ENBRIDGE	External Pipeline Inspection Form for L5 Straits of Mackinac

General Information			
Date:	08/15/2017	**Contractor:**	Ballard Marine Co
AFE / W.O.#:	20008990	**Company Rep / Inspector:**	Trish McClelland
Segment:	EAS-1	**Water Depth (ft):**	74
Longitude:	[redacted]	**Latitude:**	[redacted]

External Pipe Coating Inspection Results			
General Area	☒ Disturbed Area ☐Dislodged Coating ☐Holiday	**Size of anomaly (ft^2):**	48.84 (46'x 1.74')
Holiday 1	☐ Disturbed Area ☐Dislodged Coating ☒Holiday	**Size of anomaly (ft^2):**	0.01 (3.0"x0.5")
	☐ Disturbed Area ☐Dislodged Coating ☐Holiday	**Size of anomaly (ft^2):**	
	☐ Disturbed Area ☐Dislodged Coating ☐Holiday	**Size of anomaly (ft^2):**	
	☐ Disturbed Area ☐Dislodged Coating ☐Holiday	**Size of anomaly (ft^2):**	
Corrosion present:	☐YES ☒NO	**Biota present:**	☒YES ☐ NO
Dislodged coating observed on the lake floor: ☐YES ☒NO		**Lake floor location wrt pipe:**	N/A (pipe is suspended)

Comments/Issues/Discussion

EAS-1 within span of E-72. Total span is 46' long, within the areas of 10:00 and 2:00.
South End Lat: 45.79908070 long 84.76762724
North End Lat: 45.79920077 long 84.76760225
Center Line listed in general information above.

One (1) feature with DFT measurements below the minimum resolvable thickness of gauge was found. The Polatrak CP gun was used to confirm the existence of bare metal:

Holiday 1 presented average CP reading of -1680mV CSE (holiday confirmed). Holiday found in coating at coordinates Lat: 4579912833, Long: 84.76762989.

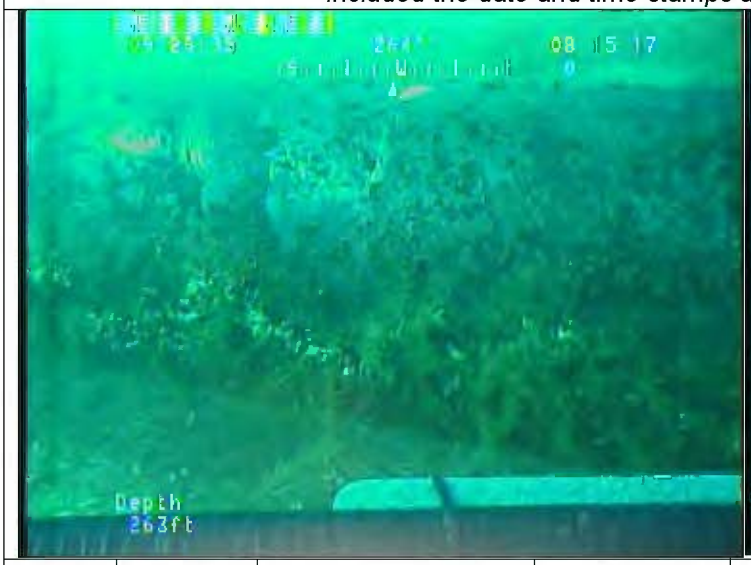
No external corrosion was detected by dive team.

Contractor Signature	Enbridge Representative/ Inspector Signature

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Visual Inspection (General Coating Condition)

For all sections of dislodged coating or holidays, provide pictures below.
Included the date and time stamps associated with video surveillance.





Date:	8/15/17	Frame(HH:MM:SS)	09:26:36	Date:	8/15/17	Frame(HH:MM:SS)	09:27:04

Coating Gauge Information

Manufacturer:	Elcometer Inspection Equip	**Product:**	211 Coating Thickness Gauge
Last Calibrated:	08/09/2017	**Next Calibration Due:**	08/09/2018
Gauge verified prior to use:	☒YES ☐ NO		

Coating Thickness Inspection Data

Thickness Measure (mil)	Area of Interest	Undisturbed Area (< 2 in.)	Undisturbed Area (> 5 ft.)
North End #1	115	125	130
#2	109	135	130
#3	115	136	140
South End #4	120	145	140
#5	120	128	130
#6	101	130	134
Average Thickness	113	133	134

Additional Coating Thickness Inspection Data (A/R)

	Close as possible to 9 o'clock	Close as possible to 12 o'clock	Close as possible to 2 o'clock
North End	104	120	122
---	104	115	118
South End	130	130	140

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Cathodic Protection and Coating Measurements (if Holiday is found) - Holiday 1							
CP Reading #1 (mV)	-1676 -1683	CP Reading #2 (mV)	-1674 -1681	CP Reading #3 (mV)	-1690 -1674		
Temperature (°F)	NR	DFT at Holiday (mil)	≤ 25	DFT Adjacent to Holiday (mil)	96, 94, 95		
For all sections of dislodged coating or holidays, provide pictures below. *Included the date and time stamps associated with video surveillance.*							





Date:	8/15/17	Frame(HH:MM:SS)	13:02:03	Date:	8/15/17	Frame(HH:MM:SS)	13:05:42