.43	356	0.21	352	0.812	2.36	1.18	0.106	13							Internal									
910	28.23	23.58	2021.64		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2021.64		2049.87				0.812																				
920	20.63	28.23	2049.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2049.87		2070.49				0.812																				
920	20.63	20.35	2070.22		SEAMLESS	MILL FAULT	INT MFG	103	3	40	22	18	2070.22	16	2070.29	20	20.39	18	0.812	0.87	0.75	0.048	6							Internal									
930	26.43	20.63	2070.49		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2070.49		2096.93				0.812																				
940	26.03	26.43	2096.93		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2096.93		2122.95				0.812																				
950	27.53	26.03	2122.95		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2122.95		2150.48				0.812																				
960	26.67	27.53	2150.48		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2150.48		2177.16				0.812																				
960	26.67	20.10	2170.58		SEAMLESS	MILL FAULT	EXT MFG	103	3	41	23	192	2170.58	192	2170.60	193	20.11	192	0.812	0.31	0.20	0.187	23							External									
960	26.67	20.61	2171.10		SEAMLESS	MILL FAULT	*EXT MFG	103	3	42	24	189	2171.10	188	2171.65	191	21.15	190	0.812	6.65	0.55	0.243	30							External									
970	26.72	26.67	2177.16		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2177.16		2203.87				0.812																				
980	22.90	26.72	2203.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2203.87		2226.77				0.812																				

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PII Pipeline Solutions

436881_20A Issue 1
Enbridge Energy Limited Partnership
MFL 20in Inspection

Line 5: 20" Straits of Mackinac - East Leg
Run Date: 28 August 2013
Issue Date: 02 December 2013

Upstream Girth Weld	Joint Length (feet)	Relative Distance (feet)	Absolute Distance (feet)	Long Seam Orientation (Deg)	Weld Type	Feature Type	Comment	Feature Code	Feature Subtype	Feature ID	Cluster ID	Orient. (Deg)	Start Absolute Distance (feet)	Start Orient (Deg)	End Absolute Distance (feet)	End Orient. (Deg)	MSP Relative Distance (feet)	MSP Orient. (Deg)	Nominal Wall Thickness (in)	Length (in)	Width (in)	Peak Depth (in)	Peak Depth (%Nom WT)	MSP Rel to LSW (Deg)	0.85 DL RPR	Effective Length (in)	Effective Depth (in)	Effective Depth (%Nom WT)	Effective Area RPR	Radial Position	Data Degradation	Dent Depth (%OD)	Dent Depth (in)	Ovality (%OD)	Min ID (in)	Dent in Close Proximity	Dent Association	Top/Bottom Dent	Relative Position
990	27.48	22.90	2226.77		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2226.77		2254.20				0.812																				
1000	27.45	27.48	2254.20		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2254.20		2281.65				0.812																				
1010	25.89	27.45	2281.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2281.65		2307.54				0.812																				
1020	20.21	25.89	2307.54		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2307.54		2327.74				0.812																				
1030	24.52	20.21	2327.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2327.74		2352.26				0.812																				
1040	26.81	24.52	2352.26		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2352.26		2379.08				0.812																				
1050	27.50	26.81	2379.08		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2379.08		2406.59				0.812																				
1060	27.56	27.50	2406.59		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2406.59		2434.14				0.812																				
1070	26.52	27.56	2434.14		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2434.14		2460.66				0.812																				
1080	27.65	26.52	2460.66		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2460.66		2488.31				0.812																				
1090	22.50	27.65	2488.31		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2488.31		2510.80				0.812																				
1100	22.67	22.50	2510.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2510.80		2533.47				0.812																				
1110	27.54	22.67	2533.47		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2533.47		2561.01				0.812																				
1110	27.54	17.08	2550.55		SEAMLESS	MILL FAULT	*EXT MFG	103	3	43	25	202	2550.55	201	2550.63	202	17.12	202	0.812	0.87	0.20	0.211	26							External									
1120	23.01	27.54	2561.01		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2561.01		2584.02				0.812																				
1130	26.87	23.01	2584.02		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2584.02		2610.89				0.812																				
1140	27.47	26.87	2610.89		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2610.89		2638.36				0.812																				
1150	27.24	27.47	2638.36		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2638.36		2665.61				0.812																				
1160	20.02	27.24	2665.61		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2665.61		2685.63				0.812																				
1170	26.01	20.02	2685.63		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2685.63		2711.63				0.812																				
1180	26.37	26.01	2711.63		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2711.63		2738.00				0.812																				
1190	25.71	26.37	2738.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2738.00		2763.71				0.812																				
1200	27.41	25.71	2763.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2763.71		2791.12				0.812																				
1210	25.91	27.41	2791.12		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2791.12		2817.03				0.812																				
1210	25.91	23.14	2814.27		SEAMLESS	MILL FAULT	INT MFG	103	3	44	26	180	2814.27	178	2814.30	182	23.16	180	0.812	0.43	0.63	0.097	12							Internal									
1210	25.91	23.91	2815.03		SEAMLESS	MILL FAULT	INT MFG	103	3	45	27	118	2815.03	101	2815.46	136	23.96	134	0.812	5.12	6.10	0.146	18							Internal									
1210	25.91	25.16	2816.28		SEAMLESS	MILL FAULT	INT MFG	103	3	46	28	109	2816.28	96	2816.66	121	25.50	99	0.812	4.53	4.37	0.081	10							Internal									
1220	22.79	25.91	2817.03		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2817.03		2839.82				0.812																				
1220	22.79	22.20	2839.22		SEAMLESS	MILL FAULT	INT MFG	103	3	47	29	206	2839.22	203	2839.32	209	22.25	206	0.812	1.14	0.98	0.146	18							Internal									
1230	26.12	22.79	2839.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2839.82		2865.94				0.812																				
1240	26.75	26.12	2865.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2865.94		2892.68				0.812																				
1250	26.81	26.75	2892.68		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2892.68		2919.50				0.812																				
1260	27.07	26.81	2919.50		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2919.50		2946.57				0.812																				
1270	27.03	27.07	2946.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2946.57		2973.60				0.812																				
1280	28.05	27.03	2973.60		SEAMLESS	GIRTH WELD	GIRTH WELD	1					2973.60		3001.65				0.812																				
1280	28.05	6.43	2980.03		SEAMLESS	MILL FAULT	INT MFG	103	3	48	30	335	2980.03	331	2980.49	339	6.45	337	0.812	5.51	1.34	0.146	18							Internal									
1290	21.76	28.05	3001.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3001.65		3023.42				0.812																				
1300	27.08	21.76	3023.42		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3023.42		3050.49				0.812																				
1310	26.25	27.08	3050.49		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3050.49		3076.74				0.812																				
1320	26.97	26.25	3076.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3076.74		3103.71				0.812																				
1330	26.84	26.97	3103.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3103.71		3130.55				0.812																				
1340	22.01	26.84	3130.55		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3130.55		3152.56				0.812																				
1340	22.01	0.58	3131.13		SEAMLESS	MILL FAULT	INT MFG	103	3	49	31	262	3131.13	258	3131.35	266	0.78	264	0.812	2.68	1.42	0.065	8							Internal									
1350	27.19	22.01	3152.56		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3152.56		3179.75				0.812																				
1360	22.66	27.19	3179.75		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3179.75		3202.41				0.812																				
1370	25.55	22.66	3202.41		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3202.41		3227.95				0.812																				
1380	23.05	25.55	3227.95		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3227.95		3251.01				0.812																				
1380	23.05	5.97	3233.92		SEAMLESS	MILL FAULT	EXT MFG	103	3	50	32	105	3233.92	97	3234.63	112	6.02	100	0.812	8.46	2.64	0.113	14							External									
1390	27.65	23.05	3251.01		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3251.01		3278.65				0.812																				
1400	25.70	27.65	3278.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3278.65		3304.35				0.812																				
1410	24.74	25.70	3304.35		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3304.35		3329.09				0.812																				
1420	25.07	24.74	3329.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3329.09		3354.16				0.812																				
1430	19.52	25.07	3354.16		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3354.16		3373.68				0.812																				
1440	24.19	19.52	3373.68		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3373.68		3397.87				0.812																				
1450	27.47	24.19	3397.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3397.87		3425.34				0.812																				
1460	27.04	27.47	3425.34		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3425.34		3452.39				0.812																				
1470	26.87	27.04	3452.39		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3452.39		3479.26				0.812																				
1480	27.35	26.87	3479.26		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3479.26		3506.60				0.812																				
1490	17.43	27.35	3506.60		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3506.60		3524.04				0.812																				
1500	26.77	17.43	3524.04		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3524.04		3550.81				0.812																				
1510	24.73	26.77	3550.81		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3550.81		3575.54				0.812																				
1520	24.51	24.73	3575.54		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3575.54		3600.04				0.812																				
1520	24.51	12.02	3587.56		SEAMLESS	MILL FAULT	INT MFG	103	3	51	33	223	3587.56	221	3587.64	225	12.06	223	0.812	0.94	0.67	0.089	11							Internal									
1520	24.51	12.16	3587.70		SEAMLESS	MILL FAULT	INT MFG	103	3	52	34	137	3587.70	133	3587.76	141	12.20	137	0.812	0.79	1.38	0.089	11							Internal									
1520	24.51	12.72	3588.26		SEAMLESS	MILL FAULT	INT MFG	103	3	53	35	49	3588.26	47	3588.32	52	12.75	49	0.812	0.71	0.87	0.057	7							Internal									
1520	24.51	18.45	3593.99		SEAMLESS	MILL FAULT	INT MFG	103	3	54	36	108	3593.99	105	3594.07	112	18.49	108	0.812	0.98	1.26	0.073	9							Internal									
1530	22.24	24.51	3600.04		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3600.04		3622.29				0.812																				
1540	24.50	22.24	3622.29		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3622.29		3646.79				0.812																				
1550	23.96	24.50	3646.79		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3646.79		3670.75				0.812																				
1560	27.27	23.96	3670.75		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3670.75		3698.02				0.812																				
1570	22.09	27.27	3698.02		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3698.02		3720.11				0.812																				
1580	24.04	22.09	3720.11		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3720.11		3744.15				0.812																				
1590	26.45	24.04	3744.15		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3744.15		3770.60				0.812																				
1600	26.27	26.45	3770.60		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3770.60		3796.87				0.812																				
1600	26.27	3.94	3774.55		SEAMLESS	MILL FAULT	*EXT MFG	103	3	55	37	76	3774.55	76	3774.58	77	3.96	76	0.812	0.39	0.20	0.259	32							External									
1610	22.01	26.27	3796.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3796.87		3818.88				0.812																				
1620	26.29	22.01	3818.88		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3818.88		3845.16				0.812																				
1630	26.71	26.29	3845.16		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3845.16		3871.87				0.812																				
1640	19.27	26.71	3871.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3871.87		3891.14				0.812																				
1650	26.32	19.27	3891.14		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3891.14		3917.46				0.812																				
1660	26.48	26.32	3917.46		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3917.46		3943.94				0.812																				
1670	25.37	26.48	3943.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3943.94		3969.31				0.812																				
1680	26.22	25.37	3969.31		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3969.31		3995.54				0.812																				
1690	26.51	26.22	3995.54		SEAMLESS	GIRTH WELD	GIRTH WELD	1					3995.54		4022.05				0.812																				
1700	27.29	26.51	4022.05		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4022.05		4049.33				0.812																				
1710	24.43	27.29	4049.33		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4049.33		4073.76				0.812																				
1720	17.87	24.43	4073.76		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4073.76		4091.63				0.812																				
1730	17.57	17.87	4091.63		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4091.63		4109.20				0.812																				
1730	17.57	17.41	4109.04		SEAMLESS	MILL FAULT	*EXT MFG	103	3	56	38	175	4109.04	170	4109.09	180	17.44	179	0.812	0.59	1.77	0.235	29							External									
1740	27.45	17.57	4109.20		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4109.20		4136.65				0.812																				
1750	25.86	27.45	4136.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4136.65		4162.51				0.812																				
1760	22.62	25.86	4162.51		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4162.51		4185.13				0.812																				
1770	27.59	22.62	4185.13		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4185.13		4212.72				0.812																				
1780	22.63	27.59	4212.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4212.72		4235.34				0.812																				
1790	26.67	22.63	4235.34		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4235.34		4262.02				0.812																				
1800	23.75	26.67	4262.02		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4262.02		4285.77				0.812																				
1810	23.54	23.75	4285.77		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4285.77		4309.31				0.812																				
1820	27.48	23.54	4309.31		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4309.31		4336.79				0.812																				
1830	25.49	27.48	4336.79		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4336.79		4362.28				0.812																				
1840	27.19	25.49	4362.28		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4362.28		4389.47				0.812																				
1840	27.19	1.26	4363.54		SEAMLESS	MILL FAULT	EXT MFG	103	3	57	39	354	4363.54	349	4363.59	358	1.30	358	0.812	0.59	1.61	0.146	18							External									
1850	26.18	27.19	4389.47		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4389.47		4415.65				0.812																				
1860	27.00	26.18	4415.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4415.65		4442.65				0.812																				
1870	26.53	27.00	4442.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4442.65		4469.18				0.812																				
1880	22.89	26.53	4469.18		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4469.18		4492.07				0.812																				
1890	23.17	22.89	4492.07		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4492.07		4515.25				0.812																				
1900	25.79	23.17	4515.25		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4515.25		4541.03				0.812																				
1910	27.09	25.79	4541.03		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4541.03		4568.12				0.812																				
1920	26.35	27.09	4568.12		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4568.12		4594.47				0.812																				
1930	27.19	26.35	4594.47		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4594.47		4621.65				0.812																				
1940	27.03	27.19	4621.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4621.65		4648.69				0.812																				
1950	25.94	27.03	4648.69		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4648.69		4674.63				0.812																				
1960	27.00	25.94	4674.63		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4674.63		4701.63				0.812																				
1970	26.98	27.00	4701.63		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4701.63		4728.61				0.812																				
1980	27.35	26.98	4728.61		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4728.61		4755.96				0.812																				
1990	27.03	27.35	4755.96		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4755.96		4783.00				0.812																				
2000	24.42	27.03	4783.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4783.00		4807.42				0.812																				
2010	22.75	24.42	4807.42		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4807.42		4830.16				0.812																				
2020	26.16	22.75	4830.16		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4830.16		4856.32				0.812																				
2030	26.42	26.16	4856.32		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4856.32		4882.74				0.812																				
2040	27.65	26.42	4882.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4882.74		4910.39				0.812																				
2050	21.41	27.65	4910.39		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4910.39		4931.80				0.812																				
2060	27.02	21.41	4931.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4931.80		4958.83				0.812																				
2070	27.76	27.02	4958.83		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4958.83		4986.58				0.812																				
2080	27.36	27.76	4986.58		SEAMLESS	GIRTH WELD	GIRTH WELD	1					4986.58		5013.94				0.812																				
2090	27.55	27.36	5013.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5013.94		5041.49				0.812																				
2100	25.63	27.55	5041.49		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5041.49		5067.13				0.812																				
2110	22.93	25.63	5067.13		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5067.13		5090.06				0.812																				
2120	20.75	22.93	5090.06		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5090.06		5110.80				0.812																				
2130	24.99	20.75	5110.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5110.80		5135.79				0.812																				
2140	27.91	24.99	5135.79		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5135.79		5163.70				0.812																				
2140	27.91	0.14	5135.93		SEAMLESS	MILL FAULT	INT MFG	103	3	58	40	106	5135.93	102	5136.00	111	0.18	106	0.812	0.87	1.50	0.089	11							Internal									
2140	27.91	0.26	5136.06		SEAMLESS	MILL FAULT	INT MFG	103	3	59	41	40	5136.06	38	5136.10	43	0.29	40	0.812	0.56	0.91	0.130	16							Internal									
2140	27.91	1.16	5136.95		SEAMLESS	MILL FAULT	*EXT MFG	103	3	60	42	118	5136.95	118	5136.98	119	1.17	118	0.812	0.31	0.20	0.211	26							External									
2140	27.91	1.71	5137.50		SEAMLESS	MILL FAULT	*INT MFG	103	3	61	43	48	5137.50	47	5137.54	50	1.73	48	0.812	0.43	0.55	0.252	31							Internal									
2150	17.83	27.91	5163.70		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5163.70		5181.53				0.812																				
2150	17.83	14.73	5178.44		SEAMLESS	MILL FAULT	EXT MFG	103	3	62	44	93	5178.44	74	5179.08	112	15.18	95	0.812	7.80	6.57	0.211	26							External									
2160	28.22	17.83	5181.53		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5181.53		5209.74				0.812																				
2170	25.72	28.22	5209.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5209.74		5235.47				0.812																				
2180	23.68	25.72	5235.47		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5235.47		5259.14				0.812																				
2190	26.04	23.68	5259.14		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5259.14		5285.18				0.812																				

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Enbridge Energy Limited Partnership
MFL 20in Inspection

Line 5: 20" Straits of Mackinac - East Leg
Run Date: 28 August 2013
Issue Date: 02 December 2013

Pipeline Listing

Upstream Girth Weld	Joint Length (feet)	Relative Distance (feet)	Absolute Distance (feet)	Long Seam Orientation (Deg)	Weld Type	Feature Type	Comment	Feature Code	Feature Subtype	Feature ID	Cluster ID	Orient. (Deg)	Start Absolute Distance (feet)	Start Orient (Deg)	End Absolute Distance (feet)	End Orient. (Deg)	MSP Relative Distance (feet)	MSP Orient. (Deg)	Nominal Wall Thickness (in)	Length (in)	Width (in)	Peak Depth (in)	Peak Depth (%NomWT)	MSP Rel to LSW (Deg)	0.85 DL RPR	Effective Length (in)	Effective Depth (in)	Effective Depth (%NomWT)	Effective Area RPR	Radial Position	Data Degradation	Dent Depth (%OD)	Dent Depth (in)	Ovality (%OD)	Min ID (in)	Dent in Close Proximity	Dent Association	Top/Bottom Dent	Relative Position
2200	20.16	26.04	5285.18		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5285.18		5305.34				0.812																				
2210	27.54	20.16	5305.34		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5305.34		5332.87				0.812																				
2220	27.43	27.54	5332.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5332.87		5360.30				0.812																				
2230	22.55	27.43	5360.30		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5360.30		5382.85				0.812																				
2240	27.67	22.55	5382.85		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5382.85		5410.52				0.812																				
2250	24.54	27.67	5410.52		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5410.52		5435.06				0.812																				
2250	24.54	1.85	5412.38		SEAMLESS	MILL FAULT	INT MFG	103	3	63	45	248	5412.38	229	5412.66	267	2.02	261	0.812	3.46	6.69	0.154	19							Internal									
2260	25.68	24.54	5435.06		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5435.06		5460.74				0.812																				
2270	24.99	25.68	5460.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5460.74		5485.73				0.812																				
2280	27.62	24.99	5485.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5485.73		5513.34				0.812																				
2280	27.62	24.72	5510.44		SEAMLESS	MILL FAULT	*EXT MFG	103	3	64	46	306	5510.44	282	5510.83	330	24.74	302	0.812	4.69	8.35	0.243	30							External									
2290	24.27	27.62	5513.34		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5513.34		5537.61				0.812																				
2290	24.27	23.28	5536.62		SEAMLESS	MILL FAULT	EXT MFG	103	3	65	47	222	5536.62	221	5536.65	223	23.30	222	0.812	0.35	0.28	0.203	25							External									
2300	22.57	24.27	5537.61		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5537.61		5560.18				0.812																				
2300	22.57	20.91	5558.52		SEAMLESS	MILL FAULT	INT MFG	103	3	66	48	174	5558.52	161	5559.36	188	21.61	173	0.812	10.08	4.76	0.122	15							Internal									
2300	22.57	21.86	5559.47		SEAMLESS	MILL FAULT	INT MFG	103	3	67	49	113	5559.47	110	5559.52	116	21.88	113	0.812	0.59	1.06	0.057	7							Internal									
2310	24.30	22.57	5560.18		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5560.18		5584.48				0.812																				
2320	24.89	24.30	5584.48		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5584.48		5609.37				0.812																				
2330	24.90	24.89	5609.37		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5609.37		5634.28				0.812																				
2340	24.93	24.90	5634.28		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5634.28		5659.21				0.812																				
2350	25.02	24.93	5659.21		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5659.21		5684.23				0.812																				
2360	25.85	25.02	5684.23		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5684.23		5710.08				0.812																				
2370	27.64	25.85	5710.08		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5710.08		5737.73				0.812																				
2380	22.67	27.64	5737.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5737.73		5760.40				0.812																				
2390	24.38	22.67	5760.40		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5760.40		5784.78				0.812																				
2400	26.24	24.38	5784.78		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5784.78		5811.01				0.812																				
2410	27.47	26.24	5811.01		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5811.01		5838.48				0.812																				
2420	26.73	27.47	5838.48		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5838.48		5865.21				0.812																				
2430	26.81	26.73	5865.21		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5865.21		5892.03				0.812																				
2440	24.40	26.81	5892.03		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5892.03		5916.43				0.812																				
2450	27.30	24.40	5916.43		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5916.43		5943.72				0.812																				
2460	27.57	27.30	5943.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5943.72		5971.29				0.812																				
2470	26.44	27.57	5971.29		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5971.29		5997.74				0.812																				
2470	26.44	9.67	5980.97		SEAMLESS	MILL FAULT	*EXT MFG	103	3	68	50	255	5980.97	255	5981.04	256	9.71	255	0.812	0.94	0.20	0.252	31							External									
2480	27.04	26.44	5997.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					5997.74		6024.77				0.812																				
2490	24.34	27.04	6024.77		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6024.77		6049.11				0.812																				
2500	25.69	24.34	6049.11		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6049.11		6074.80				0.812																				
2510	26.68	25.69	6074.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6074.80		6101.49				0.812																				
2520	24.38	26.68	6101.49		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6101.49		6125.86				0.812																				
2530	26.00	24.38	6125.86		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6125.86		6151.86				0.812																				
2540	24.00	26.00	6151.86		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6151.86		6175.86				0.812																				
2550	26.99	24.00	6175.86		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6175.86		6202.85				0.812																				
2550	26.99	26.75	6202.61		SEAMLESS	MILL FAULT	*EXT MFG	103	3	69	51	47	6202.61	46	6202.66	48	26.77	47	0.812	0.59	0.59	0.235	29							External									
2560	24.08	26.99	6202.85		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6202.85		6226.94				0.812																				
2560	24.08	0.32	6203.18		SEAMLESS	MILL FAULT	EXT MFG	103	3	70	52	55	6203.18	40	6203.43	70	0.33	41	0.812	3.07	5.20	0.162	20							External									
2560	24.08	0.54	6203.39		SEAMLESS	MILL FAULT	EXT MFG	103	3	71	53	109	6203.39	108	6203.41	109	0.55	109	0.812	0.20	0.20	0.162	20							External									
2570	26.57	24.08	6226.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6226.94		6253.50				0.812																				
2580	26.99	26.57	6253.50		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6253.50		6280.49				0.812																				
2590	25.16	26.99	6280.49		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6280.49		6305.65				0.812																				
2600	27.58	25.16	6305.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6305.65		6333.24				0.812																				
2610	27.26	27.58	6333.24		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6333.24		6360.50				0.812																				
2620	25.07	27.26	6360.50		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6360.50		6385.56				0.812																				
2630	23.16	25.07	6385.56		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6385.56		6408.73				0.812																				
2640	26.02	23.16	6408.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6408.73		6434.74				0.812																				
2650	26.13	26.02	6434.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6434.74		6460.87				0.812																				
2660	27.34	26.13	6460.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6460.87		6488.21				0.812																				
2670	24.81	27.34	6488.21		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6488.21		6513.03				0.812																				
2680	25.12	24.81	6513.03		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6513.03		6538.15				0.812																				
2690	27.44	25.12	6538.15		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6538.15		6565.58				0.812																				
2700	26.94	27.44	6565.58		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6565.58		6592.52				0.812																				
2710	27.90	26.94	6592.52		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6592.52		6620.42				0.812																				
2720	25.36	27.90	6620.42		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6620.42		6645.78				0.812																				
2720	25.36	1.03	6621.45		SEAMLESS	MILL FAULT	EXT MFG	103	3	72	54	112	6621.45	106	6621.54	117	1.10	115	0.812	1.10	1.93	0.187	23							External									
2730	25.22	25.36	6645.78		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6645.78		6671.00				0.812																				
2740	24.44	25.22	6671.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6671.00		6695.44				0.812																				
2750	27.45	24.44	6695.44		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6695.44		6722.89				0.812																				
2760	27.62	27.45	6722.89		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6722.89		6750.50				0.812																				
2770	27.41	27.62	6750.50		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6750.50		6777.91				0.812																				
2780	26.54	27.41	6777.91		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6777.91		6804.45				0.812																				
2790	27.26	26.54	6804.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6804.45		6831.71				0.812																				
2800	27.07	27.26	6831.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6831.71		6858.78				0.812																				
2810	26.47	27.07	6858.78		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6858.78		6885.25				0.812																				
2820	26.35	26.47	6885.25		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6885.25		6911.59				0.812																				
2830	26.66	26.35	6911.59		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6911.59		6938.26				0.812																				
2840	25.61	26.66	6938.26		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6938.26		6963.87				0.812																				
2850	25.59	25.61	6963.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6963.87		6989.46				0.812																				
2860	24.00	25.59	6989.46		SEAMLESS	GIRTH WELD	GIRTH WELD	1					6989.46		7013.45				0.812																				
2870	26.74	24.00	7013.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7013.45		7040.19				0.812																				
2880	27.30	26.74	7040.19		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7040.19		7067.49				0.812																				
2890	25.96	27.30	7067.49		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7067.49		7093.45				0.812																				
2900	24.29	25.96	7093.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7093.45		7117.74				0.812																				
2910	25.26	24.29	7117.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7117.74		7143.00				0.812																				
2920	23.06	25.26	7143.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7143.00		7166.07				0.812																				
2930	25.24	23.06	7166.07		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7166.07		7191.31				0.812																				
2940	22.70	25.24	7191.31		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7191.31		7214.01				0.812																				
2950	25.89	22.70	7214.01		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7214.01		7239.90				0.812																				
2960	27.92	25.89	7239.90		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7239.90		7267.82				0.812																				
2970	26.40	27.92	7267.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7267.82		7294.21				0.812																				
2980	26.83	26.40	7294.21		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7294.21		7321.04				0.812																				
2990	25.93	26.83	7321.04		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7321.04		7346.97				0.812																				
3000	25.05	25.93	7346.97		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7346.97		7372.02				0.812																				
3010	25.69	25.05	7372.02		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7372.02		7397.71				0.812																				
3020	27.20	25.69	7397.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7397.71		7424.91				0.812																				
3020	27.20	3.85	7401.56		SEAMLESS	MILL FAULT	INT MFG	103	3	73	55	199	7401.56	197	7401.61	202	3.87	199	0.812	0.67	0.79	0.106	13							Internal									
3020	27.20	4.73	7402.44		SEAMLESS	MILL FAULT	INT MFG	103	3	74	56	80	7402.44	64	7402.54	97	4.80	67	0.812	1.14	5.71	0.113	14							Internal									
3030	25.85	27.20	7424.91		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7424.91		7450.76				0.812																				
3040	26.17	25.85	7450.76		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7450.76		7476.94				0.812																				
3040	26.17	19.95	7470.72		SEAMLESS	MILL FAULT	*EXT MFG	103	3	75	57	76	7470.72	62	7470.99	91	20.21	76	0.812	3.27	5.12	0.219	27							External									
3050	27.63	26.17	7476.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7476.94		7504.56				0.812																				
3060	26.13	27.63	7504.56		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7504.56		7530.69				0.812																				
3070	26.68	26.13	7530.69		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7530.69		7557.37				0.812																				
3070	26.68	23.68	7554.36		SEAMLESS	MILL FAULT	*EXT MFG	103	3	76	58	1	7554.36	1	7554.41	2	23.70	1	0.812	0.55	0.20	0.219	27							External									
3080	26.96	26.68	7557.37		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7557.37		7584.33				0.812																				
3090	27.24	26.96	7584.33		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7584.33		7611.57				0.812																				
3100	25.97	27.24	7611.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7611.57		7637.54				0.812																				
3100	25.97	4.96	7616.53		SEAMLESS	MILL FAULT	*EXT MFG	103	3	77	59	282	7616.53	282	7616.58	283	4.99	282	0.812	0.59	0.20	0.219	27							External									
3110	26.72	25.97	7637.54		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7637.54		7664.26				0.812																				
3120	18.41	26.72	7664.26		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7664.26		7682.66				0.812																				
3130	16.67	18.41	7682.66		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7682.66		7699.33				0.812																				
3140	26.49	16.67	7699.33		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7699.33		7725.82				0.812																				
3150	20.23	26.49	7725.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7725.82		7746.05				0.812																				
3160	25.75	20.23	7746.05		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7746.05		7771.80				0.812																				
3170	28.61	25.75	7771.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7771.80		7800.40				0.812																				
3180	26.81	28.61	7800.40		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7800.40		7827.22				0.812																				
3190	17.76	26.81	7827.22		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7827.22		7844.98				0.812																				
3200	25.89	17.76	7844.98		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7844.98		7870.87				0.812																				
3210	26.03	25.89	7870.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7870.87		7896.89				0.812																				
3220	26.43	26.03	7896.89		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7896.89		7923.33				0.812																				
3230	21.50	26.43	7923.33		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7923.33		7944.83				0.812																				
3240	26.19	21.50	7944.83		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7944.83		7971.02				0.812																				
3250	22.98	26.19	7971.02		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7971.02		7994.00				0.812																				
3260	18.00	22.98	7994.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					7994.00		8012.00				0.812																				
3270	27.73	18.00	8012.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8012.00		8039.73				0.812																				
3280	26.95	27.73	8039.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8039.73		8066.68				0.812																				
3280	26.95	25.57	8065.31		SEAMLESS	MILL FAULT	INT MFG	103	3	78	60	72	8065.31	54	8065.61	90	25.71	64	0.812	3.70	6.22	0.187	23							Internal									
3290	26.57	26.95	8066.68		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8066.68		8093.24				0.812																				
3300	26.57	26.57	8093.24		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8093.24		8119.81				0.812																				
3310	23.92	26.57	8119.81		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8119.81		8143.72				0.812																				
3320	24.46	23.92	8143.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8143.72		8168.18				0.812																				
3330	25.68	24.46	8168.18		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8168.18		8193.86				0.812																				
3340	26.86	25.68	8193.86		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8193.86		8220.71				0.812																				
3350	18.65	26.86	8220.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8220.71		8239.36				0.812																				
3360	27.10	18.65	8239.36		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8239.36		8266.46				0.812																				
3370	23.75	27.10	8266.46		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8266.46		8290.21				0.812																				
3380	19.48	23.75	8290.21		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8290.21		8309.69				0.812																				
3390	27.41	19.48	8309.69		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8309.69		8337.10				0.812																				
3400	27.25	27.41	8337.10		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8337.10		8364.35				0.812																				
3410	27.89	27.25	8364.35		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8364.35		8392.24				0.812																				
3420	26.49	27.89	8392.24		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8392.24		8418.72				0.812																				
3430	23.30	26.49	8418.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8418.72		8442.03				0.812																				
3440	25.37	23.30	8442.03		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8442.03		8467.40				0.812																				

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Enbridge Energy Limited Partnership
MFL 20in Inspection

Line 5: 20" Straits of Mackinac - East Leg
Run Date: 28 August 2013
Issue Date: 02 December 2013

Upstream Girth Weld	Joint Length (feet)	Relative Distance (feet)	Absolute Distance (feet)	Long Seam Orientation (Deg)	Weld Type	Feature Type	Comment	Feature Code	Feature Subtype	Feature ID	Cluster ID	Orient. (Deg)	Start Absolute Distance (feet)	Start Orient (Deg)	End Absolute Distance (feet)	End Orient. (Deg)	MSP Relative Distance (feet)	MSP Orient. (Deg)	Nominal Wall Thickness (in)	Length (in)	Width (in)	Peak Depth (in)	Peak Depth (%NomWT)	MSP Rel to LSW (Deg)	0.85 DL RPR	Effective Length (in)	Effective Depth (in)	Effective Depth (%NomWT)	Effective Area RPR	Radial Position	Data Degradation	Dent Depth (%OD)	Dent Depth (in)	Ovality (%OD)	Min ID (in)	Dent in Close Proximity	Dent Association	Top/Bottom Dent	Relative Position
3450	27.18	26.37	8467.40		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8467.40		8494.58				0.812																				
3460	26.36	27.18	8494.58		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8494.58		8520.93				0.812																				
3470	20.25	26.36	8520.93		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8520.93		8541.18				0.812																				
3480	27.28	20.25	8541.18		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8541.18		8568.46				0.812																				
3490	27.69	27.28	8568.46		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8568.46		8596.14				0.812																				
3500	27.69	27.69	8596.14		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8596.14		8623.83				0.812																				
3510	27.22	27.69	8623.83		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8623.83		8651.05				0.812																				
3520	24.88	27.22	8651.05		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8651.05		8675.93				0.812																				
3530	24.25	24.88	8675.93		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8675.93		8700.17				0.812																				
3540	21.73	24.25	8700.17		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8700.17		8721.91				0.812																				
3550	19.63	21.73	8721.91		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8721.91		8741.54				0.812																				
3560	27.08	19.63	8741.54		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8741.54		8768.61				0.812																				
3570	27.66	27.08	8768.61		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8768.61		8796.27				0.812																				
3580	27.17	27.66	8796.27		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8796.27		8823.44				0.812																				
3590	28.01	27.17	8823.44		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8823.44		8851.44				0.812																				
3600	24.97	28.01	8851.44		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8851.44		8876.41				0.812																				
3610	27.19	24.97	8876.41		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8876.41		8903.60				0.812																				
3620	24.38	27.19	8903.60		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8903.60		8927.98				0.812																				
3630	24.06	24.38	8927.98		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8927.98		8952.03				0.812																				
3640	23.76	24.06	8952.03		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8952.03		8975.80				0.812																				
3640	23.76	20.83	8972.86		SEAMLESS	MILL FAULT	EXT MFG	103	3	79	61	40	8972.86	29	8972.92	50	20.85	46	0.812	0.71	3.58	0.211	26							External									
3640	23.76	22.86	8974.90		SEAMLESS	MILL FAULT	EXT MFG	103	3	80	62	254	8974.90	250	8974.95	257	22.89	254	0.812	0.63	1.30	0.138	17							External									
3650	26.44	23.76	8975.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					8975.80		9002.24				0.812																				
3660	25.25	26.44	9002.24		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9002.24		9027.49				0.812																				
3670	21.81	25.25	9027.49		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9027.49		9049.30				0.812																				
3670	21.81	0.54	9028.03		SEAMLESS	MILL FAULT	EXT MFG	103	3	81	63	51	9028.03	50	9028.09	52	0.57	51	0.812	0.75	0.35	0.162	20							External									
3680	27.56	21.81	9049.30		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9049.30		9076.86				0.812																				
3690	27.23	27.56	9076.86		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9076.86		9104.09				0.812																				
3700	26.21	27.23	9104.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9104.09		9130.31				0.812																				
3710	27.18	26.21	9130.31		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9130.31		9157.48				0.812																				
3720	26.95	27.18	9157.48		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9157.48		9184.43				0.812																				
3730	26.49	26.95	9184.43		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9184.43		9210.92				0.812																				
3730	26.49	5.37	9189.80		SEAMLESS	MILL FAULT	INT MFG	103	3	82	64	74	9189.80	72	9189.84	76	5.39	74	0.812	0.43	0.63	0.122	15							Internal									
3740	27.12	26.49	9210.92		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9210.92		9238.04				0.812																				
3750	20.40	27.12	9238.04		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9238.04		9258.43				0.812																				
3750	20.40	7.23	9245.27		SEAMLESS	MILL FAULT	*EXT MFG	103	3	83	65	48	9245.27	47	9245.94	48	7.33	48	0.812	8.11	0.20	0.219	27							External									
3750	20.40	8.45	9246.48		SEAMLESS	MILL FAULT	EXT MFG	103	3	84	66	42	9246.48	41	9246.50	42	8.46	42	0.812	0.24	0.20	0.194	24							External									
3750	20.40	8.91	9246.95		SEAMLESS	MILL FAULT	EXT MFG	103	3	85	67	32	9246.95	29	9247.04	36	8.96	32	0.812	1.14	1.30	0.170	21							External									
3760	28.30	20.40	9258.43		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9258.43		9286.74				0.812																				
3770	26.48	28.30	9286.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9286.74		9313.21				0.812																				
3780	25.84	26.48	9313.21		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9313.21		9339.05				0.812																				
3780	25.84	1.78	9314.98		SEAMLESS	MILL FAULT	INT MFG	103	3	86	68	56	9314.98	54	9315.02	58	1.80	56	0.812	0.47	0.63	0.178	22							Internal									
3790	19.02	25.84	9339.05		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9339.05		9358.07				0.812																				
3800	27.40	19.02	9358.07		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9358.07		9385.47				0.812																				
3810	20.19	27.40	9385.47		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9385.47		9405.65				0.812																				
3820	26.13	20.19	9405.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9405.65		9431.78				0.812																				
3830	24.77	26.13	9431.78		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9431.78		9456.55				0.812																				
3840	23.23	24.77	9456.55		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9456.55		9479.78				0.812																				
3850	28.17	23.23	9479.78		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9479.78		9507.95				0.812																				
3860	27.48	28.17	9507.95		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9507.95		9535.43				0.812																				
3870	26.71	27.48	9535.43		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9535.43		9562.14				0.812																				
3880	21.27	26.71	9562.14		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9562.14		9583.41				0.812																				
3880	21.27	1.46	9563.60		SEAMLESS	MILL FAULT	EXT MFG	103	3	87	69	153	9563.60	147	9563.68	159	1.50	153	0.812	1.02	2.05	0.138	17							External									
3880	21.27	8.07	9570.21		SEAMLESS	MILL FAULT	INT MFG	103	3	88	70	325	9570.21	322	9570.49	327	8.32	323	0.812	3.35	0.91	0.194	24							Internal									
3890	25.20	21.27	9583.41		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9583.41		9608.61				0.812																				
3900	27.99	25.20	9608.61		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9608.61		9636.59				0.812																				
3910	23.51	27.99	9636.59		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9636.59		9660.11				0.812																				
3910	23.51	4.46	9641.05		SEAMLESS	MILL FAULT	EXT MFG	103	3	89	71	80	9641.05	80	9641.08	81	4.47	80	0.812	0.35	0.20	0.203	25							External									
3920	19.37	23.51	9660.11		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9660.11		9679.47				0.812																				
3930	23.36	19.37	9679.47		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9679.47		9702.83				0.812																				
3940	27.18	23.36	9702.83		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9702.83		9730.01				0.812																				
3950	24.77	27.18	9730.01		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9730.01		9754.78				0.812																				
3960	26.43	24.77	9754.78		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9754.78		9781.21				0.812																				
3970	25.61	26.43	9781.21		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9781.21		9806.82				0.812																				
3980	27.84	25.61	9806.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9806.82		9834.67				0.812																				
3990	23.05	27.84	9834.67		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9834.67		9857.71				0.812																				
3990	23.05	18.61	9853.27		SEAMLESS	MILL FAULT	*EXT MFG	103	3	90	72	172	9853.27	160	9853.37	185	18.67	160	0.812	1.14	4.37	0.227	28							External									
4000	21.98	23.05	9857.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9857.71		9879.69				0.812																				
4010	25.70	21.98	9879.69		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9879.69		9905.39				0.812																				
4010	25.70	23.29	9902.99		SEAMLESS	MILL FAULT	EXT MFG	103	3	91	73	322	9902.99	292	9903.56	351	23.71	313	0.812	6.85	10.24	0.219	27							External									
4020	22.84	25.70	9905.39		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9905.39		9928.24				0.812																				
4030	27.40	22.84	9928.24		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9928.24		9955.63				0.812																				
4040	27.26	27.40	9955.63		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9955.63		9982.90				0.812																				
4050	26.16	27.26	9982.90		SEAMLESS	GIRTH WELD	GIRTH WELD	1					9982.90		10009.06				0.812																				
4060	24.51	26.16	10009.06		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10009.06		10033.56				0.812																				
4070	22.40	24.51	10033.56		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10033.56		10055.96				0.812																				
4080	28.26	22.40	10055.96		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10055.96		10084.22				0.812																				
4090	27.34	28.26	10084.22		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10084.22		10111.56				0.812																				
4100	28.55	27.34	10111.56		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10111.56		10140.12				0.812																				
4100	28.55	12.19	10123.75		SEAMLESS	MILL FAULT	EXT MFG	103	3	92	74	157	10123.75	156	10123.80	159	12.22	157	0.812	0.63	0.55	0.203	25							External									
4110	24.99	28.55	10140.12		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10140.12		10165.10				0.812																				
4120	17.17	24.99	10165.10		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10165.10		10182.27				0.812																				
4130	25.86	17.17	10182.27		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10182.27		10208.14				0.812																				
4140	26.67	25.86	10208.14		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10208.14		10234.81				0.812																				
4150	26.68	26.67	10234.81		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10234.81		10261.49				0.812																				
4160	27.45	26.68	10261.49		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10261.49		10288.94				0.812																				
4170	26.05	27.45	10288.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10288.94		10314.99				0.812																				
4180	26.60	26.05	10314.99		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10314.99		10341.59				0.812																				
4190	25.44	26.60	10341.59		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10341.59		10367.03				0.812																				
4200	27.07	25.44	10367.03		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10367.03		10394.09				0.812																				
4210	23.78	27.07	10394.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10394.09		10417.87				0.812																				
4220	24.12	23.78	10417.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10417.87		10442.00				0.812																				
4220	24.12	14.29	10432.16		SEAMLESS	MILL FAULT	EXT MFG	103	3	93	75	312	10432.16	311	10432.40	314	14.32	313	0.812	2.95	0.55	0.211	26							External									
4220	24.12	22.74	10440.61		SEAMLESS	MILL FAULT	INT MFG	103	3	94	76	12	10440.61	10	10440.69	15	22.78	12	0.812	0.91	0.94	0.122	15							Internal									
4230	26.74	24.12	10442.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10442.00		10468.73				0.812																				
4240	26.81	26.74	10468.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10468.73		10495.55				0.812																				
4250	25.95	26.81	10495.55		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10495.55		10521.50				0.812																				
4250	25.95	6.94	10502.49		SEAMLESS	MILL FAULT	INT MFG	103	3	95	77	73	10502.49	9	10504.30	137	7.64	92	0.812	21.77	22.40	0.162	20							Internal									
4250	25.95	12.08	10507.63		SEAMLESS	MILL FAULT	INT MFG	103	3	96	78	123	10507.63	121	10507.66	126	12.10	123	0.812	0.47	0.91	0.113	14							Internal									
4250	25.95	12.51	10508.06		SEAMLESS	MILL FAULT	INT MFG	103	3	97	79	28	10508.06	23	10508.13	33	12.57	25	0.812	0.87	1.73	0.138	17							Internal									
4250	25.95	12.71	10508.26		SEAMLESS	MILL FAULT	INT MFG	103	3	98	80	177	10508.26	175	10508.34	180	12.75	177	0.812	0.94	0.83	0.057	7							Internal									
4260	26.15	25.95	10521.50		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10521.50		10547.65				0.812																				
4270	24.80	26.15	10547.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10547.65		10572.45				0.812																				
4280	25.22	24.80	10572.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10572.45		10597.67				0.812																				
4290	25.90	25.22	10597.67		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10597.67		10623.57				0.812																				
4300	26.98	25.90	10623.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10623.57		10650.55				0.812																				
4310	27.31	26.98	10650.55		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10650.55		10677.85				0.812																				
4320	18.47	27.31	10677.85		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10677.85		10696.33				0.812																				
4330	18.33	18.47	10696.33		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10696.33		10714.66				0.812																				
4340	27.59	18.33	10714.66		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10714.66		10742.25				0.812																				
4350	26.04	27.59	10742.25		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10742.25		10768.28				0.812																				
4360	22.28	26.04	10768.28		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10768.28		10790.56				0.812																				
4370	25.55	22.28	10790.56		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10790.56		10816.11				0.812																				
4380	22.46	25.55	10816.11		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10816.11		10838.57				0.812																				
4390	27.78	22.46	10838.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10838.57		10866.35				0.812																				
4400	16.90	27.78	10866.35		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10866.35		10883.25				0.812																				
4410	16.56	16.90	10883.25		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10883.25		10899.80				0.812																				
4420	26.61	16.56	10899.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10899.80		10926.41				0.812																				
4430	26.31	26.61	10926.41		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10926.41		10952.72				0.812																				
4440	25.59	26.31	10952.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10952.72		10978.31				0.812																				
4450	26.78	25.59	10978.31		SEAMLESS	GIRTH WELD	GIRTH WELD	1					10978.31		11005.10				0.812																				
4460	26.26	26.78	11005.10		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11005.10		11031.36				0.812																				
4470	26.66	26.26	11031.36		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11031.36		11058.02				0.812																				
4480	26.37	26.66	11058.02		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11058.02		11084.38				0.812																				
4480	26.37	21.21	11079.22		SEAMLESS	MILL FAULT	EXT MFG	103	3	99	81	312	11079.22	307	11079.43	318	21.39	317	0.812	2.48	1.97	0.211	26							External									
4490	27.12	26.37	11084.38		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11084.38		11111.51				0.812																				
4500	23.95	27.12	11111.51		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11111.51		11135.45				0.812																				
4510	25.19	23.95	11135.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11135.45		11160.64				0.812																				
4520	27.13	25.19	11160.64		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11160.64		11187.77				0.812																				
4530	28.38	27.13	11187.77		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11187.77		11216.15				0.812																				
4540	24.52	28.38	11216.15		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11216.15		11240.67				0.812																				
4550	26.50	24.52	11240.67		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11240.67		11267.17				0.812																				
4560	26.87	26.50	11267.17		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11267.17		11294.04				0.812																				
4570	26.97	26.87	11294.04		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11294.04		11321.01				0.812																				
4580	22.72	26.97	11321.01		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11321.01		11343.73				0.812																				
4590	26.76	22.72	11343.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11343.73		11370.50				0.812																				
4600	21.43	26.76	11370.50		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11370.50		11391.93				0.812																				
4610	26.76	21.43	11391.93		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11391.93		11418.69				0.812																				
4620	27.02	26.76	11418.69		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11418.69		11445.71				0.812																				
4620	27.02	25.17	11443.86		SEAMLESS	MILL FAULT	INT MFG	103	3	100	82	357	11443.86	355	11443.93	359	25.21	357	0.812	0.87	0.75	0.081	10							Internal									
4630	27.02	27.02	11445.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11445.71		11472.74				0.812																				

Pipeline Listing

Upstream Girth Weld	Joint Length (feet)	Relative Distance (feet)	Absolute Distance (feet)	Long Seam Orientation (Deg)	Weld Type	Feature Type	Comment	Feature Code	Feature Subtype	Feature ID	Cluster ID	Orient. (Deg)	Start Absolute Distance (feet)	Start Orient (Deg)	End Absolute Distance (feet)	End Orient. (Deg)	MSP Relative Distance (feet)	MSP Orient. (Deg)	Nominal Wall Thickness (in)	Length (in)	Width (in)	Peak Depth (in)	Peak Depth (%NomWT)	MSP Rel to LSW (Deg)	0.85 DL RPR	Effective Length (in)	Effective Depth (in)	Effective Depth (%NomWT)	Effective Area RPR	Radial Position	Data Degradation	Dent Depth (%OD)	Dent Depth (in)	Ovality (%OD)	Min ID (in)	Dent in Close Proximity	Dent Association	Top/Bottom Dent	Relative Position
4640	20.46	27.02	11472.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11472.74		11493.19				0.812																				
4650	26.90	20.46	11493.19		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11493.19		11520.09				0.812																				
4660	27.82	26.90	11520.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11520.09		11547.91				0.812																				
4660	27.82	0.58	11520.67		SEAMLESS	MILL FAULT	EXT MFG	103	3	101	83	269	11520.67	258	11521.01	279	0.76	259	0.812	4.02	3.70	0.187	23							External									
4670	26.89	27.82	11547.91		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11547.91		11574.80				0.812																				
4680	27.75	26.89	11574.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11574.80		11602.55				0.812																				
4690	26.20	27.75	11602.55		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11602.55		11628.75				0.812																				
4700	27.34	26.20	11628.75		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11628.75		11656.09				0.812																				
4710	28.06	27.34	11656.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11656.09		11684.15				0.812																				
4720	26.31	28.06	11684.15		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11684.15		11710.47				0.812																				
4730	27.08	26.31	11710.47		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11710.47		11737.54				0.812																				
4740	27.27	27.08	11737.54		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11737.54		11764.82				0.812																				
4740	27.27	23.48	11761.03		SEAMLESS	MILL FAULT	EXT MFG	103	3	102	84	15	11761.03	7	11762.07	24	23.53	13	0.812	12.56	3.03	0.187	23							External									
4740	27.27	24.72	11762.26		SEAMLESS	MILL FAULT	EXT MFG	103	3	103	85	67	11762.26	58	11762.44	75	24.89	59	0.812	2.20	2.99	0.178	22							External									
4750	19.39	27.27	11764.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11764.82		11784.21				0.812																				
4760	21.99	19.39	11784.21		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11784.21		11806.20				0.812																				
4770	25.76	21.99	11806.20		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11806.20		11831.97				0.812																				
4780	27.62	25.76	11831.97		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11831.97		11859.58				0.812																				
4790	25.08	27.62	11859.58		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11859.58		11884.66				0.812																				
4800	24.61	25.08	11884.66		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11884.66		11909.26				0.812																				
4810	27.86	24.61	11909.26		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11909.26		11937.13				0.812																				
4820	25.98	27.86	11937.13		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11937.13		11963.11				0.812																				
4830	24.93	25.98	11963.11		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11963.11		11988.04				0.812																				
4840	21.00	24.93	11988.04		SEAMLESS	GIRTH WELD	GIRTH WELD	1					11988.04		12009.04				0.812																				
4850	26.78	21.00	12009.04		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12009.04		12035.82				0.812																				
4860	26.51	26.78	12035.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12035.82		12062.33				0.812																				
4870	19.58	26.51	12062.33		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12062.33		12081.90				0.812																				
4880	26.74	19.58	12081.90		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12081.90		12108.64				0.812																				
4890	26.16	26.74	12108.64		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12108.64		12134.80				0.812																				
4900	28.43	26.16	12134.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12134.80		12163.23				0.812																				
4910	27.63	28.43	12163.23		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12163.23		12190.86				0.812																				
4920	26.72	27.63	12190.86		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12190.86		12217.57				0.812																				
4930	27.30	26.72	12217.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12217.57		12244.87				0.812																				
4940	28.18	27.30	12244.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12244.87		12273.05				0.812																				
4950	27.18	28.18	12273.05		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12273.05		12300.23				0.812																				
4960	27.63	27.18	12300.23		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12300.23		12327.85				0.812																				
4970	27.52	27.63	12327.85		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12327.85		12355.37				0.812																				
4980	24.97	27.52	12355.37		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12355.37		12380.34				0.812																				
4990	24.89	24.97	12380.34		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12380.34		12405.23				0.812																				
5000	26.02	24.89	12405.23		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12405.23		12431.24				0.812																				
5010	26.64	26.02	12431.24		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12431.24		12457.88				0.812																				
5020	22.09	26.64	12457.88		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12457.88		12479.97				0.812																				
5030	26.89	22.09	12479.97		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12479.97		12506.87				0.812																				
5040	27.69	26.89	12506.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12506.87		12534.56				0.812																				
5050	26.29	27.69	12534.56		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12534.56		12560.85				0.812																				
5060	27.44	26.29	12560.85		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12560.85		12588.29				0.812																				
5070	27.71	27.44	12588.29		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12588.29		12616.00				0.812																				
5080	27.29	27.71	12616.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12616.00		12643.28				0.812																				
5090	23.27	27.29	12643.28		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12643.28		12666.56				0.812																				
5100	27.35	23.27	12666.56		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12666.56		12693.91				0.812																				
5110	26.19	27.35	12693.91		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12693.91		12720.10				0.812																				
5110	26.19	22.84	12716.75		SEAMLESS	MILL FAULT	EXT MFG	103	3	104	86	260	12716.75	236	12717.66	284	23.73	282	0.812	10.96	8.35	0.203	25							External									
5120	24.42	26.19	12720.10		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12720.10		12744.52				0.812																				
5130	26.85	24.42	12744.52		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12744.52		12771.37				0.812																				
5140	24.05	26.85	12771.37		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12771.37		12795.42				0.812																				
5150	25.63	24.05	12795.42		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12795.42		12821.05				0.812																				
5160	27.10	25.63	12821.05		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12821.05		12848.15				0.812																				
5170	26.39	27.10	12848.15		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12848.15		12874.54				0.812																				
5180	27.39	26.39	12874.54		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12874.54		12901.93				0.812																				
5190	25.27	27.39	12901.93		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12901.93		12927.20				0.812																				
5200	27.20	25.27	12927.20		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12927.20		12954.40				0.812																				
5210	26.95	27.20	12954.40		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12954.40		12981.34				0.812																				
5220	25.85	26.95	12981.34		SEAMLESS	GIRTH WELD	GIRTH WELD	1					12981.34		13007.20				0.812																				
5230	27.60	25.85	13007.20		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13007.20		13034.80				0.812																				
5240	25.61	27.60	13034.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13034.80		13060.41				0.812																				
5250	26.99	25.61	13060.41		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13060.41		13087.40				0.812																				
5260	26.96	26.99	13087.40		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13087.40		13114.36				0.812																				
5270	26.36	26.96	13114.36		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13114.36		13140.72				0.812																				
5280	27.29	26.36	13140.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13140.72		13168.00				0.812																				
5290	26.86	27.29	13168.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13168.00		13194.86				0.812																				
5300	26.66	26.86	13194.86		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13194.86		13221.52				0.812																				
5310	26.51	26.66	13221.52		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13221.52		13248.03				0.812																				
5320	26.51	26.51	13248.03		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13248.03		13274.54				0.812																				
5330	27.65	26.51	13274.54		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13274.54		13302.19				0.812																				
5330	27.65	5.05	13279.59		SEAMLESS	MILL FAULT	INT MFG	103	3	105	87	192	13279.59	189	13279.66	195	5.09	192	0.812	0.87	0.98	0.122	15							Internal									
5330	27.65	6.54	13281.08		SEAMLESS	MILL FAULT	INT MFG	103	3	106	88	232	13281.08	226	13281.16	238	6.58	232	0.812	0.98	2.05	0.065	8							Internal									
5330	27.65	7.55	13282.09		SEAMLESS	MILL FAULT	INT MFG	103	3	107	89	182	13282.09	156	13283.17	209	8.05	207	0.812	12.95	9.21	0.170	21							Internal									
5330	27.65	8.07	13282.62		SEAMLESS	MILL FAULT	INT MFG	103	3	108	90	105	13282.62	103	13282.72	107	8.12	105	0.812	1.18	0.63	0.073	9							Internal									
5330	27.65	9.08	13283.62		SEAMLESS	MILL FAULT	INT MFG	103	3	109	91	211	13283.62	205	13283.70	217	9.12	211	0.812	0.98	2.05	0.048	6							Internal									
5330	27.65	10.05	13284.59		SEAMLESS	MILL FAULT	INT MFG	103	3	110	92	190	13284.59	182	13284.66	198	10.10	185	0.812	0.79	2.87	0.081	10							Internal									
5330	27.65	12.95	13287.49		SEAMLESS	MILL FAULT	INT MFG	103	3	111	93	181	13287.49	179	13287.55	183	12.98	181	0.812	0.75	0.67	0.122	15							Internal									
5330	27.65	13.46	13288.00		SEAMLESS	MILL FAULT	INT MFG	103	3	112	94	213	13288.00	211	13288.05	216	13.48	213	0.812	0.55	0.79	0.162	20							Internal									
5330	27.65	13.94	13288.49		SEAMLESS	MILL FAULT	INT MFG	103	3	113	95	210	13288.49	204	13288.55	215	13.98	206	0.812	0.75	1.97	0.130	16							Internal									
5330	27.65	14.52	13289.07		SEAMLESS	MILL FAULT	INT MFG	103	3	114	96	130	13289.07	115	13289.14	144	14.56	119	0.812	0.83	5.08	0.065	8							Internal									
5340	26.08	27.65	13302.19		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13302.19		13328.27				0.812																				
5350	27.43	26.08	13328.27		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13328.27		13355.70				0.812																				
5360	25.06	27.43	13355.70		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13355.70		13380.75				0.812																				
5370	26.21	25.06	13380.75		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13380.75		13406.97				0.812																				
5380	27.44	26.21	13406.97		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13406.97		13434.41				0.812																				
5390	26.56	27.44	13434.41		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13434.41		13460.97				0.812																				
5400	22.67	26.56	13460.97		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13460.97		13483.64				0.812																				
5400	22.67	9.14	13470.11		SEAMLESS	MILL FAULT	EXT MFG	103	3	115	97	62	13470.11	58	13470.28	66	9.30	59	0.812	2.05	1.34	0.154	19							External									
5400	22.67	10.74	13471.71		SEAMLESS	MILL FAULT	EXT MFG	103	3	116	98	50	13471.71	48	13471.90	51	10.76	49	0.812	2.36	0.55	0.219	27							External									
5400	22.67	11.08	13472.04		SEAMLESS	MILL FAULT	*EXT MFG	103	3	117	99	252	13472.04	248	13472.27	256	11.29	255	0.812	2.72	1.34	0.243	30							External									
5400	22.67	12.33	13473.30		SEAMLESS	MILL FAULT	EXT MFG	103	3	118	100	155	13473.30	149	13473.56	161	12.58	154	0.812	3.19	2.17	0.203	25							External									
5410	22.81	22.67	13483.64		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13483.64		13506.45				0.812																				
5420	23.63	22.81	13506.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13506.45		13530.09				0.812																				
5420	23.63	21.38	13527.83		SEAMLESS	MILL FAULT	*EXT MFG	103	3	119	101	131	13527.83	126	13528.15	137	21.55	134	0.812	3.86	1.89	0.252	31							External									
5420	23.63	22.10	13528.56		SEAMLESS	MILL FAULT	*EXT MFG	103	3	120	102	129	13528.56	128	13528.67	131	22.13	130	0.812	1.42	0.55	0.243	30							External									
5430	25.84	23.63	13530.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13530.09		13555.93				0.812																				
5440	22.74	25.84	13555.93		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13555.93		13578.67				0.812																				
5450	28.34	22.74	13578.67		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13578.67		13607.00				0.812																				
5460	24.76	28.34	13607.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13607.00		13631.76				0.812																				
5470	26.53	24.76	13631.76		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13631.76		13658.29				0.812																				
5480	27.64	26.53	13658.29		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13658.29		13685.93				0.812																				
5490	27.72	27.64	13685.93		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13685.93		13713.65				0.812																				
5500	26.48	27.72	13713.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13713.65		13740.13				0.812																				
5510	27.69	26.48	13740.13		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13740.13		13767.82				0.812																				
5520	26.29	27.69	13767.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13767.82		13794.10				0.812																				
5530	26.33	26.29	13794.10		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13794.10		13820.43				0.812																				
5540	26.88	26.33	13820.43		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13820.43		13847.31				0.812																				
5550	27.25	26.88	13847.31		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13847.31		13874.56				0.812																				
5560	26.53	27.25	13874.56		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13874.56		13901.09				0.812																				
5570	24.91	26.53	13901.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13901.09		13926.01				0.812																				
5580	26.43	24.91	13926.01		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13926.01		13952.44				0.812																				
5590	25.53	26.43	13952.44		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13952.44		13977.97				0.812																				
5600	25.93	25.53	13977.97		SEAMLESS	GIRTH WELD	GIRTH WELD	1					13977.97		14003.89				0.812																				
5610	25.35	25.93	14003.89		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14003.89		14029.24				0.812																				
5620	25.33	25.35	14029.24		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14029.24		14054.57				0.812																				
5630	27.21	25.33	14054.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14054.57		14081.78				0.812																				
5640	26.00	27.21	14081.78		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14081.78		14107.78				0.812																				
5650	26.95	26.00	14107.78		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14107.78		14134.72				0.812																				
5660	22.21	26.95	14134.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14134.72		14156.93				0.812																				
5670	23.22	22.21	14156.93		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14156.93		14180.15				0.812																				
5680	26.49	23.22	14180.15		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14180.15		14206.64				0.812																				
5690	26.97	26.49	14206.64		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14206.64		14233.61				0.812																				
5700	27.40	26.97	14233.61		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14233.61		14261.00				0.812																				
5710	25.44	27.40	14261.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14261.00		14286.44				0.812																				
5720	25.82	25.44	14286.44		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14286.44		14312.26				0.812																				
5730	23.25	25.82	14312.26		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14312.26		14335.51				0.812																				
5740	27.30	23.25	14335.51		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14335.51		14362.81				0.812																				
5750	26.43	27.30	14362.81		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14362.81		14389.24				0.812																				
5760	27.54	26.43	14389.24		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14389.24		14416.78				0.812																				
5770	25.24	27.54	14416.78		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14416.78		14442.02				0.812																				
5780	28.24	25.24	14442.02		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14442.02		14470.25				0.812																				
5790	25.57	28.24	14470.25		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14470.25		14495.82				0.812																				
5800	27.77	25.57	14495.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14495.82		14523.59				0.812																				
5810	26.88	27.77	14523.59		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14523.59		14550.47				0.812																				
5820	27.49	26.88	14550.47		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14550.47		14577.96				0.812																				
5830	19.28	27.49	14577.96		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14577.96		14597.24				0.812																				
5840	26.67	19.28	14597.24		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14597.24		14623.92				0.812																				

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Enbridge Energy Limited Partnership
MFL 20in Inspection

Line 5: 20" Straits of Mackinac - East Leg
Run Date: 28 August 2013
Issue Date: 02 December 2013

Upstream Girth Weld	Joint Length (feet)	Relative Distance (feet)	Absolute Distance (feet)	Long Seam Orientation (Deg)	Weld Type	Feature Type	Comment	Feature Code	Feature Subtype	Feature ID	Cluster ID	Orient. (Deg)	Start Absolute Distance (feet)	Start Orient (Deg)	End Absolute Distance (feet)	End Orient. (Deg)	MSP Relative Distance (feet)	MSP Orient. (Deg)	Nominal Wall Thickness (in)	Length (in)	Width (in)	Peak Depth (in)	Peak Depth (%NomWT)	MSP Rel to LSW (Deg)	0.85 DL RPR	Effective Length (in)	Effective Depth (in)	Effective Depth (%NomWT)	Effective Area RPR	Radial Position	Data Degradation	Dent Depth (%OD)	Dent Depth (in)	Ovality (%OD)	Min ID (in)	Dent in Close Proximity	Dent Association	Top/Bottom Dent	Relative Position
5850	27.08	26.67	14623.92		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14623.92		14650.99				0.812																				
5860	24.79	27.08	14650.99		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14650.99		14675.79				0.812																				
5870	20.87	24.79	14675.79		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14675.79		14696.65				0.812																				
5880	23.43	20.87	14696.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14696.65		14720.08				0.812																				
5890	25.69	23.43	14720.08		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14720.08		14745.77				0.812																				
5900	26.81	25.69	14745.77		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14745.77		14772.58				0.812																				
5910	28.22	26.81	14772.58		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14772.58		14800.80				0.812																				
5920	22.21	28.22	14800.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14800.80		14823.01				0.812																				
5930	26.33	22.21	14823.01		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14823.01		14849.33				0.812																				
5940	24.91	26.33	14849.33		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14849.33		14874.25				0.812																				
5950	26.94	24.91	14874.25		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14874.25		14901.18				0.812																				
5960	27.82	26.94	14901.18		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14901.18		14929.00				0.812																				
5970	27.86	27.82	14929.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14929.00		14956.87				0.812																				
5980	24.97	27.86	14956.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14956.87		14981.83				0.812																				
5990	26.93	24.97	14981.83		SEAMLESS	GIRTH WELD	GIRTH WELD	1					14981.83		15008.76				0.812																				
6000	26.80	26.93	15008.76		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15008.76		15035.55				0.812																				
6010	24.93	26.80	15035.55		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15035.55		15060.49				0.812																				
6020	26.41	24.93	15060.49		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15060.49		15086.90				0.812																				
6030	28.11	26.41	15086.90		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15086.90		15115.00				0.812																				
6030	28.11	5.72	15092.62		SEAMLESS	MILL FAULT	EXT MFG	103	3	121	103	186	15092.62	185	15092.64	187	5.73	186	0.812	0.20	0.35	0.219	27							External									
6040	27.01	28.11	15115.00		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15115.00		15142.02				0.812																				
6050	24.73	27.01	15142.02		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15142.02		15166.74				0.812																				
6060	24.99	24.73	15166.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15166.74		15191.73				0.812																				
6070	25.67	24.99	15191.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15191.73		15217.40				0.812																				
6080	26.11	25.67	15217.40		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15217.40		15243.50				0.812																				
6080	26.11	1.25	15218.65		SEAMLESS	MILL FAULT	INT MFG	103	3	122	104	78	15218.65	71	15218.77	85	1.33	74	0.812	1.50	2.52	0.113	14							Internal									
6080	26.11	4.05	15221.44		SEAMLESS	MILL FAULT	INT MFG	103	3	123	105	47	15221.44	25	15221.86	69	4.44	45	0.812	4.96	7.60	0.194	24							Internal									
6080	26.11	6.55	15223.94		SEAMLESS	MILL FAULT	INT MFG	103	3	124	106	155	15223.94	144	15224.20	167	6.57	165	0.812	3.11	3.94	0.130	16							Internal									
6080	26.11	7.53	15224.93		SEAMLESS	MILL FAULT	INT MFG	103	3	125	107	147	15224.93	144	15224.99	150	7.56	147	0.812	0.75	0.98	0.073	9							Internal									
6080	26.11	8.07	15225.47		SEAMLESS	MILL FAULT	INT MFG	103	3	126	108	53	15225.47	32	15225.63	75	8.17	33	0.812	1.89	7.56	0.106	13							Internal									
6080	26.11	8.64	15226.04		SEAMLESS	MILL FAULT	INT MFG	103	3	127	109	229	15226.04	200	15226.35	257	8.67	233	0.812	3.70	9.92	0.130	16							Internal									
6090	26.28	26.11	15243.50		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15243.50		15269.78				0.812																				
6100	27.46	26.28	15269.78		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15269.78		15297.23				0.812																				
6110	27.92	27.46	15297.23		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15297.23		15325.15				0.812																				
6110	27.92	0.41	15297.64		SEAMLESS	MILL FAULT	INT MFG	103	3	128	110	14	15297.64	7	15298.00	22	0.73	12	0.812	4.25	2.56	0.106	13							Internal									
6120	25.80	27.92	15325.15		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15325.15		15350.95				0.812																				
6130	26.20	25.80	15350.95		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15350.95		15377.16				0.812																				
6140	15.68	26.20	15377.16		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15377.16		15392.84				0.812																				
6150	27.35	15.68	15392.84		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15392.84		15420.19				0.812																				
6160	26.78	27.35	15420.19		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15420.19		15446.97				0.812																				
6170	24.72	26.78	15446.97		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15446.97		15471.69				0.812																				
6180	25.96	24.72	15471.69		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15471.69		15497.65				0.812																				
6190	25.67	25.96	15497.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15497.65		15523.32				0.812																				
6200	26.95	25.67	15523.32		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15523.32		15550.26				0.812																				
6210	25.91	26.95	15550.26		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15550.26		15576.17				0.812																				
6220	20.55	25.91	15576.17		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15576.17		15596.72				0.812																				
6230	25.13	20.55	15596.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15596.72		15621.85				0.812																				
6240	26.81	25.13	15621.85		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15621.85		15648.67				0.812																				
6250	27.91	26.81	15648.67		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15648.67		15676.58				0.812																				
6260	17.72	27.91	15676.58		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15676.58		15694.29				0.812																				
6270	17.40	17.72	15694.29		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15694.29		15711.69				0.812																				
6280	21.20	17.40	15711.69		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15711.69		15732.89				0.812																				
6290	25.97	21.20	15732.89		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15732.89		15758.86				0.812																				
6300	18.76	25.97	15758.86		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15758.86		15777.62				0.812																				
6300	18.76	1.46	15760.32		SEAMLESS	MILL FAULT	EXT MFG	103	3	129	111	117	15760.32	112	15760.41	122	1.51	117	0.812	1.14	1.73	0.203	25							External									
6310	27.92	18.76	15777.62		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15777.62		15805.54				0.812																				
6310	27.92	0.13	15777.74		SEAMLESS	MILL FAULT	EXT MFG	103	3	130	112	168	15777.74	167	15777.77	168	0.14	168	0.812	0.35	0.20	0.194	24							External									
6320	17.66	27.92	15805.54		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15805.54		15823.20				0.812																				
6320	17.66	13.10	15818.64		SEAMLESS	MILL FAULT	*INT MFG	103	3	131	113	295	15818.64	277	15819.05	313	13.12	310	0.812	5.00	6.22	0.243	30							Internal									
6330	24.95	17.66	15823.20		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15823.20		15848.14				0.812																				
6340	27.39	24.95	15848.14		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15848.14		15875.53				0.812																				
6350	26.55	27.39	15875.53		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15875.53		15902.08				0.812																				
6350	26.55	7.07	15882.60		SEAMLESS	MILL FAULT	INT MFG	103	3	132	114	204	15882.60	202	15882.64	206	7.10	204	0.812	0.55	0.67	0.162	20							Internal									
6350	26.55	8.26	15883.79		SEAMLESS	MILL FAULT	INT MFG	103	3	133	115	323	15883.79	308	15884.04	338	8.47	313	0.812	3.07	5.28	0.122	15							Internal									
6350	26.55	9.68	15885.20		SEAMLESS	MILL FAULT	INT MFG	103	3	134	116	249	15885.20	220	15885.55	277	9.83	251	0.812	4.25	10.00	0.113	14							Internal									
6360	17.64	26.55	15902.08		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15902.08		15919.72				0.812																				
6370	25.14	17.64	15919.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15919.72		15944.86				0.812																				
6370	25.14	17.91	15937.63		SEAMLESS	MILL FAULT	EXT MFG	103	3	135	117	348	15937.63	343	15937.75	353	17.94	350	0.812	1.54	1.69	0.162	20							External									
6380	26.16	25.14	15944.86		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15944.86		15971.02				0.812																				
6390	25.54	26.16	15971.02		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15971.02		15996.56				0.812																				
6400	25.97	25.54	15996.56		SEAMLESS	GIRTH WELD	GIRTH WELD	1					15996.56		16022.53				0.812																				
6410	27.37	25.97	16022.53		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16022.53		16049.90				0.812																				
6410	27.37	0.57	16023.10		SEAMLESS	MILL FAULT	EXT MFG	103	3	136	118	3	16023.10	2	16023.12	3	0.58	3	0.812	0.28	0.20	0.194	24							External									
6420	17.89	27.37	16049.90		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16049.90		16067.79				0.812																				
6430	25.64	17.89	16067.79		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16067.79		16093.43				0.812																				
6440	16.89	25.64	16093.43		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16093.43		16110.31				0.812																				
6450	22.40	16.89	16110.31		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16110.31		16132.71				0.812																				
6460	16.95	22.40	16132.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16132.71		16149.66				0.812																				
6470	17.00	16.95	16149.66		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16149.66		16166.66				0.812																				
6480	17.31	17.00	16166.66		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16166.66		16183.97				0.812																				
6480	17.31	0.35	16167.01		SEAMLESS	MILL FAULT	EXT MFG	103	3	137	119	70	16167.01	69	16167.02	70	0.36	70	0.812	0.20	0.20	0.211	26							External									
6480	17.31	0.60	16167.25		SEAMLESS	MILL FAULT	*EXT MFG	103	3	138	120	23	16167.25	7	16168.29	38	0.96	28	0.812	12.48	5.43	0.300	37							External									
6490	25.16	17.31	16183.97		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16183.97		16209.13				0.812																				
6500	26.67	25.16	16209.13		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16209.13		16235.80				0.812																				
6510	27.03	26.67	16235.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16235.80		16262.84				0.812																				
6510	27.03	13.35	16249.15		SEAMLESS	MILL FAULT	EXT MFG	103	3	139	121	327	16249.15	325	16249.18	328	13.37	327	0.812	0.35	0.47	0.227	28							External									
6510	27.03	20.33	16256.14		SEAMLESS	MILL FAULT	*EXT MFG	103	3	140	122	336	16256.14	325	16256.52	348	20.35	347	0.812	4.57	4.02	0.227	28							External									
6520	25.69	27.03	16262.84		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16262.84		16288.53				0.812																				
6530	27.12	25.69	16288.53		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16288.53		16315.65				0.812																				
6540	26.93	27.12	16315.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16315.65		16342.58				0.812																				
6550	26.36	26.93	16342.58		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16342.58		16368.93				0.812																				
6560	23.35	26.36	16368.93		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16368.93		16392.28				0.812																				
6570	17.49	23.35	16392.28		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16392.28		16409.77				0.812																				
6580	28.12	17.49	16409.77		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16409.77		16437.88				0.812																				
6590	18.83	28.12	16437.88		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16437.88		16456.72				0.812																				
6600	27.22	18.83	16456.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16456.72		16483.93				0.812																				
6610	18.36	27.22	16483.93		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16483.93		16502.30				0.812																				
6620	18.05	18.36	16502.30		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16502.30		16520.35				0.812																				
6630	18.47	18.05	16520.35		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16520.35		16538.82				0.812																				
6640	25.26	18.47	16538.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16538.82		16564.09				0.812																				
6650	26.21	25.26	16564.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16564.09		16590.30				0.812																				
6660	26.80	26.21	16590.30		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16590.30		16617.10				0.812																				
6670	27.01	26.80	16617.10		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16617.10		16644.12				0.812																				
6680	27.76	27.01	16644.12		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16644.12		16671.87				0.812																				
6690	26.92	27.76	16671.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16671.87		16698.80				0.812																				
6700	27.94	26.92	16698.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16698.80		16726.74				0.812																				
6710	25.71	27.94	16726.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16726.74		16752.45				0.812																				
6720	26.90	25.71	16752.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16752.45		16779.35				0.812																				
6730	27.21	26.90	16779.35		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16779.35		16806.56				0.812																				
6740	23.34	27.21	16806.56		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16806.56		16829.90				0.812																				
6750	25.47	23.34	16829.90		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16829.90		16855.37				0.812																				
6760	26.89	25.47	16855.37		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16855.37		16882.26				0.812																				
6770	20.50	26.89	16882.26		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16882.26		16902.76				0.812																				
6780	27.81	20.50	16902.76		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16902.76		16930.57				0.812																				
6790	23.37	27.81	16930.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16930.57		16953.94				0.812																				
6800	27.68	23.37	16953.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16953.94		16981.62				0.812																				
6800	27.68	18.04	16971.98		SEAMLESS	MILL FAULT	*EXT MFG	103	3	141	123	299	16971.98	295	16972.29	304	18.06	295	0.812	3.74	1.57	0.243	30							External									
6810	25.72	27.68	16981.62		SEAMLESS	GIRTH WELD	GIRTH WELD	1					16981.62		17007.34				0.812																				
6810	25.72	8.56	16990.17		SEAMLESS	MILL FAULT	*INT MFG	103	3	142	124	167	16990.17	144	16990.46	190	8.60	150	0.812	3.39	7.95	0.235	29							Internal									
6820	27.11	25.72	17007.34		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17007.34		17034.45				0.812																				
6830	26.25	27.11	17034.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17034.45		17060.70				0.812																				
6840	24.34	26.25	17060.70		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17060.70		17085.04				0.812																				
6850	24.93	24.34	17085.04		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17085.04		17109.97				0.812																				
6860	25.97	24.93	17109.97		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17109.97		17135.95				0.812																				
6870	26.40	25.97	17135.95		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17135.95		17162.35				0.812																				
6880	27.17	26.40	17162.35		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17162.35		17189.51				0.812																				
6890	27.56	27.17	17189.51		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17189.51		17217.07				0.812																				
6900	27.24	27.56	17217.07		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17217.07		17244.31				0.812																				
6910	27.46	27.24	17244.31		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17244.31		17271.76				0.812																				
6920	23.82	27.46	17271.76		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17271.76		17295.58				0.812																				
6930	27.00	23.82	17295.58		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17295.58		17322.58				0.812																				
6940	24.21	27.00	17322.58		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17322.58		17346.80				0.812																				
6950	27.24	24.21	17346.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17346.80		17374.04				0.812																				
6960	27.69	27.24	17374.04		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17374.04		17401.73				0.812																				
6970	26.98	27.69	17401.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17401.73		17428.71				0.812																				
6980	24.81	26.98	17428.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17428.71		17453.52				0.812																				
6990	26.14	24.81	17453.52		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17453.52		17479.66				0.812																				
7000	25.67	26.14	17479.66		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17479.66		17505.33				0.812																				
7010	27.57	25.67	17505.33		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17505.33		17532.90				0.812																				
7020	27.18	27.57	17532.90		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17532.90		17560.07				0.812																				
7030	28.01	27.18	17560.07		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17560.07		17588.08				0.812																				

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Enbridge Energy Limited Partnership
MFL 20in Inspection

Line 6 20" Strait of Mackinac - East Leg
Run Date: 28 August 2013
Issue Date: 02 December 2013

Upstream Girth Weld	Joint Length (feet)	Relative Distance (feet)	Absolute Distance (feet)	Long Seam Orientation (Deg)	Weld Type	Feature Type	Comment	Feature Code	Feature Subtype	Feature ID	Cluster ID	Orient. (Deg)	Start Absolute Distance (feet)	Start Orient (Deg)	End Absolute Distance (feet)	End Orient. (Deg)	MSP Relative Distance (feet)	MSP Orient. (Deg)	Nominal Wall Thickness (in)	Length (in)	Width (in)	Peak Depth (in)	Peak Depth (%Nom WT)	MSP Rel to LSW (Deg)	0.95 DL RPR	Effective Length (in)	Effective Depth (in)	Effective Depth (%Nom WT)	Effective Area RPR	Radial Position	Data Degradation	Dent Depth (%OD)	Dent Depth (in)	Quality (%OD)	Min ID (in)	Dent to Close Proximity	Dent Association	Top/Bottom Dent	Relative Position
7040	28.04	28.01	17898.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17869.06		17914.62				0.812																			
7050	28.16	28.03	17926.12		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17841.06		17941.66				0.812																			
7060	23.87	28.46	17954.58		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17841.06		17994.96				0.812																			
7070	22.28	23.87	17969.95		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17864.66		17987.23				0.812																			
7080	28.60	22.28	17987.23		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17867.23		17713.76				0.812																			
7090	18.84	28.63	17713.76		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17713.76		17732.60				0.812																			
7100	25.07	18.84	17732.60		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17732.60		17757.67				0.812																			
7110	16.81	25.07	17757.67		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17757.67		17774.48				0.812																			
7120	27.98	16.81	17774.48		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17774.48		17802.45				0.812																			
7130	27.80	27.98	17802.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17802.45		17830.25				0.812																			
7140	18.22	27.80	17830.25		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17830.25		17848.47				0.812																			
7150	18.46	18.22	17848.47		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17848.47		17866.92				0.812																			
7160	19.85	18.46	17866.92		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17866.92		17886.77				0.812																			
7170	21.92	19.85	17886.77		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17886.77		17908.69				0.812																			
7180	27.27	21.92	17908.69		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17908.69		17935.96				0.812																			
7190	27.27	10.80	17919.49		SEAMLESS	MILL FAULT	INT.MF:0	103	3	143	125	298	17919.49	265	17920.44	327	11.71	324	0.812	11.38	10.91	0.069	11							Internal										
7180	27.27	11.51	17920.19		SEAMLESS	MILL FAULT	INT.MF:0	103	3	144	126	255	17920.19	166	17935.67	241	11.69	226	0.812	5.71	13.03	0.089	11							Internal										
7190	24.80	27.27	17935.96		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17935.96		17960.46				0.812																			
7200	25.22	24.80	17960.46		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17960.46		17985.67				0.812																			
7210	27.26	25.22	17985.67		SEAMLESS	GIRTH WELD	GIRTH WELD	1					17985.67		18012.94				0.812																			
7220	26.89	27.26	18012.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18012.94		18039.83				0.812																			
7230	24.72	26.89	18039.83		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18039.83		18064.54				0.812																			
7240	24.63	24.72	18064.54		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18064.54		18089.17				0.812																			
7250	26.16	24.63	18089.17		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18089.17		18115.33				0.812																			
7260	28.04	26.16	18115.33		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18115.33		18142.17				0.812																			
7270	24.27	28.84	18142.17		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18142.17		18166.44				0.812																			
7280	28.60	24.27	18166.44		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18166.44		18192.35				0.812																			
7290	24.86	28.93	18192.35		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18192.35		18217.22				0.812																			
7290	24.86	4.25	18197.61		SEAMLESS	MILL FAULT	EXT.MF:0	103	3	146	127	132	18197.61	131	18197.84	132	4.27	132	0.812	0.48	0.26	0.227	26							External										
7290	24.86	5.10	18196.46		SEAMLESS	MILL FAULT	EXT.MF:0	103	3	145	128	260	18196.46	259	18196.52	261	5.13	260	0.812	0.75	0.28	0.178	22							External										
7300	19.13	24.86	18219.22		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18219.22		18237.35				0.812																			
7310	26.88	19.13	18237.35		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18237.35		18263.90				0.812																			
7320	24.72	26.55	18263.90		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18263.90		18288.62				0.812																			
7330	27.59	26.72	18290.62		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18290.62		18317.71				0.812																			
7340	18.64	27.09	18317.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18317.71		18336.24				0.812																			
7350	26.30	18.64	18336.24		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18336.24		18362.54				0.812																			
7360	16.19	26.30	18362.54		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18362.54		18378.73				0.812																			
7370	27.86	16.19	18378.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18378.73		18406.59				0.812																			
7380	18.37	27.86	18406.59		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18406.59		18424.75				0.812																			
7390	26.30	18.37	18424.75		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18424.75		18451.05				0.812																			
7400	26.87	26.30	18451.05		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18451.05		18477.92				0.812																			
7410	17.55	26.87	18477.92		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18477.92		18495.47				0.812																			
7400	17.66	17.55	18495.47		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18495.47		18512.13				0.812																			
7400	27.24	17.66	18512.13		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18512.13		18539.37				0.812																			
7440	23.84	27.24	18539.37		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18539.37		18563.21				0.812																			
7450	24.52	23.84	18563.21		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18563.21		18587.73				0.812																			
7460	27.14	24.52	18587.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18587.73		18614.87				0.812																			
7470	26.46	27.14	18614.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18614.87		18641.33				0.812																			
7480	26.30	26.46	18641.33		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18641.33		18667.63				0.812																			
7490	16.17	26.30	18667.63		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18667.63		18683.79				0.812																			
7500	28.12	16.17	18683.79		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18683.79		18711.91				0.812																			
7510	27.26	28.12	18711.91		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18711.91		18739.17				0.812																			
7520	21.98	27.26	18739.17		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18739.17		18761.16				0.812																			
7530	28.89	21.98	18761.16		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18761.16		18790.05				0.812																			
7540	16.14	28.89	18790.05		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18790.05		18807.19				0.812																			
7550	20.60	16.14	18807.19		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18807.19		18827.79				0.812																			
7560	17.36	20.60	18827.79		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18827.79		18846.09				0.812																			
7570	25.66	17.30	18846.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18846.09		18871.75				0.812																			
7580	27.29	25.66	18871.75		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18871.75		18899.03				0.812																			
7590	27.64	27.29	18899.03		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18899.03		18926.67				0.812																			
7600	19.42	27.64	18926.67		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18926.67		18946.09				0.812																			
7610	27.70	19.42	18946.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18946.09		18973.79				0.812																			
7610	27.70	19.74	18965.83		SEAMLESS	MILL FAULT	EXT.MF:0	103	3	147	129	48	18965.83	46	18966.04	49	19.94	47	0.812	2.48	0.65	0.211	26							External										
7620	26.88	27.70	18973.79		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18973.79		18966.67				0.812																			
7630	23.95	26.88	18966.67		SEAMLESS	GIRTH WELD	GIRTH WELD	1					18966.67		19022.62				0.812																			
7640	24.01	23.95	19022.62		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19022.62		19046.62				0.812																			
7650	26.70	24.01	19046.62		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19046.62		19073.32				0.812																			
7660	26.40	26.70	19073.32		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19073.32		19099.72				0.812																			
7670	26.66	26.40	19099.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19099.72		19125.38				0.812																			
7680	27.30	26.66	19125.38		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19125.38		19152.68				0.812																			
7690	25.15	27.30	19152.68		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19152.68		19177.83				0.812																			
7700	26.55	25.15	19177.83		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19177.83		19203.38				0.812																			
7710	25.46	26.83	19203.38		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19203.38		19228.81				0.812																			
7720	24.96	25.46	19228.81		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19228.81		19253.37				0.812																			
7730	26.70	24.56	19253.37		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19253.37		19279.07				0.812																			
7740	26.23	26.70	19279.07		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19279.07		19305.31				0.812																			
7750	27.41	26.23	19305.31		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19305.31		19332.71				0.812																			
7760	26.30	27.41	19332.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19332.71		19359.01				0.812																			
7770	20.66	26.30	19359.01		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19359.01		19379.66				0.812																			
7780	27.17	25.65	19379.66		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19379.66		19406.82				0.812																			
7790	27.79	27.17	19406.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19406.82		19434.61				0.812																			
7790	27.79	23.59	19400.41		SEAMLESS	MILL FAULT	EXT.MF:0	103	3	148	130	116	19400.41	110	19401.00	120	29.71	114	0.812	7.66	1.69	0.227	26							External										
7790	27.79	25.17	19432.00		SEAMLESS	MILL FAULT	EXT.MF:0	103	3	149	131	173	19432.00	166	19432.89	166	25.67	174	0.812	6.39	2.64	0.227	26							External										
7800	27.24	27.19	19434.61		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19434.61		19461.25				0.812																			
7810	20.88	27.24	19461.25		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19461.25		19482.13				0.812																			
7820	28.64	20.88	19482.13		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19482.13		19509.77				0.812																			
7830	27.94	28.64	19509.77		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19509.77		19537.71				0.812																			
7880	27.94	23.68	19531.85		SEAMLESS	MILL FAULT	EXT.MF:0	103	3	150	132	311	19531.85	310	19531.89	311	29.16	311	0.812	0.31	0.26	0.175	21							External										
7840	26.22	27.94	19559.71		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19559.71		19585.94				0.812																			
7850	26.66	26.22	19585.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19585.94		19639.49				0.812																			
7860	25.96	26.66	19639.49		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19639.49		19665.45				0.812																			
7870	27.83	25.96	19665.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19665.45		19693.28				0.812																			
7880	28.44	27.83	19693.28		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19693.28		19659.73				0.812																			
7890	25.59	28.44	19659.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19659.73		19685.32				0.812																			
7900	29.42	28.59	19685.32		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19685.32		19715.73				0.812																			
7910	27.59	29.42	19715.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19715.73		19747.32				0.812																			
7920	28.19	27.59	19747.32		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19747.32		19775.52				0.812																			
7930	24.03	28.19	19775.52		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19775.52		19799.54				0.812																			
7940	21.73	24.03	19799.54		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19799.54		19821.26				0.812																			
7950	28.87	21.72	19821.26		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19821.26		19849.83				0.812																			
7960	28.81	28.57	19849.83		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19849.83		19878.74				0.812																			
7970	26.17	28.91	19878.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19878.74		19901.91				0.812																			
7980	28.49	26.17	19901.91		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19901.91		19930.40				0.812																			
7990	27.47	28.49	19930.40		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19930.40		19957.87				0.812																			
8000	28.14	27.47	19957.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19957.87		19986.01				0.812																			
8010	21.26	28.14	19986.01		SEAMLESS	GIRTH WELD	GIRTH WELD	1					19986.01		20007.27				0.812																			
8020	26.57	21.26	20007.27		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20007.27		20033.84				0.812																			
8030	23.46	26.57	20033.84		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20033.84		20057.29				0.812																			
8040	28.42	23.46	20057.29		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20057.29		20085.72				0.812																			
8050	26.91	28.42	20085.72		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20085.72		20112.63				0.812																			
8060	27.96	26.91	20112.63		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20112.63		20140.59				0.812																			
8070	13.59	27.96	20140.59		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20140.59		20154.18				0.812																			
8080	26.19	13.59	20154.18		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20154.18		20174.36				0.812																			
8090	26.91	20.18	20174.36		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20174.36		20201.27				0.812																			
8100	26.03	26.91	20201.27		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20201.27		20228.30				0.812																			
8110	26.88	26.03	20228.30		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20228.30		20255.18				0.812																			
8120	26.96	26.88	20255.18		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20255.18		20279.14				0.812																			
8130	26.16	26.96	20279.14		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20279.14		20305.31				0.812																			
8130	26.16	3.27	20282.42		SEAMLESS	MILL FAULT	EXT.MF:0	103	3	151	133	340	20282.42	303	20284.43	18	3.79	357	0.812	2.406	13.11	0.245	30							External										
8130	26.16	5.77	20288.92		SEAMLESS	MILL FAULT	EXT.MF:0	103	3	152	134	276	20284.92	269	20285.31	282	5.98	276	0.812	4.76	2.32	0.203	25							External										
8140	24.49	26.16	20305.31		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20305.31		20329.79				0.812																			
8150	28.09	24.49	20329.79		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20329.79		20354.87				0.812																			
8160	27.45	25.09	20354.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20354.87		20382.29				0.812																			
8170	24.37	27.43	20382.29		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20382.29		20406.66				0.812																			
8180	24.57	24.37	20406.66		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20406.66		20431.23				0.812																			
8190	25.26	24.57	20431.23		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20431.23		20456.49				0.812																			
8200	24.57	25.26	20456.49		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20456.49		20481.06				0.812																			
8210	17.46	24.57	20481.06		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20481.06		20498.52				0.812																			
8220	25.96	17.46	20498.52		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20498.52		20524.48				0.812																			
8230	25.44	25.80	20524.32		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20524.32		20549.76				0.812																			
8240	27.57	25.44	20549.76		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20549.76		20577.33				0.812																			
8240	27.57	19.73	20569.54		SEAMLESS	MILL FAULT	EXT.MF:0	103	3	153	135	124	20569.54	119	20569.73	126	19.83	123	0.812	2.28	1.81	0.203	25							External										
8240	27.57	19.15	20569.91		SEAMLESS	MILL FAULT	EXT.MF:0	103	3	154	136	192	20569.91	191	20569.95	192	19.17	192	0.812	0.49	0.26	0.203	25							External										
8250	24.56	27.57	20577.33		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20577.33		20601.83				0.812																			
8260	27.44	24.50	20601.83		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20601.83		20629.27				0.812																			
8270	24.18	27.44	20629.27		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20629.27		20653.45				0.812																			
8280	26.91	24.18	20653.45		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20653.45		20680.36				0.812																			
8290	26.30	26.91	20680.36		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20680.36		20706.66				0.812																			
8300	27.26	26.30	20706.66		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20706.66		20733.92				0.812																			
8310	20.92	27.26	20733.92		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20733.92		20754.85				0.812																			
8320	27.89	20.92	20754.85		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20754.85		20782.73				0.812																			

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Upstream Girth Weld	Joint Length (feet)	Relative Distance (feet)	Absolute Distance (feet)	Long Seam Orientation (Deg)	Weld Type	Feature Type	Comment	Feature Code	Feature Subtype	Feature ID	Cluster ID	Orient. (Deg)	Start Absolute Distance (feet)	Start Orient (Deg)	End Absolute Distance (feet)	End Orient. (Deg)	MSP Relative Distance (feet)	MSP Orient. (Deg)	Nominal Wall Thickness (in)	Length (in)	Width (in)	Peak Depth (in)	Peak Depth (%NominWT)	MSP Rel to LSW (Deg)	0.05 DL RPR	Effective Length (in)	Effective Depth (in)	Effective Depth (%NominWT)	Effective Area RPR	Radial Position	Data Degradation	Dent Depth (%OD)	Dent Depth (in)	Quality (%OD)	Min ID (in)	Dent In Close Proximity	Dent Association	Top/Bottom Dent	Relative Position
8550	24.74	27.89	20792.73		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20792.73		20857.47				0.812																			
8560	9.95	37.71	20857.47		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20857.47		20867.37				0.812																			
8570	25.89	9.85	20867.37		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20867.37		20941.76				0.812																			
8580	25.89	9.85	20823.492		SEAMLESS	BEND	10 DEG BEND-COLD UNDER	11	2	166			20823.492		20824.92				0.812																			
8590	25.47	25.89	20941.76		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20941.76		20967.22				0.812																			
8600	27.34	25.47	20967.22		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20967.22		20994.57				0.812																			
8610	24.96	27.34	20994.57		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20994.57		21019.53				0.812																			
8620	24.96	14.73	20909.30		SEAMLESS	BEND	5 DEG BEND-COLD OVER	11	2	166			20909.30		20909.30				0.812																			
8630	25.42	24.96	21019.52		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21019.52		21044.94				0.812																			
8640	26.34	25.42	21044.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21044.94		21071.27				0.812																			
8650	26.26	26.34	20971.27		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20971.27		20996.53				0.812																			
8660	27.31	26.26	20996.53		SEAMLESS	GIRTH WELD	GIRTH WELD	1					20996.53		21023.84				0.812																			
8670	26.85	27.31	21023.84		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21023.84		21049.70				0.812																			
8680	25.77	26.85	21049.70		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21049.70		21075.46				0.812																			
8690	27.57	25.77	21075.46		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21075.46		21103.03				0.812																			
8700	27.56	27.57	21103.03		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21103.03		21130.59				0.812																			
8710	27.11	27.56	21130.59		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21130.59		21157.19				0.812																			
8720	26.62	27.11	21157.19		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21157.19		21183.80				0.812																			
8730	28.36	26.62	21183.80		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21183.80		21212.11				0.812																			
8740	28.36	12.69	21196.48		SEAMLESS	BEND	20 DEG BEND-COLD RIGHT	11	2	167			21196.48		21196.48				0.812																			
8750	28.36	16.26	21200.06		SEAMLESS	MILL FAULT	*EXT MFG	103	3	159	137	282	21200.06	275	21200.42	276	0.812	4.33	2.28	0.248	36			External															
8760	28.36	17.46	21201.26		SEAMLESS	MILL FAULT	*EXT MFG	103	3	159	138	281	21201.26	274	21201.99	227	17.95	224	0.812	0.74	9.17	0.288	35			External															
8770	28.36	22.05	21205.85		SEAMLESS	MILL FAULT	*EXT MFG	103	3	160	139	148	21205.85	126	21206.51	161	22.42	127	0.812	7.87	8.08	0.284	35			External															
8780	28.36	22.14	21205.94		SEAMLESS	MILL FAULT	*EXT MFG	103	3	161	140	196	21205.94	191	21206.20	255	22.16	193	0.812	3.15	1.55	0.219	27			External															
8790	28.36	22.92	21206.72		SEAMLESS	MILL FAULT	*EXT MFG	103	3	162	141	92	21206.72	81	21206.84	102	22.84	101	0.812	1.42	3.68	0.289	32			External															
8800	28.58	28.36	21212.11		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21212.11		21238.88				0.812																			
8805	28.58	11.09	21223.19		SEAMLESS	BEND	15 DEG BEND-COLD RIGHT	11	2	163			21223.19		21223.19				0.812																			
8810	28.96	28.58	21238.69		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21238.69		21266.83				0.812																			
8820	27.02	28.96	21251.80		SEAMLESS	BEND	25 DEG BEND-COLD RIGHT	11	2	164			21251.80		21292.65				0.812																			
8830	27.02	10.01	21278.83		SEAMLESS	BEND	20 DEG BEND-COLD RIGHT	11	2	166			21278.83		21278.83				0.812																			
8840	23.39	27.02	21292.65		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21292.65		21316.04				0.812																			
8845	19.73	23.39	21316.04		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21316.04		21336.77				0.812																			
8850	18.91	19.73	21336.77		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21336.77		21354.68				0.812																			
8860	26.38	18.81	21354.68		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21354.68		21380.96				0.812																			
8870	26.85	26.38	21380.96		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21380.96		21407.81				0.812																			
8880	27.13	26.85	21407.81		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21407.81		21434.94				0.812																			
8890	26.00	27.13	21434.94		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21434.94		21460.95				0.812																			
8900	25.88	26.00	21460.95		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21460.95		21486.82				0.812																			
8910	24.83	25.88	21486.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21486.82		21511.46				0.812																			
8920	23.67	24.83	21511.46		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21511.46		21536.12				0.812																			
8930	28.31	23.67	21536.12		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21536.12		21563.43				0.812																			
8940	27.85	28.31	21563.43		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21563.43		21591.28				0.812																			
8950	26.27	27.85	21591.28		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21591.28		21617.55				0.812																			
8960	27.19	26.27	21617.55		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21617.55		21644.74				0.812																			
8970	1.41	27.19	21646.74		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21644.74		21646.15				0.812																			
8975	1.20	1.41	21646.15		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21646.15		21647.35				0.812																			
8975	1.20	0.68	21646.74		SEAMLESS	JOINT INSULATED	JOINT INSULATED	81		186			21646.74		21646.74				0.812																			
8985	1.47	1.20	21647.35		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21647.35		21648.82				0.812																			
8990	27.01	1.47	21648.82		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21648.82		21675.83				0.812																			
8700	2.57	27.01	21675.83		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21675.83		21678.40				0.812																			
8700	2.57	1.25	21677.09		SEAMLESS	OFFTAKE	16 IN OFFTAKE-FORGED	40		167		270	21677.09	270	21677.09	270			0.812																			
8710	2.64	2.57	21678.40		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21678.40		21681.34				0.812																			
8710	2.64	2.64	21681.34		SEAMLESS	LOCATION COMMENT	STRAITS OF MACKINAC - EAST LEG	102		188			21681.34		21681.34				0.812																			
8720	3.49	2.64	21681.34		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21681.34		21684.83				0.812																			
8720	3.49	1.79	21683.12		SEAMLESS	VALVE	BALL VALVE MP 1479.66	51		169			21683.12		21683.12				0.812																			
8750	22.04	3.49	21684.83		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21684.83		21706.87				0.812																			
8760	22.04	7.46	21692.29		SEAMLESS	BEND	10 DEG BEND-COLD UNDER	11	2	170			21692.29		21692.29				0.812																			
8760	15.12	22.04	21706.87		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21706.87		21716.99				0.812																			
8770	25.11	15.12	21716.99		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21716.99		21742.09				0.812																			
8770	25.11	0.68	21716.03		SEAMLESS	OFFTAKE	2 IN OFFTAKE-WELDOLET	41		171		0	21716.03	0	21716.03	0			0.812																			
8780	25.11	9.61	21725.59		SEAMLESS	BEND	10 DEG BEND-COLD OVER	11	2	172			21725.59		21725.59				0.812																			
8780		25.11	21742.09		SEAMLESS	GIRTH WELD	GIRTH WELD	1					21742.09						0.812																			

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